

THE LEGAL PROTECTION OF FORESTS IN INTERNATIONAL ENVIRONMENTAL LAW, SHORTCOMINGS AND COMPARATIVE ANALYSIS

Alois Aldridge Mugadza

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DOCTORAL THESIS

TITLE: The legal protection of forests in international environmental law: Shortcomings and comparative analysis.

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ABBREVIATIONS

ABARES	Australian Bureau of Agricultural and Resource Economics and Sciences
AWG-LCA	Ad Hoc Working Group on Long-term Cooperative Action
AU	African Union
CARE	Cooperative for Assistance and Relief Everywhere
CBD	Convention on Biological Diversity
CF	Community Forestry
CPF	Collaborative Partnership on Forests
COPs	Conference of Parties
CDM	Clean Development Mechanism
CITES	Convention on International Trade in Endangered Species of Wild
CCBA	Community and Biodiversity Alliance
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CSIRO	Commonwealth Scientific and Industrial Research Organization
EIA	Environmental Impact Assessment
EA	Ecosystem Approach
EUTR	European Union Timber Regulations
EU	European Union
ECOSOC	United Nations Economic and Social Council
ELD	Environmental Liability Directive
FAO	United Nations Food and Agricultural Organisation
FTE	Full-Time Equivalent
FRA	Forest Resources Assessment

FSC	Forest Stewardship Council
FCFC	Forest Carbon Partnership Facility
FLEGT	Forest Law Enforcement, Governance and Trade Action Plan
FCPF	Forest Carbon Partnership Facility
GDP	Gross Domestic Product
GHG	Green House Gases
GNP	Gross National Profit
GEF	Global Environment Facility
GMOs	Genetically modified organisms
GCF	Green Climate Fund
IPCC	Intergovernmental Panel on Climate Change
ITTA	International Tropical Timber Agreement
ITTO	International Tropical Timber Organization
IPF	Intergovernmental Panel on Forests
IFF	Intergovernmental Forum on Forests
IAF	International Arrangement on Forests
ICJ	International Court of Justice
IUCN	International Union for the Conservation of Nature
ICCAs	Indigenous and Community Conserved Areas
ILO	International Labour Organization
IESC	Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development
JJ	Joint Implementation

LULUCF	Land Use, Land-Use Change and Forestry
LDN	Land Degradation Neutrality
MDGs	Millennium Development Goals
MEA	Millennium Ecosystem Assessment
NGO	Non-Governmental Organisation
NEMA	National Environmental Management Act
NDP	National Development Plans
NLBI	Non-Legally Binding Instrument on All Types of Forests
NFP	National Forest Programmes
NFPS	National Forest Policy Statement
NFI	National Forest Inventory
NFISC	National Forest Inventory Steering Committee
OECD	Organisation for Economic Co-operation and Development
PES	Payment for Ecosystem Service
REDD	Reducing emissions from deforestation and forest degradation
REDDES	Reducing Deforestation and Forest Degradation and Enhancing Environmental Services
RFA	Regional Forest Agreements Act
SDGs	Sustainable Development Goals
SFM	Sustainable Forest Management
SBSTA	Subsidiary Body on Scientific, Technical and Technological Advice
TRAFFIC	Wildlife Trade Monitoring Network
UNESCO	United Nations Educational, Scientific and Cultural Organization

UNFCCC	United Nations Framework Convention on Climate Change
UNCCD	United Nations Convention to Combat Desertification
UNCED	United Nations Conference on Environmental and Development
UNEP	United Nations Environmental Program
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNFF	United Nations Forum on Forests
UNCAC	United Nations Convention on Anti-Corruption
UNEP-WCMC	UNEP World Conservation Monitoring Centre
USA	United States of America
VPA	Voluntary Partnership Agreements
WTO	World Trade Organisation
WDPA	World Database on Protected Areas
ZNLD	Zero Net Land Degradation

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PREAMBLE

The thesis will investigate how the existing international environmental law relates to forest protection and what are the issues that have hampered the making of an important instrument for forest protection since forests' functions are vital and important. Since there is no international binding instrument for forest protection, have countries done enough to protect forests. What forest protection efforts have been put in place in Spain, South Africa and Australia? Are these efforts sufficient and adequate to ignore the need of a forest instrument? What are some of the lessons from these countries and their legal regimes?

Chapter 1: Introduction

Natural forests are land spanning to more than 0.5 hectares, with a crown cover of an estimated 10 per cent and trees able to reach thresholds in situ.¹ This does not include land under agricultural and urban use. There is an estimated 30 per cent of different types of forest lands cover on earth, and such land cover performs vital socio-economic and ecological functions.² The well-known functions include water regulation, soil conservation, carbon sequestration, biodiversity habitats, and provision of well-being for indigenous people who live in or near natural forests.³ Natural forests also provide non-timber forest products such as edible fruits, fibre, traditional medicines, oils and latex.⁴

However, the rate at which natural forests are being degraded and cut down internationally is a cause for a concern.⁵ When natural forests are destroyed, species habitats are lost and become threatened with extinction; water decreases in quality and quantity mainly due to debris and soil erosion resulting in flooding; leading to food insecurity increases; and loss of carbon stored in trees and forest soil.⁶ Thus, the effects of deforestation increase the chances of climate change, loss of biological diversity, increase in droughts and desertification. The human anthropogenic activities that cause forest degradation and deforestation are forest fires, agricultural activities, illegal logging, pollution, urban development and introduction of invasive species.⁷

1. Factual Background

¹ Food and Agriculture Organisation, Forest Resources Assessment Working Paper, Terms and Definitions, 180 (2015). See website <http://www.fao.org/3/ap862e/ap862e00.pdf>, 1- 31, page 3. Accessed on the 18th of February 2020.

² MacDicken G K *et al*, 'Global progress toward sustainable development', 35 (2015), *Forest Ecology and Management*, 47-56, page 47. Also see World Bank Statistics Data on Forests (Food and Agriculture Organisation electronic data). See website on <http://data.worldbank.org/indicator/AG.LND.FRST.ZS>. Accessed on 19 November 2016.

³ This 'well-being' can be the provision of fuel wood and also collecting of traditional medicines which they sell along main roads or inner cities.

⁴ See Hanley N, Shogren F J and White B, *Introduction to Environmental Economics*, Oxford University Press, (2001), 1-350, page 219-220.

⁵ Ehui K S, Hertel W T and Preckel V P, 'Forest resource depletion, soil dynamics and agricultural productivity in the tropics', 18 (1990), *Journal of Environmental Economics and Management*, 136-154, page 136.

⁶ Alix-Garcia, 'A spatial analysis of common property deforestation', 53 (2007), *Journal of Environmental Economics and Management*, 141-157, page 141.

⁷ Polasky S, Costello C and McAusland C, 'On trade, land-use, and biodiversity', 48 (2004), *Journal of Environmental Economics and Management*, 911-925, page 911. Also see Kashian M Daniel *et al*, 'Carbon storage on landscapes with standing-replacing fires', 56 (7) (2006), *BioScience*, 598-606.

Natural forests are important for their ecological goods and are rich in different species. In addition, they contain an estimated 80 per cent of the terrestrial biomass and are estimated to be a habitat for half of the world's fauna and flora species.⁸ Apart from biodiversity conservation and providing livelihoods to millions, many people have gained employment (directly and indirectly) from selling and consuming forest products and services. The formal timber sector is estimated to employ more than 13.2 million people.⁹ It is also estimated that approximately 410 million people depend solely on forests for subsistence farming and their income, and about 1.6 billion people are dependent on forest services and products.¹⁰

In addition, forest wood and other products are estimated to add €545 billion to the world market annually and that internationally traded forest products are estimated to be among the regions of €180 billion.¹¹ The World Bank estimates that the wood fuel sector has created millions of jobs in the form of small scale wood fuel collection, charcoal production, transportation and retail.¹² In Sub-Saharan Africa, it is estimated that 7 million people are employed in the charcoal sector alone.¹³

In Europe, the gross value added by the forest sector in 2014 to 2015 was approximately €103 billion and increasing, which is about 0.8 per cent Gross Domestic Product (GDP).¹⁴ The total value of marketed non-wood products was reported in 2015 to be almost €2.3 billion.¹⁵ About 73 per cent of the total value generated by non-wood goods comes from marketed plant products.¹⁶ Moreover, the forest services reported in Europe were biospheric, social and

⁸ Morales-Hidalgo D, Oswalt N S and Somanathan E, 'Status and trends in global primary forest, protected areas, and areas designated for conservation of biodiversity from the Global Forest Resources Assessment 2015', 352 (2015), *Forest Ecology and Management*, 68-77, page 68.

⁹ Forests Generate Jobs and Incomes, March 16, 2016. See website <http://www.worldbank.org/en/topic/forests/brief/forests-generate-jobs-and-incomes>. Accessed on 11 November 2016.

¹⁰ Kohl M *et al*, 'Changes in forest production, biomass and carbon: Results from the 2015 UN FAO Global Forest Resource Assessment', 352 (2015), *Forest Ecology and Management*, 21-34, page 21.

¹¹ *Ibid*, page 22.

¹² *Ibid*.

¹³ *Ibid*.

¹⁴ Food and Agriculture Organisation of the United Nations. Forest Europe, 2015: State of Europe's Forests 2015, page 18. See website: <http://www.foresteurope.org/docs/fullsoef2015.pdf>. Published by: Ministerial Conference on the Protection of Forests in Europe, Forest Europe Liaison Unit Madrid, Spain. Accessed on the 17 November 2016.

¹⁵ *Ibid*, page 120.

¹⁶ Whiteman A, Wickramasinghe A and Pinya L, 'Global trends in forest ownership, public income and expenditure on forestry and forestry employment', 352 (2015), *Forest Ecology and Management*, 99-108, page 100.

recreational services.¹⁷ Consequently, more than 110 million hectares of natural forests in Europe are protected for ecosystem services.¹⁸

In addition, wetlands and watersheds in forest areas supply about 75 per cent of the freshwater accessible for agricultural, industrial, domestic and ecological needs around the world.¹⁹ Furthermore, forest ecosystems are estimated to contain about 60 per cent of all carbon stored in terrestrial ecosystems.²⁰ The process of photosynthesis in plants bonds carbon into carbohydrates and stores this in the tree barks and leaves.²¹

Natural forests play a vital role in the mitigation of climate change. It is estimated that from 2005 to 2015 European forests sequestered carbon of 719 million tons.²² Forests have emitted about 30 per cent of the annual global carbon from anthropogenic carbon emissions.²³ Thus, forests are carbon storage ‘warehouses’ and they contribute to mitigating climate change.²⁴

However, about 0.5 million hectares of natural forests are damaged by wildfires, however this keeps on increasing annually.²⁵ It is estimated about 19 to 36 per cent of forests have been deforested and degraded by anthropogenic influences.²⁶ Approximately, 1.4 per cent of the forest land cover has been deforested and degraded due to agricultural activities and forest fires during the 2005-2015 time span.²⁷ The loss of forest ecosystems in Europe has resulted in a decrease in fauna and flora species. This has been mainly due to forest land use changes to

¹⁷ Ibid.

¹⁸ Ibid.

¹⁹ World Bank Website accessed on <http://www.worldbank.org/en/news/feature/2016/03/18/why-forests-are-key-to-climate-water-health-and-livelihoods>. Accessed on 11 November 2016.

²⁰ Streck C and Scholz M S, ‘The role of forests in global climate: Whence we come and where we go’, 89 (5) (2006), *International Affairs (Royal Institute of International Affairs 1944-)*, 861-879, page 863.

²¹ Ibid, page 861. Also see Fuentes D J and Barr G J, ‘Mangroves forests and carbon water cycling’, 213 (2015), *Agricultural and Forest Meteorology*, 263-265, page 263.

²² See note 16. Carbon sequestration means the transference of atmospheric carbon into pools and storing it so that it is not remitted immediately back into the atmosphere. See for definition: Lal R, ‘Soil carbon sequestration impacts on global climate change and food security’, 304 (2004), *SCIENCE*, 1623-1627, page 1623.

²³ Bellassen V and Luyssaert S, ‘Managing forests in uncertain times’, 506 (2014), *Nature*, 153-155, page 155.

²⁴ Also see Barford C C *et al*, ‘Factors controlling long- and short-term sequestration of atmospheric CO₂ in a Mid-latitude forest’, 294 (2001), *SCIENCE*, 1688-1691, and, Murillo R C J, ‘Temporal variations in the carbon budget of forest ecosystems in Spain’, 7 (2) (1997), *Ecological Applications*, 461-469.

²⁵ See note 16.

²⁶ Busa H M J, ‘Deforestation beyond borders: Addressing the disparity between production and consumption of global resources’, 6 (2013), *Conservation Letters*, 192-199, page 192.

²⁷ See note 16.

agriculture land, industrial uses and urban developments.²⁸ Further, forest land-use change and degradation contribute significantly to the world's greenhouse gases (GHG).²⁹

Nevertheless, the world degrades about 13 million hectares of forest annually; this is usually countered by reforestation and afforestation programmes, making the net annual forest loss of approximately 5.6 million hectares which is approximately the size of Costa Rica.³⁰ However, given the rate of deforestation internationally, 9 per cent of tree species are currently threatened with extinction.³¹ This also adds to climate change vulnerability, effects and risks.

2. Problem statement

Despite many international multilateral initiatives, the forest law regime remains fragmented with a serious issue, namely the lack of a specific international law binding instrument which can bring an organised structural framework in the forest protection regime. Given the obvious, which is that there is a lack an overarching binding instrument on forests, the thesis explores how much protection the existing international environmental instruments already provide; how this could be solved if at all; whether any existing obstacles can be removed or not; what the contents of a hypothetical instrument should be. Thus far, what could be done in legal science to protect natural forests?³²

It is important to understand the functions of forests to give them their inherent importance and value, as forest valuation leading to a global common has led to various disputes nationally, regionally and internationally. The thesis aims to recognise the multiple functions of natural forests, how they are important to all species and that they should be seen as a 'global

²⁸ Schatzki T, 'Options, uncertainty and sunk costs: An empirical analysis of land use change', 46 (2003), *Journal of Environmental and Management*, 86-105, page 87. Also see Broadbent N E *et al*, 'Forest fragmentation and edge effects from deforestation and selective logging in the Brazilian Amazon', 141 (2008), *Biological Conservation*, 1745-17577, page 1745.

²⁹ World Bank Website access on <http://www.worldbank.org/en/topic/forests/overview>. Accessed on 11 November 2016.

³⁰ Ibid.

³¹ See note 10.

³² Whether this instrument should be based on command and control or market based approaches.

common'³³ rather than a national natural resource. Moreover, deforestation of natural forests is a matter of a 'common concern' in reducing climate change induced impacts.³⁴

In brief, international law is important as regards to environmental law, because the environment is not a national, but an international issue (ecosystems are interconnected, conservation of biological diversity, desertification, climate change etc.). International law is important, because it can affect the behaviour of states on how they use and protect natural forests once ratified and binding.³⁵ An international instrument usually provides a focal point which can develop clarity on what is essentially required for environmental protection.³⁶ Consequently, international instruments also seek cross-sector and transboundary cooperation in the protection of the environment and provide mechanisms which provide for the financial incentives.³⁷

Further, international environmental law addresses environmental concerns globally that impact on different States. International law is operational in its nature and lays down the framework for action to achieve environmental goals.³⁸ Due to the fact that it is not a national law regime (but assumed once a State ratifies an instrument), the impact of international environmental law is usually indirect, for example, it publicises a particular issue that is of a global nature, by laying down generally accepted standards and imposing political pressure on States to change their laws, behaviours and practices.³⁹ Moreover, it should also be noted that many countries passed environmental regulations after ratifying the Convention on Biological

³³ The 'Global Commons' refers to resource domains or areas that lie outside of the political reach of any one nation. See website on <http://www.unep.org/delc/GlobalCommons/tabid/54404/>. These global commons are ecosystems, biomes and processes that regulate the stability and resilience of the Earth system are the very foundation of our global economy and modern society. See website on <https://www.iucn.org/global-commons>. It must be said that the Conference of Parties (COP) of the CBD has failed to make the campaign of 'common heritage' and 'global commons' successful in the protection of forests. Accessed on 26 November 2016.

³⁴ Kirgis L F, 'Standing to challenge human endeavours that could change the climate', 84 (2) (1990), *The American Journal of International Law*, 525-530, page 527.

³⁵ Norman G and Trachatman P J, 'Customary International Law Game', 29 (3) (2005), *The American Journal of International Law*, 541-580, page 541.

³⁶ Kal Raustiala comments that international law is important because it provides us with depth, structure and cooperation amongst States. This he goes on to say captures the 'extent at which states are willing and commit themselves to a serious change of behaviour'. See Raustiala K, 'Form and Substance in International Agreements', 99 (3) (2005), *The American Journal of International Law*, 581-614, page 585.

³⁷ Ibid.

³⁸ Bell S, McGillivray D and Pedersen W O, *Environmental Law*, 8th Edition, (2013), Oxford University Press, Britain, 1-788, page 86.

³⁹ Ibid.

Diversity⁴⁰ (CBD). Spain passed a few and amended old legislations, South Africa has passed at least four environmental legislations after attending and ratifying the CBD.⁴¹

In addition, environmental instruments are created from broad agreements on the nature of the environmental concern.⁴² The convention can then be expanded and elaborated using protocols that are more specific and have obligations under further agreements that have been agreed by the Conference of Parties (COP).⁴³ The COP is a decision-making body comprising each Party that have ratified an international instrument and they meet during summits to produce documents, decisions and reports.⁴⁴

There are a few international instruments promulgated that are relevant and relate to forest protection. The thesis analyses whether these existing instruments are adequate and sufficient, and to what extent do they protect forests. Furthermore, the recognition of one forest function per instrument has not been helpful, for example the CBD recognises the function of natural forests as biodiversity habitat and the United Nations Framework Convention on Climate Change⁴⁵ (UNFCCC) as a means to mitigate climate change, this allows for fragmentation and overlap of environmental protection programmes. This means that a specific binding instrument for forest protection will need to transpose, elaborate and protect the multi-uses of forests (into one instrument) and require states to depart from deforestation activities in which they have participated in its absence.⁴⁶ The Intergovernmental Panel on Climate Change⁴⁷ (IPCC) recognises that reducing the rate of deforestation, and protecting forests will mitigate climate change and reduce desertification, but never took any further steps to protect forests.⁴⁸

⁴⁰ Convention on Biological Diversity (Rio de Janeiro, 5 June 1992) in force 29 December 1993. See website on <https://www.cbd.int/doc/legal/cbd-en.pdf>. Accessed on February 18, 2020.

⁴¹ The National Forests Act 30 of 1998, the National Environmental Management Act 107 of 1998, the National Environmental Management: Protected Areas Act 57 of 2003, the National Environmental Management: Biodiversity Act 10 of 2004 and the National Water Act 36 of 1998.

⁴² See note 38, page 87.

⁴³ Conference of Parties are states that are part of and have ratified an international instrument.

⁴⁴ Conference of the Parties (COP). See website <https://unfccc.int/process/bodies/supreme-bodies/conference-of-the-parties-cop>. Accessed on February 18, 2020.

⁴⁵ United Nations Framework Convention on Climate Change (May 1992, New York City, USA) in force March 1994. See website on <https://unfccc.int/resource/docs/convkp/conveng.pdf>. Accessed on February 18, 2020.

⁴⁶ See note 36, page 584.

⁴⁷ The IPCC is the UN body for assessing the science related to climate change. See website on <https://www.ipcc.ch/>. Accessed on 18 February 2020.

⁴⁸ United Nations, Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2007: Synthesis Report, Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (IPCC, 2007).

However, there are a few international environmental instruments which have been promulgated and are relevant, and relate to some extent to the issue of forest protection. These instruments include the World Heritage Sites⁴⁹, Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)⁵⁰; the United Nations Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa (UNCCD)⁵¹; the Kyoto Protocol⁵²; the United Nations Framework Convention on Climate Change (UNFCCC); the Convention on Biological Diversity (CBD); the International Tropical Timber Agreement (ITTA)⁵³ and the United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (REDD)⁵⁴ and the Paris Agreement (under the UNFCCC)⁵⁵.

There are also different agreements and declarations which have been signed, these include the Aichi Biodiversity Targets⁵⁶, the Paris Agreement, and the Johannesburg Declaration⁵⁷. The

⁴⁹ United Nations Educational, Scientific and Cultural Organisation, Convention Concerning the Protection of the World Cultural and Natural Heritage, Adopted by the General Conference at its Seventeenth Session Paris, 16 November 1972. See website on <https://whc.unesco.org/archive/convention-en.pdf>. Accessed on February 24, 2020.

⁵⁰ Convention on International Trade in Endangered Species of Wild Fauna and Flora (Washington DC, 3 March 1973) in force 1 July 1975, (CITES). See website on <https://www.cites.org/sites/default/files/eng/disc/CITES-Convention-EN.pdf>. Accessed on February 24, 2020.

⁵¹ United Nations Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa (Paris, 1994) in force 26 December 1996, (UNCCD). See website on http://catalogue.unccd.int/936_UNCCD_Convention_ENG.pdf. Accessed on February 24, 2020.

⁵² Kyoto Protocol to the UNFCCC, (Kyoto, 11 December 1997) in force 16 February 2005. Kyoto Protocol, to, the United Nations Framework Convention on Climate Change, (New York, 9 May 1992), (Kyoto, 11 December 1997). See website on <https://unfccc.int/resource/docs/convkp/kpeng.pdf>. Accessed on February 24, 2020.

⁵³ International Tropical Timber Agreement (ITTA) (Geneva, 27 January 2006). See website on https://treaties.un.org/doc/Treaties/2006/02/20060215%2004-26%20PM/Ch_XIX_46p.pdf. Accessed on February 24, 2020.

⁵⁴ The United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (UNREDD, 2005). See website <https://www.un-redd.org/>. Accessed on February 24, 2020.

⁵⁵ Paris Agreement was agreed in 2015 in France under the UNFCCC (United Nations Framework Convention on Climate Change). See website http://unfccc.int/paris_agreement/items/9485.php. Accessed on 20 November 2016.

⁵⁶ Tottensor P D *et al*, 'A mid-term analysis of progress toward international biodiversity targets', 346 (6206), *Science*, 241-244, page 242. Secretariat of the Convention on Biological Diversity (SCBD), 2006. Global Biodiversity Outlook 2. Montreal, 81 +vii pages. See website <https://www.cbd.int/doc/gbo/gbo2/cbd-gbo2-en.pdf>. See website https://www.iucn.org/sites/dev/files/import/downloads/iucn_policy_brief_aichi_targets_and_sdgs_jan.pdf. <https://www.cbd.int/doc/strategic-plan/2011-2020/Aichi-Targets-EN.pdf>. Accessed on 19 November 2016.

⁵⁷ Johannesburg Declaration on Sustainable Development, World Summit on Sustainable Development in Johannesburg, South Africa from 2-4 September 2002. See website on https://www.un.org/esa/sustdev/documents/WSSD_POI_PD/English/POI_PD.htm. Accessed February 18, 2020.

Aichi Targets under Target 5 established by the CBD explains that its strategic plan is to reduce the loss of natural habitats (forests are natural habitats for many different species) and conserving approximately 17 per cent of terrestrial areas through protected areas. In addition, the Paris Agreement looks at an effective way to mitigate climate change through the sequestration of carbon emissions from the atmosphere; thus, forests will play a huge role since they sequester and store carbon, as has been pointed out above. The Agreement seeks to conserve forests for their function as carbon storages. In addition, the Johannesburg Declaration⁵⁸ focused mainly on the sustainable use of forest products and services.⁵⁹ The Declaration stated that forests must be protected and deforestation must be reduced for the inheritance of future generations.

However, all of these instruments have their main focus on other environmental issues, but not specifically on forest protection. Forest protection is seen as a side issue or a means to achieve other environmental goals - such as - mitigation of climate change, reducing desertification or drought and conservation of biodiversity.⁶⁰

Moreover, the UNFCCC has minor demands on its obligations, it demands States to merely review and report incidents without giving a framework on forest protection or how deforestation can be reduced. The Kyoto Protocol signed under the UNFCCC has also imposed moderate targets on developed countries to reduce carbon emissions.⁶¹ A scholarly opinion⁶² also points out that REDD (also signed under the UNFCCC) has failed on its mechanisms meant to reduce deforestation, though it brought light in forest ecosystems playing a huge part in climate change mitigation. Moreover, it is also important to note the gradual development and advances of international environmental law. Clearly, international environmental law has its failures and successes depending on the issues we currently face.

⁵⁸ See United Nations website <http://www.un-documents.net/jburgdec.htm> and also see Goal 15 of the Sustainable Development Goals <https://sustainabledevelopment.un.org/sdg15>, Goal 13 on Mitigation of Climate Change <https://sustainabledevelopment.un.org/sdg13>. Accessed on the 17 of November 2016.

⁵⁹ FAO, Latin American and Caribbean Forestry Commission, Buenos Aires, Argentina, 7 - 11 October, 2002 follow-up to the UNFF and the Johannesburg Summit. See website on <http://www.fao.org/3/AC494E08.htm>. Accessed on February 18, 2020.

⁶⁰ See note 36, page 585.

⁶¹ See note 20, page 861.

⁶² See Harro van Asselt *et al*, 'Governance for REDD+, forest management and biodiversity: Existing approaches and future options', IUFRO World Series 2012 Vol.31 pp.115-137. Harro van Asselt is a Senior Research Fellow in Stockholm Environmental Institute's Oxford Centre and professor of climate law and policy at the University of Eastern Finland. See website <https://www.sei-international.org/staff?staffid=315>. Accessed 20 November 2016.

The notable proposed programmes in the Kyoto Protocol are the Land Use, Land-Use Change and Forestry⁶³ (LULUCF) and the Clean Development Mechanism⁶⁴ (CDM) – all of these focused narrowly on the conservation and protection of forest biodiversity, this is a broad approach which focuses specifically on forest protection (the definition as will be seen in the next Chapters is broad, that at some point the subject becomes lost in the context of the word).⁶⁵ Even the rules agreed on forest carbon sinks in the Kyoto Protocol are insufficient to safeguard biological diversity concerns, which further frustrates the goals of the CBD.⁶⁶ In brief, these instruments have not expressed binding objectives for forest protection and they have never provided the financial incentives to lure developing countries to make a binding instrument and sit on the table to negotiate a forest instrument.⁶⁷

Developing countries will continue to cut down forests until there is a direct investment into their manufacturing and industry, agriculture and infrastructure sectors to help their struggling economies. With developed countries cutting much of the trees for timber, paper, pulp and furniture. This has now extended to beef, soya and palm oil. They also have the multinational companies that are involved in illegal logging in the global South. Countries which own forests will only cease deforestation when there is another profitable way to sustain their livelihoods, it is a matter of alternatively providing the right incentives that capture the essence of sustainable development. An international instrument could also include programmes that

⁶³ For a deeper understanding of the LULUCF see UNFCCC website and Kyoto website below. These programs will be discussed further and in greater detail later in this thesis. See websites https://unfccc.int/land_use_and_climate_change/lulucf/items/1084.php https://unfccc.int/land_use_and_climate_change/lulucf/items/4129.php https://unfccc.int/land_use_and_climate_change/lulucf/items/4127.php. Accessed on 17 November 2016.

⁶⁴ For the UNFCCC on CDM website visit <http://cdm.unfccc.int/about/index.html>. Accessed on the 17 November 2016.

⁶⁵ Harro van Asselt, 'Integrating Biodiversity in the Climate Regime's Forest Rules: Options and Tradeoffs in Greening REDD Design', 20 (2) (2011), *Review of European Community & International Environmental Law*, 139-149, page 139. Also see Aldy E J and Stavins N R (ed), 'Introduction', in *Post-Kyoto International Climate Policy, Implementing Architectures for Agreement, Research from the Harvard Project on International Climate Agreement*, Cambridge Press Pass, United Kingdom, (2010), 1-28, page 4.

⁶⁶ As noted by Pontecorvo M C, 'Interdependence between Global Environmental Regimes: The Kyoto Protocol on Climate Change and Forest Protection', 59 (3) (1999), *Zeitschrift für ausländisches öffentliches Recht und Völkerrecht*, 709, at 731. See also Rousseaux S, 'Carbon Sinks in the Kyoto Protocol's Clean Development Mechanism: An Obstacle to the Implementation of the Convention on Biological Diversity?', 7 (1) (2005), *Environmental Law Review*, page 1. See also Sagemüller I, 'Forest Sinks under the United Nations Framework Convention on Climate Change and the Kyoto Protocol: Opportunity or Risk for Biodiversity?', 31 (2) (2006), *Columbia Journal of Environmental Law*, page 189.

⁶⁷ See note 4, page 231.

could fund for the global public goods provided by forests (an idea which stems from REDD initiatives).⁶⁸

The ITTA mainly focuses on trees and wood as commodities⁶⁹ and does not recognise the ecological and social functions of forests. It has no compliance, nor monitoring mechanism put in place, thus the ITTA has no authority to conduct a review of national forest laws of any State independently as it focuses more on commercial trading of timber and wood with more powers centered in the ITTO.⁷⁰

Furthermore, environmental conventions and agreements usually require States to change or enact new national laws in relation to their obligations. States refuse to change their environmental national laws to due to sovereignty reasons which does not suit the obligations promulgated in these instruments, thus resulting in many States refusing to ratify the instruments deeming it non-binding, since it did not get ratified by the adequate number of Parties to make it binding. Recently, Brazil has refused any action or international initiatives to reduce deforestation and forest fires in the Amazon, stating that it was its own natural resource and only Brazil count account for the fires.

Prospectively, the reasons can be centered on social and economical development. This has resulted in States not committing to obligations and also not attending to United Nations Environment Programmes and Conferences. Nevertheless, this is not to say that everything which has been done to this point is wrong. There have been praiseworthy initiatives, one good example is the efforts of the United Nations Forum on Forests⁷¹ (UNFF). For instance, the UNFF concluded a Non-Legally Binding forest instrument at its 7th session in 2007.⁷² However, this instrument has been deemed “soft law” since many States refused to ratify.⁷³

⁶⁸ See note 36 and 38.

⁶⁹ See Vanderzwag D and Mackinlay D, ‘Towards a global forest convention: Getting out of the Woods and barking up the right tree’, in *Global Forest and International Law Canadian Council of International Law*, London: Kluwer Law International (1996), pages 1-39.

⁷⁰ Dimitrov S R, ‘Knowledge, Power, and Interests in Environmental Regime Formation’, 47 (2003), *International Studies Quarterly*, 123-150, page 135.

⁷¹ See the website of the UNFF here <http://www.un.org/esa/forests/>. Accessed on 20 November 2016.

⁷² Non-legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of all Types of Forests, Rio de Janeiro, 3-14 June 1992. Non-legally Binding Instrument on All Types of Forests (UNGA Resolution A/RES/62/98, 17 December 2007).

⁷³ Hovell D, ‘Due process in the United Nations’, 110 (1) (2016), *The American Journal of International Law*, 1-48, page 48. Also see Cullet P and Kameri-Mbote P A, ‘Joint implementation and forestry projects: Conceptual and operational fallacies’, 74 (2) (1998), *International Affairs (Royal Institute of International Affairs 1944-)*, 393-408, page 408.

Nonetheless, forest governance can be strengthened to add arsenal to the global goal of forest protection as an alternative.

3. Research Question

This thesis is important because the world continues to lose forests through degradation and deforestation, as mentioned before. Importantly, approximately one billion people depend on forest products and services. However, deforestation is a major problem and it should be reduced immediately.⁷⁴ Deforestation will increase carbon emissions, desertification, droughts and poverty, reduce water regulation, and result in poor soil quality.

The thesis will focus on this research question: **Is there a need for a specific legally binding international instrument to protect forests?**

The thesis will show that the lack of an instrument has hampered global efforts to reduce deforestation, mitigate and adapt climate change and conserve biodiversity. This is a valid question since there are many instruments that do mention and are relevant or relate to forest protection. Natural forests are an important natural resource to all species on the planet, thus degradation and deforestation should be reduced. Is it enough to give lee-way to a natural resource that is fundamental to all species' survival, and its continued loss in greater magnitude? Further, a question should be raised whether these instruments are sufficient and adequate? If so or not what are the burdens and issues that have hampered forest protection. Moreover, what can be done further from an international, regional and national perspective to protect forests?

The thesis will also try to answer subsidiary questions linked to the problem of forest protection. In addition, the thesis will undertake a comparative analysis of the forest legal systems of Spain, South Africa, and Australia. With these three countries and their regions, have their efforts been sufficient and adequate in protecting forests? The reason why chosen is that these countries are in different continents and it will give the thesis a broader spectrum of how the forest law regime has developed without an instrument, and that is the value of this comparative analysis. Consequently, these countries have been involved in the integration of a range of policies in forest protection internationally and their respective regions. Historically,

⁷⁴ Fishman A and Obidzinski K, 'European Union Timber Regulation: Is It Legal?', 23 (2) (2014), *Review of European Community & International Environmental Law*, 258-274, page 258.

they have been able to implement and promulgate national policies that can improve forest protection.

4. Research Objectives

The thesis tries to answer if forests have or are being protected sufficiently and adequately by the already promulgated international instruments. Moreover, is it true that a new instrument would make the forest governance regime stronger and more effective than it has been without an instrument? In addition, this thesis will analyse what national laws have been enacted and promoted by Spain, South Africa and Australia to protect their forests. It is difficult from a legal perspective to tell States how to use their resources, but through strengthening use and decision-making, law plays a pivotal role in reducing exploitation. The thesis will also investigate the need for a binding instrument which has a strong framework, easy to implement, which will add value to the information already given in these instruments; mainly the UNCCD, the CBD, the CITES, the ITTA and the UNFCCC, and also minimise the activities that promote deforestation. Furthermore, the instrument should be able to provide stringent sanctions against deforestation and forest degradation. These sanctions can be either administrative, criminal or civil.

The thesis will also investigate whether a new forest instrument would offer flexibility by recognising the instruments already in the international arena and adapting programmes in the UNCCD, the CBD, the CITES and the UNFCCC. It will also show some of the issues that have hampered and burdened the process of States agreeing to a forest instrument and some methods to improve participation in forest protection. This instrument could be agreed upon by parties who are not diplomatically recognised (usually incapable of signing treaties, such as private forest owners) and should rarely require ratification and any legislative action by the States, this can increase political willingness and integrate forest owners at ground level.⁷⁵

Furthermore, there is a need to show or recognise that deforestation is a cross-sectoral issue as most of the agents of deforestation are from various sectors such as agriculture, urban housing, and transport, industrial and manufacturing sectors. If these agents of deforestation are recognised, integration, coordination and cooperation ways can be put forward to reduce

⁷⁵ This would mean that this instrument would take effect fast and some of the problems of property rights will be debated and nullified during the course of making the instrument. See also Lipson C, 'Why are some international agreements informal?', 45 (1991), *International Organisation*, page 495. Also see Shaffer G and Grinsburg T, 'The empirical turn in international legal scholarship', 106 (1) (2012), *The American Journal of International Law*, 1-46, page 45.

deforestation. In addition, the aim for this new instrument could be to ensure coherence, cross-sectoral cooperation, integrate policies, limit fragmentation and overlaps, cover all gaps and strengthen implementation.⁷⁶ Moreover, it will also investigate the reasons why until now the States have failed to agree on a binding instrument and what could be the solutions by looking at decisions taken by the Conference of Parties (COPs) of different environmental instruments. The thesis will also give recommendations on how an effective and cooperative instrument could impact on forest governance.

In addition, open access conditions and poorly defined property rights are known to be the important factors that drive agricultural land expansion and deforestation in developing countries.⁷⁷ It will provide ways through its recommendation on how countries can better protect their forests through use of heritage sites, buffer zones and protected areas. Importantly, issues of spatial planning and management are of central and critical concern in forest protection.⁷⁸ The thesis will discuss the issue of land-use management and spatial planning on trying to zone out the correct, most useful land for agriculture and urban development without clearing forest land areas.

One of the cornerstone concepts used to protect and manage forests is the sustainable forest management (SFM).⁷⁹ The concept of SFM gives guidance on how to manage and protect forests, and provide services for today's generation without reducing the enjoyment of the future generations.⁸⁰ However, SFM concept programmes and definition have not been universally applied, therefore providing challenges on how it can be used effectively. This principle has created a huge impression that forests are protected whilst they are not, by governments merely using the concept on paper. It has also taken the power to disarm broader

⁷⁶ Vogler J, 'The European Contribution to Global Environmental Governance', 81 (4) (2005), *International Affairs (Royal Institute of International Affairs 1944-)*, 835-850, page 836.

⁷⁷ Barbier B E, 'The economics of land conversion, open access and biodiversity loss', in Kontoleon A, Pascual U and Swanson T (eds), *Biodiversity Economics*, Cambridge University Press, Britain, (2007), 59-92, page 60.

⁷⁸ Miranda J and Murray T A, 'Spatial Environmental Concerns', in Weintraub A, Romero C, Bjorndal T, Epstein R (eds), *Handbook of operations research in national resources*, International Series in operations research and management science advancing the State-Of-The-Art. Springer Science, New York, USA, (2007), 419-429, page 428.

⁷⁹ United Nations Conference on Environment and Development, 1992. Agenda 21, Rio Declaration, Forest Principles, New York; United States of America, United Nations. Sustainable forest Management is the production of forest goods and services for the future and present generation. Also see ITTO, 2006, Status of tropical forest management. ITTO Technical Series No. 24, Yokohama, Japan, it was stated as one of the main principles of forest protection and management. Also see MacDicken G K *et al*, 'Global progress toward sustainable development', 35 (2015), *Forest Ecology and Management*, 47-56, pages 47-48. For definition see the FAO Natural Forest Management - Sustainable Forest Management. See website <http://www.fao.org/forestry/sfm/en/>. Accessed on February 20, 2020.

⁸⁰ See note 2, page 48.

concerns over forest deforestation and degradation.⁸¹ The thesis will seek to clarify the SFM concept as it is one of the cornerstone concepts that have been used ineffectively in the international arena. A scholarly opinion⁸² points out that for the sake of progress for policies and legislations, this principle will need to be clarified before any binding instrument is promulgated.⁸³

Similarly, the thesis will discuss methods and incentives that are being currently used to reduce deforestation. The well-known ones are the ‘command and control’ and the ‘market-based’ approaches. The market based approaches create an economic incentive for the actors who destroy forests to change their behaviour and practices.⁸⁴ It also leaves space for private actors to innovate and make important decisions on the deployment of technologies and techniques.⁸⁵ Economic incentives allow for the use of new technologies and process designs, efficiency in the use of forest raw materials, and also continue to invite environmental entrepreneurship.⁸⁶ Moreover, administrative controls and selective use of custodial criminal sanctions for degradation of forest lands may also play a huge part in deterring errant firms, those are vested in the command and control approaches.

However, corruption⁸⁷ is one of the major causes of environmental degradation and has hampered environmental efforts put forward for forest protection. There is a corrupt relationship between citizens and the elected officials, this relationship results in policy distortions.⁸⁸ The huge rents usually paid to governing bodies are used to evade environmental regulations. Further, collusive corruption explains corruption in governments where the bribes result in the dilution of the intended effects of policy.⁸⁹ Despite the significance of how

⁸¹ Cock R A, ‘Tropical forests in the global states system’, 8 (2) (2008), *International Affairs (Royal Institute of International Affairs 1944-)*, 315-333, page 320.

⁸² See note 2, page 48.

⁸³ CBD (Secretariat of the Convention on Biological Diversity). 2009. Sustainable forest management, biodiversity and livelihoods: a good practice guide, Montreal 47 +iii pages. Also see note 74, page 55. United Nations, Food and Agriculture Organisation. Global Forest Resources Assessment 2015 (FRA). See website <http://www.fao.org/resources/infographics/infographics-details/en/c/325836/>. Accessed on 22 November 2016.

⁸⁴ See note 78.

⁸⁵ Ibid.

⁸⁶ Ibid.

⁸⁷ A corrupt practice is the offering, giving, receiving or soliciting, directly or indirectly, anything of value to influence improperly the actions of another party. See website <http://www.worldbank.org/en/about/unit/integrity-vice-presidency/what-is-fraud-and-corruption>. Accessed on 17 November 2016.

⁸⁸ Wilson J and Damania R, ‘Corruption, political competition and environmental policy’, 49 (2005), *Journal of Environmental Economics and Management*, 516-535, page 517.

⁸⁹ Ibid.

corruption tampers with the economic and environmental policies, the environmental policy literature has gone forth without investigating the implications of corruption. Corruption and other issues have hampered effective forest governance, and will be dealt with further in this thesis.

Nevertheless, the issues concerning deforestation are complicated and complex as will be shown in Chapter 6. There is no consensus on what should constitute a forest instrument and what an appropriate solution is. Furthermore, there is no well researched and exact literature on how countries can agree on obligations in a forest instrument and ratify to make it binding. Thus, the solutions to deforestation seem to be given, but no further steps are taken to state what kind of balanced obligations States would want to ratify and reduce deforestation.

5. Structure of the thesis

Chapter 1 is an introduction which introduces the factual background, research importance and question. Chapter 2 will look at the important functions of natural forests, Chapter 3 and 4 will look at issues threatening forests and the effects of deforestation. It is important in this thesis to first look at why forests need to be protected. It is these functions and effects of deforestation that have earned forests a special mention in international instruments. Though this thesis falls in the legal sphere, there is a need to look at statistics and the science behind the functions performed by natural forests to give them their appropriate valuation. It is of value to look at the quantitative numbers that back forest protection. Chapter 5 is technical as it introduces the hard and bold international environmental instruments and COP summit decisions. It is important in this thesis that this Chapter critically analyse the international environmental instruments, whether they are sufficient and adequate to protect forests. A few recommendations are given at the end of this Chapter on how to strengthen forest protection. Chapter 6 follows by explaining why these instruments have failed or succeeded. Importantly, the Chapter introduces the burdens that have hampered the development of an instrument and why efforts seem continuously to fail.

Furthermore, Chapter 7 is a comparative analysis of the Spanish, Australian and South African forest legal systems (also environmental national laws). The reason for this Chapter is – faced with these challenges in the international arena and the issue pertaining lack of a specific international binding instrument, what have States and regional blocks been doing to protect their forests. Chapter 8 introduces environmental principles that can strengthen, be fostered and transposed by an instrument that is deemed necessary for forest protection. The Chapter is

also important since it explains the importance and benefits of international environmental instruments. Chapter 9 looks at the body of forest governance, issues affecting and how it can be strengthened. Although not the best of alternatives, strengthening forest governance should be encouraged as an option at a national, regional and international level. It is important to look at this body as it has several gaps and misconceptions that need to be analysed and investigated. For any law to work properly, there is a need to lay a proper foundation on which it will rest. It is important that this foundation allows the law to manifest itself, develop and interpreted clearly for the foreseeable future. The thesis in Chapter 10 ends with the conclusion, giving an overview and a way forward.

6. Methodology

It is important for the author to describe the style of research methodology as well as the sources of information used in writing this thesis. Sources of information are often classified as primary, secondary or tertiary. These classifications are based on the originality of the material and its proximity of the source and origin.⁹⁰ This informs the reader as to whether the author is reporting information that is first hand or is conveying the experiences and opinions of others which can be considered second hand.⁹¹

In writing a thesis, sources of information are important as they shape the literature and arguments of the writer or reader being reviewed. They also highlight past, present or future opinions that have been will be shared on a topic. This allows the writer to shape his own argument, recommendations and conclusions on the thesis topic. Furthermore, it informs a reader that research and critical analysis has been undertaken throughout the writing of the thesis. Notably, sources of information show the methodology that has been used to write, analyse or investigate the thesis topic.

The research methodology applied in this thesis is qualitative, primarily in the form of desktop research. The literature that will be analysed will come from primary, secondary and tertiary sources of information which are aligned with the thesis topic, as it is in the legal science field. Below is a broader description of the three categories of the sources of information

⁹⁰ These classifications are based on the degree of relatedness the author has to the information relayed, i.e. are they reporting on what they are experiencing first-hand or experienced by another.

⁹¹ Whether the author is merely relaying information or analysing what has happened so as to better explain to the reader what the information or event relates to.

mentioned above and examples that have been employed during the writing of this thesis. This type of research methodology has been employed to answer the research question. It also details the type of materials that have been analysed by the researcher to write the thesis.

The thesis will analyse such as environmental textbooks and academic journals in this field. It will analyse international environmental treaties, protocols and agreements already promulgated for the international community. Further, the thesis will analyse national legislations that are used to protect forests in Spain (bearing in mind that it is akin to a federal country so there is much legislation at the regional level), South Africa and Australia. It will also look at judicial cases (if any and applicable) that have given much needed judiciary jurisprudence in forest law and managed to change national laws and practices in these three countries. It will also look at commentaries and other ‘grey’ literatures.

6.1 Primary Sources

Primary sources are items of information that are directly associated with their author or user at the time period in which they originated or were created. It reflects the opinion and perspective of someone who directly experienced what they are describing. Hence, these sources tend to be first-hand accounts, evidence or records of events as and when they occur free from any interpretation, analysis or commentary by the author, so as to not alter the meaning. This information, depicted for the first time by the author, in terms of research often relates to original resources to which other researchers base their works/findings (the product of quantitative research), and it becomes their “base” reference, hence primary source. Primary sources often report on new discoveries, and/or share fresh ideas and/or provide information on a subject matter. These sources provide information in its purest form, as they relay the unedited, unfiltered, unaltered or interpreted information.

Primary sources of law tend to be slightly different as they comprise of laws, decisions, orders and/or regulations issued by government entities or officials, examples include court judgements, legislature or executive authority and State Constitutions. In appellate advocacy, the primary law includes any relevant and “new” court or tribunal rules, statutes, and case law. Primary legal sources are the actual applicable law whether developed by courts or institutions.

The primary sources of information used throughout this thesis includes national policy documents (Green and White Papers), legislation as well as international instruments such as the CBD, UNFCCC, UNCCD and the CITES. These primary sources will be analysed in conjunction with their COPs decisions that were made during conferences or meetings discussing matters relating to this thesis. These COP decisions are also recognised as primary sources as they are first hand accounts of the information without any interpretation from the author. Below is a description of different primary sources of law used in this thesis, this list is not exhaustive of all materials.

6.1.1 Constitutions

Constitutions confer powers and responsibilities to governments as well as define the organisational structures to be followed by the particular state's government. Furthermore, they serve to protect individuals (and by extension all living things) within the State, as they confer basic rights that cannot be limited or violated without repercussions. This can be seen in cases where the courts can strike down unconstitutional laws as they violate the basic right to life, dignity, property or a safe and clean environment as stated in the Constitution. As a blueprint for the government, any law deemed unconstitutional is immediately struck down or must be altered so as to comply with the principles contained in the Constitution.

The thesis will look at the Constitution of the Kingdom of Spain, the Republic of South Africa and Australia respectively, evaluating how these Constitutions set out environmental rights. Both of these Constitutions recognise the use of international law domestically, so long as this does not contradict and upholds the values contained in their Constitutions. Thus, the analysis of a national Constitution makes it possible to see if forest protection is viable. It further makes it possible to use public policies that will contribute positively to forest protection. Constitutions grant authority to create or develop national legislation which will be used to protect the environment, they also confer certain inalienable rights, that need protection, to the public. Furthermore, they detail the duties and responsibilities of municipal, provincial and national governments. These "guidelines" set in national Constitutions help further the protection of natural resources within States.

6.1.2 Statutes and Case law

Statutes are enacted by national and local legislatures, made up of elected officials (dependant on the government structures) who are entrusted to create laws that govern citizens. When there is a dispute on the applicability of a statute, courts reach a ruling through the application of statutes to the presented facts, when necessary.

Sovereign States are free to make their own laws regarding the protection of natural forests within their territories. The thesis will analyse national statutes that have been set aside for environment protection and specifically forest protection. These statutes are fashioned from principles that are transposed from international instruments and customary laws. Statutes are the instruments that set national objectives and how these objectives can be achieved. In environmental legislations, they set the objectives and programmes for environmental conservation, the governance and institutional structures, the department heads and how they can be chosen, and the penalties for environmental damage. These statutes are important in attempting to answer the research question of the thesis.

6.1.3 Binding precedent

This is a different interpretation of a law in similar circumstances as the case being heard, made by a higher court or an appellate division. Court cases which set binding precedent are treated as a primary sources in the thesis, as they engage in the creation of a new law.

These precedents are often followed by lower courts in the State which makes them important sources of law. They tend to be set by Supreme Court judges over a court case, thus creating binding authority over the lower courts. Certain court precedent are not only nationally binding but becomes well regarded and studied in various other States, especially in adjudicating matters of environmental protection. The thesis will analyse such cases where courts and judges have decided on matters of forest and environmental protection. Therefore, precedents are helpful in understanding where the courts stand on environmental laws. The courts play a part in the interpretation and adjudication of matters which concern the environment. They have also become an arena for environmental advocacy, if and when government refuses to abide by legislation as citizens can demand adherence through the courts.

6.1.4 Treatment of other court rulings

The same issue may have been tried in other courts and these decisions will often be reviewed in similar decisions, as they are helpful. They may be from the same or different jurisdictions and even foreign jurisdictions, although decisions these are less persuasive as they are not authoritative. The thesis will also analyse certain national court cases that have been well received by other courts in different countries. There are examples of court cases in Spain, South Africa and Australia that can impact on a region or be used as an extract by other courts in another state. This recognition of such court decisions is important as it has an impact on recognising principles or explaining certain concepts that are new in certain national jurisdictions.

6.2 Secondary Sources

Secondary sources of information are often commentary, criticisms or explanations on primary sources, as they interpret or analyse information gathered from primary sources. These sources are written with the benefit of hind-sight as they interpret and evaluate primary sources. They are not considered as first-hand evidence, as they comment and discuss evidence - they include recent journals or articles linked to the topic and textbooks. Secondary legal sources may restate the law, but they tend to discuss, analyse, describe, explain or critique.

Secondary sources include biographies, research articles (for physical and social sciences, this refers to articles that don't include the authors' original research), monographs (other than autobiographies and memoirs), commentaries and criticisms. They consist of sources which explain, criticize, discuss/help locate law, such as digests, law reviews, journals, legal treatises, legal manuals and guides. Furthermore, secondary sources are mainly used in three different circumstances – firstly, to serve as a form of legal education; secondly, to direct one to primary sources of law; and lastly they serve as persuasive authority in applying the law. Below is a brief description of the different secondary sources of law, as used in this thesis.

6.2.1 Court Interpretation

Legislatures cannot be expected to draft extensive laws, therefore laws are written broadly so as to be applicable in a variety of situations. It is not always clear to which situations the statutes primarily apply and what was intended by the writer/s of the primary sources. In these

circumstances there is a need for courts to engage in statutory interpretation to ascertain the legislative intent. In this thesis, court interpretations from different national jurisdictions will be used to try answer the research.

6.2.2 Treaties

Treaties are international laws which are comprehensive on a particular area of law, further they provide references to case law and statutes. In its main form, international law is a primary source and binding on the states. However, international law can also be presented as soft law. Furthermore, international law can be directed at international organizations, individuals and other voluntary actors. This type of scenario presents international law as a secondary source of law. Since there is no international instrument for forest protection, it is important to look at soft laws that are being used and the public policy that give effect to that matter positively.

6.2.3 Legal periodicals/journals

Legal articles often discuss narrow areas of law and legal issues. These articles tend to be theoretical on cutting-edge legal issues in academic journals, while those in practitioner-oriented journals tend to be practical. Journals are important sources of information in legal science. Journals are primarily published by universities, research hubs and institutions and are written by experts. These journals are important as they interpret laws and policies while providing the authors' opinions or recommendations on the topic. In short, the thesis will focus on international environmental instruments, however the interpretation of these instruments are contained in journals. Thus, it is important to analyse and read through most of these journals that can help the reader and writer understand the situation with reference to forest protection.

6.2.4 Loose-leaf Services

Loose-leaf services bring together the law on a particular topic, they gather in one place the code, administrative decisions, citations, findings, commentaries, forms, etc. In environmental law, loose leaf services are important since they contain analysis on administrative decisions and policies that have been taken by a particular State. Since many experts are unable to travel to these states, this kind of source of information has become important. It is usually a

secondary source since it is not first-hand account and barely an analysis of several issues. This source of information will be used in this thesis.

6.3 Tertiary Sources

Tertiary sources of information identify and locate primary and secondary sources, they are often reference resources. These sources summarise or condense materials and usually refer the reader to the primary and/or secondary source. These include bibliographies, indexes, abstracts, encyclopaedias, and other reference resources. Tertiary sources rarely contain original information, ideas or material and rather offer a broad perspective and overview of a topic without any critique or analysis. Tertiary sources are often not credited to a particular author.

All three sources of information are not mutually exclusive, one resource often contains all sources, based on what is being discussed and how it is described. For instance, a court decision could create a new law while simultaneously analysing statute and referencing other sources. Distinctions between primary, secondary, and tertiary sources are about relating the information to the context in which it was created. Tertiary sources in this thesis will include websites such as the United Nations' website platform. These websites provide explanations of certain principles and concepts, as well as information on important case studies that have been used in this thesis. Newspapers and opinions are also important sources of tertiary information. Newspapers are up to date with current issues affecting forests. They also report on important policy and stances/statements taken by governments as well as presidents in different States. Thus, newspapers are usually important since they report on the news daily and are likely to be read and shared by many people.

Chapter 2: Functions of Natural Forests

1. Introduction

Ecosystems are interdependent; they rely on one another for the different services which they provide. Forest ecosystems play various functions and services, which can be socio-economic and ecological (functions are associated with forests' natural processes and forest services are associated with their action of helping the environment). Some of the well-known functions and services which natural forests provide are biodiversity habitats, sequestration of carbon dioxide, conservation and protection of water and soil, religious and cultural functions and also wood energy.

Forests⁹² provide products that are used by nearly 1.6 billion people across the world to bolster their livelihoods. Many poor communities who live in or near forests use wood for fuel, and as a building material, medicine from tree barks, leaves or roots and also gather fruits.⁹³ In addition, natural forests' main protective functions include protection against mudslides, rock falls, floods, debris flow and soil erosion.⁹⁴

2. Factual background

European forests play a critical role in nature protection, timber production, water conservation, erosion control and recreation.⁹⁵ The United Nations Food and Agricultural Organisation (FAO) in 2014 stated that the forest industry contributed more than €410 billion to national incomes, at the time equal to one per cent global GDP.⁹⁶ Furthermore, the formal sector is said

⁹² Forest defined by the FAO as - and spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of more than 10 percent, or trees able to reach these thresholds in situ. It does not include land that is predominantly under agricultural or urban land use. See website <http://www.fao.org/3/ap862e/ap862e00.pdf>, page 3. Accessed 16 December 2016. The CBD has defined Forests as - in this document, a forest is a land area of more than 0.5 ha, with a tree canopy cover of more than 10 per cent, which is not primarily under agricultural or other specific non-forest land use. See website <https://www.cbd.int/forest/definitions.shtml>. Accessed on 16 December 2016.

⁹³ Millennium Ecosystem Assessment. *Ecosystems and Human Well-Being: Synthesis*. Island Press, Washington DC, (2005), 1-137, page 40. See website on <http://www.millenniumassessment.org/documents/document.356.aspx.pdf>. Accessed 20 February 2017.

⁹⁴ Ibid.

⁹⁵ Spiecker H, 'Silvicultural management in maintaining biodiversity and resistance of forests in Europe—temperate zone', 67 (2003), *Journal of Environmental Management*, 55–65, page 55.

⁹⁶ Food and Agriculture Organization of the United Nations (2014), *State of the World's Forests: Enhancing the socio-economic benefits from forests 2014*, Rome, and (FAO), 1-133, page (xiii). See website on <http://www.fao.org/3/a-i3710e.pdf>. Accessed 12 February 2017.

to employ more than 14 million people, and the informal sector employs more than 40 million people.⁹⁷ It is also estimated that approximately 850 million people collect wood for energy.⁹⁸

Socio-economic benefits are usually extracted from forest goods and services provided. In 2014, the FAO estimated that more than a billion people used wood for energy, as building material, gathered fruits and traditional medicines in forests. In addition, the research found that there are millions of people formally and informally employed as forest rangers and managers even though it was thought to be in the hundreds. These people earned their incomes through forest conservation and protection programmes which their States had started around natural forests, parks and protected areas.⁹⁹

Furthermore, in rural communities in many developing countries wood energy is used for cooking, heating and boiling water. Likewise, about 764 million people in the world use wood energy for heating their water.¹⁰⁰ In Latin America and the Caribbean, about 13 per cent of the population uses wood energy, further in Africa about 27 per cent, and in Asia and Oceania about 5 per cent use wood fuel also.¹⁰¹ Similarly, an estimated 90 million people use wood energy for heating in Europe and North America, now with power generation the number of people keeps on increasing.¹⁰² Identically, many communities without electricity use wood energy to sterilise water by boiling and also cooking. The FAO has stated that approximately 2.4 billion people in mainly developing countries use wood energy for cooking, which is about 40 per cent of the world's population.¹⁰³

In addition, forest products such as timber, bamboo and reeds are used as building materials. These materials are used for the construction of huts in many communities in Africa and South America. It is estimated that about 1.2 billion people in Asia, the Caribbean, Oceania and Africa use these forest products to construct their houses.¹⁰⁴

⁹⁷ Ibid.

⁹⁸ Ochuodho O T *et al*, 'Regional economic impacts of climate change and adaptation in Canadian forests: A CGE modelling analyses, 25 (2012), *Forest Policy and Economics*, 100–112, page 100.

⁹⁹ See note 4.

¹⁰⁰ See note 5.

¹⁰¹ Ibid.

¹⁰² Ibid.

¹⁰³ Sooyeon Laura Jin *et al*, 'Sustainable woodfuel for food security. A smart choice: Green, renewable and affordable', Food And Agriculture Organization of the United Nations, Rome, (2017), page 7. See website <http://www.fao.org/3/a-i7917e.pdf>. Accessed on 16 January 2021.

¹⁰⁴ Ibid.

Equally important, forest ecosystems contain about 638 giga-tons of stored carbon and can potentially absorb more than 10 per cent if protected effectively.¹⁰⁵ This function of forests is of global interest and importance since the sequestration of carbon in the atmosphere mitigates climate change.¹⁰⁶ Trees absorb carbon dioxide through photosynthesis, and then store this in the soil, stems, leaves, roots and barks.¹⁰⁷ Thus, forests contain approximately 80 per cent of the carbon stored, and about 40 per cent of the carbon is stored and fixed in the soil.¹⁰⁸ Thus, natural forests are now linked to the global challenges relating to socio-economic development, environmental stability, poverty eradication, combating desertification and land degradation, food security and agriculture, energy, water, conservation of biodiversity, mitigation of and adaptation to climate change, watershed protection and disaster hazard reduction.¹⁰⁹

3. Socio-economic Functions

Forests provide many socio-economic benefits including bush-meat (poverty alleviation functions), recreation functions, religious and cultural functions, wood energy and protective services. Forests provide products for people such as glue, wood fuel, traditional medicine (herbs), water and materials to build their houses.¹¹⁰

In addition, poor communities in Africa which live in or near forests also use red wood to make sculpture and furniture which they sell in cities for much needed income.¹¹¹ The socio-economic benefits improve the quality of life of many poor communities through the use of forest products, services and also income.¹¹² Forests and their products are important to

¹⁰⁵ Saner P *et al*, 'Reduced soil respiration in gaps in logged lowland dipterocarp forests', 258 (2009), *Forest Ecology and Management*, 2007–2012, page 2007.

¹⁰⁶ See note 4.

¹⁰⁷ Asselt Van H, 'Managing the fragmentation of international environmental law: Forests at intersection of the climate and biodiversity regimes', 44 (2012), *New York University Journal of International Law & Politics*, 1205 - 1258, page 1213.

¹⁰⁸ Coskun A A and Gencay G, 'Kyoto Protocol and "deforestation" a legal analysis on Turkish environment and forest legislation', 13 (2011), *Forest Policy and Economics*, 366-377, page 368.

¹⁰⁹ Zagas D T and Raptis I D, 'Identifying and mapping the protective forests of southeast Mt. Olympus as a tool for sustainable ecological and silvicultural planning, in a multi-purpose forest management framework', 37 (2011), *Ecological Engineering*, 286–293, page 286.

¹¹⁰ Neumann-Cosel L *et al*, 'Soil carbon dynamics under young tropical secondary forests on former pastures-A case study from Panama', 261 (2011), *Forest Ecology and Management*, 1625-1633, page 1632.

¹¹¹ Forest income (cash or any kind) is obtained from selling forest products; these forest products can be harvested and collected from a forest. The supply of the product must solely depend on the existence of the forest. Also see Pouliot M and Treue T, 'Rural People's Reliance on Forests and the Non-Forest Environment in West Africa: Evidence from Ghana and Burkina Faso', 23 (2013), *World Development*, 180–193, page 181.

¹¹² Bartelmus P, *Environment, Growth and Development: The concepts and strategies of sustainability*, Routledge, London and New York, (1994), 1-151, page 120.

millions of people in developing countries and provide ways of living or providing a daily income.¹¹³

Furthermore, forest ecosystems provide watershed services that regulate the availability and quality of water available to human activities.¹¹⁴ The water-flow in rivers from forests is important to wildlife and rural communities, and also canal irrigation systems for such communities since they do not have the technology to pump water.¹¹⁵ These forests also protect homes against mudslides and rock falls.¹¹⁶ However, there is a greater need to incorporate social and cultural values (cultural history linked to a forest which is deemed sacred) within forest protection legal frameworks.¹¹⁷

Many of the international instruments that relate to forests do not recognise the full value of forests. They seem to pick one function to cover their goals and objectives. This seems to have fragmented the forest protection programmes since one instrument recognises one function and a set of programmes to enhance its objectives and another recognises a different function to enhance its objectives as well. These instruments only recognise one function as per its objective or its goals it wants to achieve.

3.1 Bush-meat

Many communities depend on bush-meat for survival (including sale for income) and as a source of proteins. In developing countries, forest products contribute to about 35 per cent of the household income.¹¹⁸ Indigenous communities hunt for small animals such as kudu, impala and sables in forests that are near them. They hunt animals for meat which they use to supplement their diet; they also sell this meat to other communities for income which they use to buy other forms of commodities.¹¹⁹

¹¹³ Rayamajhi S, Smith-Hall C and Helles F, 'Empirical evidence of the economic importance of Central Himalayan forests to rural households', 20 (2012), *Forest Policy and Economics*, 25-35, page 25. Forests are seen as a natural insurance against poverty hardships.

¹¹⁴ Locatelli B and Vignola R, 'Managing watershed services of tropical forests and plantations: Can meta-analyses help?', 258 (2009), *Forest Ecology and Management*, 1864–1870, page 1864.

¹¹⁵ Ibid.

¹¹⁶ Ibid.

¹¹⁷ Edwards D *et al*, 'A theoretical framework to assess the impacts of forest management on the recreational value of European forests', 11 (2011), *Ecological Indicators*, 81-89, page 88.

¹¹⁸ Pouliot M and Treue T, 'Rural People's Reliance on Forests and the Non-Forest Environment in West Africa: Evidence from Ghana and Burkina Faso', 23 (2013), *World Development*, 180–193, page 180.

¹¹⁹ Hunted meat is sold to purchase vital commodities like equipment and medicine treatment for agriculture, school fees for their children, clothes and medical supplies. Also see Kanagavel A *et al*, 'Conservation

In addition, at least 62 developing countries worldwide rely on fish and wildlife for their 20 per cent protein diet; during droughts in Central Africa this can reach 80 per cent.¹²⁰ In the Democratic Republic of Congo nearly 90 per cent of hunted meat is sold or traded for basic commodities.¹²¹ In Neo-tropical and Afro-tropical communities, it is estimated about 5 million tons of bush-meat is consumed every year.¹²² In addition, in Central Africa the hunting of bats and chimpanzees is a prominent activity that adds protein to community diets.

To summarise, the hunting of wild animals for bush-meat poses certain challenges for wildlife conservation and human well-being.¹²³ Therefore, conservation efforts aimed at reducing bush-meat consumption must provide cheap and sustainable alternatives to animal protein sources, and be able to change local bush-meat consumer behaviour through enabling social and educational campaigns.¹²⁴ There is a need to provide alternative employment for these communities to provide for their families. If there is no alternative employment, governments and conservationists should look towards increasing the value of live wildlife by using direct conservation payments to communities, selling hunting rights to trophy hunters or exploring non-consumptive tourism enterprises.¹²⁵

Furthermore, initiating conservation awareness and also educational programmes in areas located near forests will instil an environmental conservational ethic. These programmes will educate and also inform the communities about the most threatened and vulnerable species in their area. In addition this will change attitudes and behaviour and put that knowledge of wildlife conservation to use. The government can also delimit some of these forest areas with threatened species.¹²⁶

implications of wildlife utilization by indigenous communities in the Southern Western Ghats of India', 9 (2016), *Journal of Asia-Pacific Biodiversity*, 271-279, page 271.

¹²⁰ Ibid.

¹²¹ Ibid.

¹²² Ibid.

¹²³ Kamins O A *et al*, 'Uncovering the fruit bat bushmeat commodity chain and the true extent of fruitbat hunting in Ghana, West Africa', 144 (2011), *Biological Conservation*, 3000–3008, page 3000.

¹²⁴ Willcox A and Nambu M D, 'Wildlife hunting practices and bush-meat dynamics of the Banyangi and Mbo people of Southwestern Cameroon', 134 (2007), *Biological Conservation*, 251-261, page 260.

¹²⁵ See note 4.

¹²⁶ Dupain J *et al*, 'Bushmeat characteristics vary with catchment conditions in a Congo market', 146 (2012), *Biological Conservation*, 32-40, page 38-39.

These challenges of eating and hunting for meat include the transmission of zoonotic diseases (for example, ebola, cholera and bilharzia); depletion of endangered and threatened species; threats to food and economic security; and the loss of important ecosystem services.¹²⁷ Illegal unsustainable bush-meat hunting is seen as a threat to the local species. This has been caused by food insecurity, poverty, deforestation and droughts. The Millennium Development Goals (MDGs) (now superseded by the Sustainable Development Goals¹²⁸ (SDGs) in 2016) have seen overall progress in the reduction of poverty and hunger reduction.¹²⁹ However, approximately 805 million people globally remain currently chronically undernourished.

Bush-meat trade has increased because of the demand for meat in urban and rural areas, humans living in wildlife areas, food insecurity, and poverty, inadequate legal frameworks to protect wildlife and create incentives to inform people to desist from illegal bush-meat hunting.¹³⁰ The over-hunting of wildlife in Africa is also caused by political instability and inadequate forest laws.¹³¹ There is an urgent need to address drivers of deforestation and raise global awareness of the seriousness of the threat.¹³² Failure to protect forests will have severe economic, ecological and social impacts.¹³³

Furthermore, the CBD 11th Conference of Parties (COPs) in India stated that unsustainable hunting threatens biodiversity and local livelihoods.¹³⁴ It called for the development of appropriate systems of bush-meat hunting and trade based on the integration of local communities, traditional and scientific knowledge.¹³⁵ Local communities must also be

¹²⁷ See note 123.

¹²⁸ See website on Sustainable Development Goals <https://sustainabledevelopment.un.org/?menu=1300>. Accessed March 4, 2020.

¹²⁹ Cawthorn M D and Hoffman C L, 'The bushmeat and food security nexus: A global account of contributions, conundrums and ethical collisions', 76 (2015), *Food Research International*, 906-925, page 906. Also see Aghokeng F A *et al*, 'Extensive survey on the prevalence and genetic diversity of SIVs in primate bushmeat provides insights into risks for potential new cross-species transmissions', 10 (2010), *Infection, Genetics and Evolution*, 386-396, page 386. See also website <http://www.un.org/millenniumgoals/>. Accessed 3 March 2017.

¹³⁰ Lindsey A P *et al*, 'The bushmeat trade in Africa savannas: Impacts, drivers and possible solutions', 160 (2013), *Biological Conservation*, 80-96, page 80.

¹³¹ Machovina B, Feeley J K and Ripple J W, 'Biodiversity conservation: The key is reducing meat consumption', 536 (2015), *Science of the Total Environment*, 419-431, page 419.

¹³² Anderson J *et al*, 'Managing leftovers: Does community forestry increase secure and equitable access to valuable resources for the rural poor?', 58 (2015), *Forest Policy and Economics*, 47-55, page 47.

¹³³ Bartelmus P, *Environment, Growth and Development: The concepts and strategies of sustainability*, Routledge, London and New York, (1994), 1-151, page 19.

¹³⁴ Watson F *et al*, 'Spatial patterns of wire-snare poaching: Implications for community conservation in buffer zones around National Parks', 168 (2013), *Biological Conservation*, 1-9, page 2.

¹³⁵ Taylor G *et al*, 'Synthesising bushmeat research effort in West and Central Africa: A new regional database', 181 (2015), *Biological Conservation*, 199-205, page 199.

supported in any of these protection programmes since they can ignore, respect and defy national laws.¹³⁶ Governments should work to increase domestic animal husbandry to increase animal-proteins. Co-operation between policymakers, researchers and hunters in developing conservation and protection laws and public health action is important.

The FAO has defined Community Forestry (CF) as ‘any situation that involves local communities in forestry protection activities’.¹³⁷ This exists when a local community intimately plays a role in land-use decision making, and when the community is satisfied with their involvement and the benefits they collect from the management of forests surrounding them, products and resources. This improves the livelihood of the people that live in and near forests. It is assumed that if local communities are involved in conservation programmes and decision-making processes concerning natural forests, this allows them to develop a sense of ownership, and change their behaviour towards environmental protection programmes and projects, start using forest resources in a sustainable way.

In conclusion, there is a need to increase law enforcement measures (increasing forest patrols will reduce hunting and other illegal activities in these forest areas); raise awareness to forest communities about forest protection; engage communities in patrolling and monitoring activities; educate communities about the importance of conserving wildlife; and support indigenous communities to plant trees and monitor and analyse the status of biological diversity.¹³⁸ Likewise, protected areas can also be used to conserve and protect species that have been overhunted and are now threatened with extinction.¹³⁹

3.2 Recreation Functions

The recreational benefits that forests provide are seen as considerable. The recent studies show that countries gain substantial revenue from tourism which substantiates the economy; thus conserving forests is now a huge necessity.¹⁴⁰ Studies in the tourism sector have established that the revenues obtained from tourists and visitors to natural reserves and wildlife sanctuaries

¹³⁶ Borgerson C *et al*, ‘Who hunts lemurs and why they hunt them’, 197 (2016), *Biological Conservation*, 124-130, page 130.

¹³⁷ See note 38.

¹³⁸ Rovero F *et al*, ‘Hunting or habitat degradation? Decline of primate populations in Udzungwa Mountains, Tanzania: An analysis of threats’, 146 (2012), *Biological Conservation*, 89-96, page 95.

¹³⁹ Macdonald W D *et al*, ‘Bushmeat trade in the Cross-Sanaga rivers region: Evidence for the importance of protected areas’, 147 (2012), *Biological Conservation*, 107-114, page 107.

¹⁴⁰ See note 4.

from forest-related recreational activities such as wildlife viewing, trophy and safari hunting, viewing scenic beauty and nature walks are substantial and can sustain economies of small countries and islands.¹⁴¹ In addition, the aesthetic and eco-tourism services provided by forest ecosystems are important to an extent that some islands and developing countries are dependent on these services. Hiking and camping are the most dominant recreational activities in many forest areas.

However, forest ecosystems provide intangible benefits that cannot be captured by conventional markets. These can be joggers who run every morning, afternoon or evening in the forests and school kids who camp in the forests during their nature trips. Evidence provided by many countries shows that these benefits are significant.¹⁴² This means that policies for forest protection and their services should also emphasise local contexts and values.

In brief, ensuring a clean, safe and silent forest terrain is important for tourists and forest visitors for a successful recreational forest visit.¹⁴³ This is possible with the co-operation of forest rangers and police officers.

3.3 Religious and Cultural functions

Forests have played important spiritual, religious, social and cultural functions for many communities for centuries around the world.¹⁴⁴ Many forests are sacred and are protected by various religious or cultural groups.¹⁴⁵ Natural forests have held meaning for certain communities, people visit the forests to pray or different benefits, they visit forests regularly and even young people visit forests for various activities and ceremonies. Forests have been known to play a vital role in the mythology of many communities around the world.¹⁴⁶

Further, these forests have low rates of disturbance, a high percentage of vegetative cover and high biological diversity. People have used these forests socially for a long time, have

¹⁴¹ Ninan N K and Inoue M, 'Valuing forest ecosystem services: What we know and what we don't', 93 (2013), *Ecological Economics*, 137–149, page 143.

¹⁴² Ibid, page 148.

¹⁴³ Golos P, 'Selected aspects of the forest recreational function in view of its users', 74 (3) (2013), *Forest Research Papers/Institute, Versita*, 257-272, page 271.

¹⁴⁴ Allendorf D T, Brandt S J and Yang M J, 'Local perceptions of Tibetan village sacred forests in Northwestern Yunnan', 169 (2014), *Biological Conservation*, 303-310, page 303.

¹⁴⁵ See note 4.

¹⁴⁶ Yachkaschi A and Yachkaschi S, 'Nature conservation and religion: An excursion into the Zoroastrian religion and its historical benefits for the protection of forests, animals and natural resources', 20 (2012), *Forest Policy and Economics*, 107-111, page 107.

developed equitable and effective rules, few conflicts usually emerge and the forests have shown to have the means to adapt to changes.¹⁴⁷ These forests are usually numerous, dispersed across a range of topography and climatic conditions and range of size from single hectares to thousands of kilometres.¹⁴⁸

Sacred forests are often community-conserved small sections of forests with spiritual, religious or cultural values (note interchange social and religious).¹⁴⁹ These sacred groves are usually community-preserved and often a small forest patch in which certain spiritual, cultural or religious communities gather. These patches are usually well protected with by-laws that regulate their use. These forest patches can usually play a significant role in biodiversity conservation.¹⁵⁰

However, conservation programmes always focused on larger areas for protection. The conservation of small habitat patches can add value to biological diversity by increasing the total of areas protected by forest laws. Another importance is that these patches are important contributions to a variation of species that co-exist together as an ecosystem. Moreover, religions have taken an increased interest and influential roles in the environmental protection movement and are framing and informing public policy views around the world.¹⁵¹ It must be noted in this instance that there is a rise in NGOs, green campaigners and religions that take a more sympathetic interest towards nature.

Furthermore, forest protection must be supported by environmental education, and community-based monitoring. Internationally, United Nations Educational, Scientific and Cultural Organization (UNESCO) have set up a World Heritage List for which these forests might meet the criteria for under Heritage sites. The criteria for forests with religious, spiritual and cultural

¹⁴⁷ Ostlund L and Bergman I, 'Cultural Landscapes in Northern Forests-Time, Space and Affiliation to the Land', in Agnoletti M (ed), *The Conservation of Cultural Landscapes*. CAB International, United Kingdom, (2006), 30-41, page 30.

¹⁴⁸ Brandt S J *et al*, 'Sacred forests are keystone structures for forest bird conservation in Southwest China's Himalayan Mountains', 166 (2013), *Biological Conservation*, 34-42, page 34.

¹⁴⁹ Aerts R *et al*, 'Conservation of the Ethiopian church forests: Threats, opportunities and implications for their management', 551-552 (2016), *Science of the Total Environment*, 404-414, page 404.

¹⁵⁰ Angelstam P, 'Maintaining cultural and natural biodiversity in Europe's economic centre and periphery', in Agnoletti M (ed), *The Conservation of Cultural Landscapes*. CAB International, United Kingdom, (2006), 125-143, page 129.

¹⁵¹ Chan A and Islam S M, 'State, religion and environmentalism: Fostering social cohesion and environmental protection in Singapore', 1 (3) (2015), *Environmental Sociology*, 177-189, page 177.

heritage are that it should have a unique testimony to cultural tradition; have a land-use representative of a culture, human interaction or settlement; be associated with living traditions or beliefs; represent ongoing ecological and biological processes; and contain significant natural habitats for biodiversity conservation.¹⁵² It must be noted that the United Nations Declaration on the Rights of Indigenous Peoples¹⁵³ and the Convention for the Protection of the World Cultural and Natural Heritage¹⁵⁴ recognise the importance forests have to indigenous people and promotes the protection of their tenure rights.

However, incorporating these forests into large conservation strategies entails outside intervention which can change and undermine the local protection and management of these areas. Alternatively, new programmes around these forests can be created as protected areas, in which legal ownership and property retains remain with the community or even potentially be strengthened. These programmes could indicate that these forests are off-limits to forest-degrading activities such as road and dam building, which these communities will never engage in. Furthermore, well planned regulation for land tenure can also preserve the cultural heritage and traditional knowledge sharing, and this can lead to successful implementation of sustainable forest management.¹⁵⁵

In conclusion, forest protection should focus on ensuring there is ecological sustainability and inclusiveness of sustaining cultural values. Moreover, the institutions must involve increased collaboration and benefits for the local communities who use these forests. To that end, forest protection should be focused on reducing degradation, control grazing of domesticated animals (goats, cattle and sheeps), deforestation, and also increased participation with the local users.

3.4 Wood Harvesting, Processing and Energy

Currently, an estimated 2 billion people depend on forest products and goods such as fruits, fibres, flowers, fuel-wood, game meat and traditional medicine to meet their daily basic needs.¹⁵⁶ Wood fuel harvesting in the global South is important in that it has gained more

¹⁵² See also website on <http://whc.unesco.org/en/criteria/>. Accessed 2 February 2017.

¹⁵³ United Nations Declaration on the Rights of Indigenous Peoples (A/RES/61/295, 13 September 2007).

¹⁵⁴ See note 49.

¹⁵⁵ Molina M C, 'Cultural heritage, sustainable forest management and property in inland Spain', 249 (2007), *Forest Ecology and Management*, 80-90, page 80.

¹⁵⁶ Specht J M *et al*, 'Burning biodiversity: Fuelwood harvesting causes forest degradation in human-dominated tropical landscapes', 3 (2015), *Global Ecology and Conservation*, 200–209, page 200.

prominence than other sources of energy, principally in rural communities. Most developing countries' energy is powered by wood. In Africa, an estimated 60 per cent of the energy supply is from wood fuel and charcoal. In addition, in Latin America and Asia about 15 and 11 per cent of energy is from wood fuel.

In Africa, the formal wood harvesting and processing industry generates an estimated €15 billion every year. The formal sector also employs roughly about 650 thousand people that is about 0.2 per cent of the labour force. The major part of Africa's wood production is for energy. A total of 660 million people in Africa used either wood or charcoal for cooking - that is 63 per cent of the total population, 43 per cent of urban dwellers and 77 per cent of rural.¹⁵⁷ Wood energy is also important in Africa for cooking, bricklaying, tobacco curing, and tile and ceramic drying.¹⁵⁸

Although, efforts in South Africa have been substantial in efforts for electrification of every rural household, the government cannot keep up with the population increase. Even in households that have electricity in Zululand in KwaZulu Natal province, people continue to use wood energy due to its lower cost than electricity. Africa has become a global producer of wood fuel that is responsible for an estimated 60 per cent of the global charcoal and 34 per cent of wood fuel production.¹⁵⁹

In addition, most of the charcoal in Africa is produced to be marketed and the FAO in 2014 estimated this to be worth more than €9.6 billion. The FAO has assessed that the addition of the informal sector that produces charcoal and collection of fuel-wood would at least double the contribution of the GDP in Africa to 2 per cent and could add up to 19 million Full-Time Equivalent jobs (FTE). This will add up to 14 million FTE in the charcoal sector and will increase the contributions to employment to an estimated 4.8 per cent.

Importantly, trees have provided fuel used to heat homes and for business since the 18th century. Wood energy has been used to move trains and raw materials from one point to another. It can

¹⁵⁷ Food and Agriculture Organization of the United Nations. UNEP and UN-REDD Programme. See also Grieg-Gran M *et al*, 'The role of forests in a green economy transformation in Africa', (2015), 1-65, page 13. See website on http://www.unclearn.org/sites/default/files/inventory/forests_in_green_economy_in_africa-english_full_report_421614.pdf. Accessed 10 January 2017.

¹⁵⁸ Ibid.

¹⁵⁹ Ibid.

be said that wood fuel sustained all aspects of life from domestic uses, industrial production to railway construction and the operations of trains. In addition, the development of the railways was linked to the economic growth and the growth of the timber industry.

3.5 Protective Functions

Forests play a vital role in mitigating dangerous natural hazards.¹⁶⁰ They have a protective function if they are located on slopes where there is a risk to human life or buildings due to avalanches, landslides, rock-falls, erosion and debris flows.¹⁶¹ The effects of protective forests are also important in preserving soil and reducing the risk of flooding.¹⁶² Urban and rural development in forest lands and many settlements in mountainous ecosystems have meant that the protective functions of forests be recognised as one of the multi-uses of forests. It is interesting to note that China and Ethiopia have been planting more trees to reduce land erosion, smog and dust storms.

Protective forests are part of the natural landscapes of many countries and their maintenance is less expensive than technical measures. Forest ecosystems have now been included in the term 'ecological engineering'.¹⁶³ Further, forests in areas that are mountainous provide protection to exposed communities from rock-falls and debris flows.¹⁶⁴ They also reduce the frequency of peak flows and floods in areas where people live in valleys.

Trees are said to play two different processes in improving the stability of slopes. They are a mechanical reinforcement of the soil as provided by the root system and complex hydrological effects, and for example the rainfall is intercepted by the canopy of the trees, reduction of soil moisture through evapo-transpiration, modification of soil permeability and providing drainage systems due to the macro-pore system provided by the root growth.¹⁶⁵ Thus, forests are highly

¹⁶⁰ Fidej G *et al*, 'Assessment of the protective function of forests against debris flows in a gorge of the Slovenian Alps', 8 (2014), *iForest-Biogeosciences and Forestry*, 73-81, page 73.

¹⁶¹ Zagas T D and Raptis D I, 'Identifying and mapping the protective forests of Southern Mt Olympus as a tool for sustainable ecological and silvicultural planning, in a multi-purpose forest management framework', 37 (2011), *Ecological Engineering*, 286-293, page 291.

¹⁶² See note 4.

¹⁶³ Ecological engineering is when the design of sustainable ecosystems that integrate human society with its natural environment for the benefit of both. It is also a long-term, ecological strategy to manage a site with regard to natural and man-made hazards.

¹⁶⁴ Dave R, Tompkins L E and Schreckenber K, 'Forest ecosystem services derived by smallholder farmers in Northwestern Madagascar: Storm hazard migration and participation in forest management', 84 (2017), *Forest Policy and Economics*, 72-82, page 72-3.

¹⁶⁵ Vergani C *et al*, 'Root reinforcement in subalpine spruce forests following timber harvest: A case study in Canton Schwyz, Switzerland', 143 (2016), *Catena*, 275-288, page 275.

regarded as a recommended protective guard in integrated risk management. For this reason, forest protection represents an extensive measure to make sure the multi-use and fundamental ecosystem services function.

4. Ecological Functions

Forests play ecological functions that are vital for the existence of many species on earth. The well-known ecological functions forests plays are carbon sequestration, biodiversity habitat and protection, pollination, soil and water protection.¹⁶⁶ Fine root production in forests also regulate below ground carbon. Furthermore, forest ecosystems play a huge role in carbon sequestration. They are responsible for the global carbon budget since they fix carbon into the soil.¹⁶⁷ Forests also help to store nutrients in the soil and prevent soil erosion. From an ecological perspective, soil which is nutrient-rich will support more growth than nutrient-poor soil.

Forest ecosystems are rich biological communities and harbour a significant amount of biodiversity.¹⁶⁸ They provide many ecosystem services such as prevention of soil erosion, preservation of plants and animals, and species conservation.¹⁶⁹ Forest bees also help in the pollination of agricultural plants. Forest ecosystems provide an array of ecological roles including hydrological regimes, nutrient cycles and also affect population of plants and animals.¹⁷⁰ Forests also process water, nutrient and sediments from the upper stream in rivers, thus, functioning as a sink for sediments and nutrients.¹⁷¹

4.1 Carbon Sequestration

Carbon sequestration is the process whereby carbon is captured from the atmosphere and stored.¹⁷² The well-known greenhouse gas is carbon dioxide (CO₂). If carbon dioxide is in

¹⁶⁶ See Zhiqin Pei Z *et al*, 'Soil and tree species traits both shape soil microbial communities during early growth of Chinese subtropical forests', 96 (2016), *Soil Biology & Biochemistry*, 180-190.

¹⁶⁷ Yuan Z *et al*, 'Pattern and dynamics of biomass stock in old growth forests: The role of habitat and tree size', 75 (2016), *Acta Oecologica*, 15-23, page 15.

¹⁶⁸ Naidu T M and Kumar A O, 'Tree diversity, stand structure and community composition of tropical forests in Eastern Ghats of Andra Pradesh, India', 9 (2016), *Journal of Asia-Pacific Biodiversity*, 328-334, page 328.

¹⁶⁹ Tavora S G G and Turetta D P A, 'An approach to map landscape functions in Atlantic Forest-Brazil', 71 (2016), *Ecological Indicators*, 557-566, page 559.

¹⁷⁰ Lindenmayer B D *et al*, 'Environmental and human drivers influencing large old tree abundance in Australian wet forests', 372 (2016), *Forest Ecology and Management*, 226-235, page 226.

¹⁷¹ Gunderson P *et al*, 'Environmental Services provided from riparian forests in the Nordic Countries', 39 (2010), *AMBIO*, 555-566, page 555.

¹⁷² See note 4, page 279.

excess, this results in too much heat energy being stored, reducing heat (opaque effect) radiation into the atmosphere, thus changing our climate. According to the Fifth Assessment Report (AR5) of the IPCC, the global mean air temperature for the period 2016-2035, relative to 1986-2005, will likely be in the range of 0.3-0.7 degrees Celsius more.¹⁷³

Carbon compounds are known to emit heat energy from the sun, consequently these compounds expand after being heated therefore trapping heat energy in the atmosphere. This causes the temperatures on the earth's surface to increase.¹⁷⁴ Moreover, scientists have warned that this could affect agricultural yields and water resource productivity. They have also stated that this might cause the sea level to rise, and salt-water contamination to increase and more prevalent drought conditions, floods and storms. Human health will be threatened by an increase in unknown diseases and severe heat waves. Eventually, this would change the climate and populace of species on earth.

Natural forests are major carbon sinks.¹⁷⁵ Forests play three vital roles: they store carbon in biological ecosystems, carbon storage in durable wood products and fixate carbon in the soil.¹⁷⁶ Natural forests store an estimated 2.4 Petagrams (Pg) of carbon every year and sequester to about 30 per cent of global carbon emissions, therefore reducing carbon concentrations in the atmosphere by about a third.¹⁷⁷

Globally, forests store an estimated capacity of 54 per cent of the total carbon pool in terrestrial ecosystems.¹⁷⁸ Forest lands store an estimated 80 per cent of organic terrestrial carbon above-

¹⁷³ See IPCC, 2014: *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds)]. IPCC, Geneva, Switzerland, page 151. See website on <https://www.ipcc.ch/report/ar5/syr/>. Accessed 16 December 2016. See also Gratani L, Varone L and Bonito A, 'Carbon sequestration of four urban parks in Rome', 19 (2016), *Urban Forestry & Urban Greening*, 184-193, page 184.

¹⁷⁴ Trabucco A, Bosio D and Van Straaten O, 'Carbon sequestration, Land Degradation and Water', in Bossio D and Geheb K (eds), *Conserving land, protecting water*, in association with the CGIAR Challenge Program on Water and Food and International Water Management Institute (IWMI), Comprehensive assessment of water management in agriculture series version 6, (2008), CAB International, United Kingdom, 83-106, page 83.

¹⁷⁵ Ninan N K and Inoue M, 'Valuing forest ecosystem services: What we know and what we don't', 93 (2003), *Ecological Economics*, 137-149, page 141.

¹⁷⁶ Chang J S, 'Solving the problem of carbon dioxide emission', 35 (2013), *Forest Policy and Economics*, 92-97, page 94.

¹⁷⁷ Neumann M *et al*, 'Comparison of carbon estimation methods for European forests', 361 (2016), *Forest Ecology and Management*, 397-420, page 397.

¹⁷⁸ See note 75, page 15.

ground and about 40 per cent below-ground.¹⁷⁹ Further, the Kyoto Protocol¹⁸⁰ states that afforestation of degraded forest has the potential to reduce carbon emissions and also protection of carbon sinks.¹⁸¹ Under the Kyoto Protocol Article 3.4, States are required to maintain healthy forest conditions to improve the function of carbon sinks by forests.¹⁸²

Forests normalize the atmosphere by storing carbon dioxide and releasing oxygen in a process called photosynthesis. The carbon sequestered in trees is kept in their woody tissues and decomposing organic matter in dead litter and in the soil.¹⁸³ The carbon is converted into carbohydrates and stored in roots, barks, stems and tree leaves; however, some of the carbon is fixed into the forest soil undercover. Further, forests fix carbon into the soil by their roots. Soil organic carbon is the largest carbon stock in the terrestrial ecosystems.¹⁸⁴ Carbon dioxide is actually toxic and contributes to global warming, so the sequestration and storage of carbon is essential for the planet.

In brief, deforestation driven by fires and illegal logging and other activities results in the release of carbon stored in forests into the atmosphere as carbon dioxide. When trees are harvested for various products and land uses, the carbon stored in wood is then released. Forests sequester carbon from the atmosphere, forest degradation and deforestation is one of the main causes of greenhouse gas emissions.¹⁸⁵ Thus, deforestation contributes an estimated of about 20 per cent of greenhouse gas emissions yearly.

¹⁷⁹ Biswas S, Bala S and Mazumdar A, 'Diurnal and seasonal carbon sequestration potential of seven broadleaved species in a mixed deciduous forest in India', 89 (2014), *Atmospheric Environment*, 827-834, page 829.

¹⁸⁰ See note 52.

¹⁸¹ Hoel M and Sletten M T, 'Climate and forests: The tradeoff between forests as a source for producing bioenergy and as a carbon sink', 43 (2016), *Resource and Energy Economics*, 112-129, page 112. Also see Wennersten R, Sun Q and Hailong L, 'The future potential for carbon capture and storage in climate change mitigation: An overview from perspectives of technology, economy and risk', 103 (2015), *Journal of Cleaner Production*, 724-736, page 726.

¹⁸² Susaeta A *et al*, 'Economics of carbon sequestration under fluctuating economic environment, forest management and technological changes: An application to forest stands in the Southern United States', 20 (2014), *Journal of Forest Economics*, 47-64, page 48.

¹⁸³ Luyssaert S *et al*, 'Old-growth forests as global carbon sinks', 455 (2008), *NATURE*, 213-215, page 213.

¹⁸⁴ Yong-Gang Zhao *et al*, 'Soil organic carbon fractions and sequestration across a 150-yr secondary forest chronosequence on the Loess Plateau, China', 133 (2016), *Catena*, 303-308, page 303.

¹⁸⁵ Ojea E *et al*, 'Ecosystem services and REDD: Estimating the benefits of non-carbon services in worldwide forests', 78 (2016), *World Development*, 246-261, page 246.

For these reasons, there is a need to combat deforestation to reduce global warming and eventually climate change. In fact, researchers have suggested that reducing forest degradation and deforestation may be a less expensive alternative to mitigate climate change.¹⁸⁶ This has led to huge efforts in carbon credit programmes which are being financed by multi-lateral organisations such as the United Nations and the World Bank.¹⁸⁷ In addition, the role of forests in sequestering carbon has led to the UNFCCC developing the Reducing Emissions from Deforestation and forest Degradation in developing countries¹⁸⁸ (REDD+), reducing emissions from deforestation and forest degradation and the conservation of forest carbon stocks, sustainable management of forests and enhancement of forest carbon sinks.¹⁸⁹

4.2 **Biodiversity**¹⁹⁰

Forests support an estimated 65 per cent of the world's torrential taxa and constitute the highest species diversity.¹⁹¹ Forests ecosystems are rich in birds, antelopes, reptiles, moths, butterflies, fish, beetles and many other species.¹⁹² They also are a myriad of community types which habitat a rich mixture of plants and animals.¹⁹³ Biological diversity components are genetic, species, community, landscape and process or function.¹⁹⁴ Every constituent of diversity is primarily important to maintain for welfare and sustainable development.¹⁹⁵

¹⁸⁶ Ibid.

¹⁸⁷ Ibid.

¹⁸⁸ See webwebsite on <https://redd.unfccc.int/>. Accessed on February 20, 2020. See “*The Conference of the Parties (COP) invited Parties, relevant organizations and stakeholders to share outcomes, experiences and lessons learned from their efforts to reduce emissions from deforestation and forest degradation in developing countries (REDD+)*”. See also <https://www.forestcarbonpartnership.org/what-redd>. “*REDD+ stands for countries' efforts to reduce emissions from deforestation and forest degradation, and foster conservation, sustainable management of forests, and enhancement of forest carbon stocks*”.

¹⁸⁹ Bellassen V and Luyssaert S, ‘Management forests in uncertain times’, 506 (2014), *NATURE*, 153-155, page 153.

¹⁹⁰ Biodiversity is considered to encompass genes, individuals, populations, meta-populations, species, communities, ecosystems, and the interactions between these entities. See Lindenmayer B D, Franklin F J and Fischera J, ‘General management principles and a checklist of strategies to guide forest biodiversity conservation’, 131 (2006), *Biological Conservation*, 433–445, page 433.

¹⁹¹ Ibid.

¹⁹² Sebek P *et al*, ‘Does a minimal intervention approach threaten the biodiversity of protected areas? A multi-taxa short-term response to intervention in temperate oak-dominated forests’, 358 (2015), *Forest Ecology and Management*, 80–89, page 80.

¹⁹³ Dar A J and Sundarapandian S, ‘Patterns of plant diversity in seven temperate forest types of Western Himalaya, India’, 9 (2016), *Journal of Asia-Pacific Biodiversity*, 280-292, page 280.

¹⁹⁴ Cordeiro J N *et al*, ‘Forest fragmentation in an African biodiversity hotspot impacts mixed-species bird flocks’, 188 (2015), *Biological Conservation*, 61–71, page 61.

¹⁹⁵ Kaya Z and Raynal J D, ‘Biodiversity and conservation of Turkish forests’, 97 (2001), *Biological Conservation*, 131-141, page 131.

Thus, there is a direct relationship between biological diversity and forest conservation. In addition, the main ecological explanation for preserving biological diversity is that losses of biodiversity will impair the life-supporting processes that species require, for example the primary functions of national ecosystem which is to provide food and provision for clean water.¹⁹⁶

Moreover, biological diversity is important for many reasons, for example in the pharmaceutical industry, it is important for the gene pool used to manufacture drugs and medicine.¹⁹⁷ Biodiversity also performs a vital function in poverty alleviation, maintenance of functional ecosystems and important for achieving sustainable development. Furthermore, it is important for the cultural welfare of many indigenous people and cultural integrity. Biodiversity is also important in underpinning the functioning of different ecosystem by maintaining the flow of ecosystem services and also maintaining ecosystem resilience to external shocks.¹⁹⁸ It also has cultural and spiritual importance as many countries use animals or trees as their national emblems, for example USA uses the kingfisher eagle, and New Zealand and Canada have leaves.

It is said that birds compose approximately 75 per cent of all terrestrial animals in the boreal regions and the presence of forests has caused the birds to adapt to these landscapes.¹⁹⁹ However, bird species are sensitive to habitat changes in forests due to logging, forest fragmentation and tree species composition.²⁰⁰ In addition, forests cover streams and moderate water temperatures for the worthy benefit of the aquatic life.

Furthermore, forests perform critically important functions in sustaining Africa's biological diversity. Forests have provided vital habitat for the African ape species which are now included in the International Union for Conservation of Nature Red List of Endangered or Critically Endangered Species. Forests in Africa also harbour an estimated 20 000 of different

¹⁹⁶ Bengtsson J, 'Biodiversity, disturbances, ecosystem function and management of European forests', 132 (2000), *Forest Ecology and Management*, 39-50, page 40.

¹⁹⁷ See note 4.

¹⁹⁸ Czajkowski M, Buszko-Briggs M and Hanley N, 'Valuing changes in forest biodiversity', 68 (2009), *Ecological Economics*, 2910–2917, page 2910.

¹⁹⁹ Zlonis J E and Niemi J G, 'Avian communities of managed and wilderness hemiboreal forests', 328 (2014), *Forest Ecology and Management*, 26-34, page 27.

²⁰⁰ Czeszczewik D *et al*, 'Effects of forest management on bird assemblages in the Bialowieza Forest, Poland', 8 (2014), *iForest-Biogeosciences and Forestry*, 377-385, page 377.

plant species.²⁰¹ African forests play a huge part in the conservation and protection of threatened elephants, chimpanzees, lions and rhinoceros. The goals to utilise biodiversity sustainably and conserve biodiversity are well enshrined in the Convention on Biological Diversity (CBD). The instrument aims at tailoring conservation of biodiversity to the requirements of economic development, thus reaching Sustainable Development Goals (SDGs).²⁰²

In addition, in order to address the loss of biological diversity, the CBD COP 10 in 2010 adopted the Aichi Targets in Nagoya, Japan. The main strategic goals of the agreement are: (1) reducing and addressing the loss of biodiversity; (2) reducing the direct pressures facing biodiversity; (3) improve the status of protecting ecosystems, species and genetic diversity; (4) enhance benefits of biodiversity to everyone; and (5) enhance participatory planning and implementation of conservation tools.²⁰³ Target 19 specifically calls for ‘improving scientific knowledge about biodiversity and its applicability in decision-making’²⁰⁴ this is one of the enabling conditions for the Strategic Plan for Biodiversity.²⁰⁵

Forest should be protected to reduce biological diversity loss and extinction.²⁰⁶ With the continued rise of human population, the demand for resources is only going to increase, thus there is a need for a forest instrument to protect biodiversity.²⁰⁷

4.3 Pollination

Pollination is driven critically by insects and is one of the most important ecological functions of bees.²⁰⁸ Pollination is also an important service provided by natural forest ecosystems that

²⁰¹ Fayolle A *et al*, ‘A new insight in the structure, composition and functioning of central African moist forests’, 329 (2014), *Forest Ecology and Management*, 195–205, page 195.

²⁰² Mathews F, ‘From biodiversity-based conservation to an ethic of bio-proportionality’, 200 (2016), *Biological Conservation*, 140–148, page 140. On Sustainable Development Goals see website on <https://sustainabledevelopment.un.org/?menu=1300>. Accessed 17 January 2017.

²⁰³ Velasco D *et al*, ‘Biodiversity conservation research challenges in the 21st century: A review of publishing trends in 2000 and 2011’, 54 (2015), *Environmental Science & Policy*, 90–96, page 90. Also see website <https://www.cbd.int/sp/targets/>. Accessed 20 February 2017.

²⁰⁴ *Ibid*.

²⁰⁵ *Ibid*.

²⁰⁶ Galli A *et al*, ‘Ecological Footprint: Implications for biodiversity’, 173 (2014), *Biological Conservation*, 121–132, page 130. Also see SCBD (Secretariat of the Convention on Biological Diversity), 2003. Handbook of the Convention on Biological Diversity. Earthscan, London.

²⁰⁷ Bartelmus P, *Environment, Growth and Development: The concepts and strategies of sustainability*, Routledge, London and New York, (1994), 1-151, page 5.

²⁰⁸ Williams M N, ‘Restoration of non-target species: Bee communities and pollination function in Riparian Forests’, 19 (4) (2011), *Restoration Ecology*, 450-459, page 451.

have been studied carefully for agricultural crop production.²⁰⁹ The forest insects are vital in augmenting crop yields in agricultural crop farms located near forests. In addition, approximately 88 per cent of flowering plants use and require animal pollination. Pollination accounts for about 35 per cent of the crop production. Globally, pollination has been estimated to be worth billions of dollars, especially in the production of crops such as coffee, cocoa, flowers, maize and many amongst these.²¹⁰

There are about 20 000 to 30 000 bee species around the world and they are the dominator for taxon wild plant species pollinator. They maintain the plant species community and are cornerstone species in the conservation of biodiversity. In agriculture, they are considered to be worth more than €150 billion per year, which is 40 per cent of the crop production which is about €625 billion.²¹¹

Furthermore, pollination by vertebrates such as bats, rodents, monkeys and birds are very common in South America. In the temperate zone, pollination has been mainly by bees, butterflies, beetles and well-known anthropoids.²¹² Many of these animals have morphology and phenology relationships with these plant species.²¹³ Therefore if forests are destroyed, this will also affect crop plant yields. However, human activities increasingly affect biological diversity leading to specie loss.²¹⁴ Pollinating insects such as wild bees have decreased in number in the past decade.²¹⁵ This is because land-use change has affected the existence of pollinators and plant species that depend on animal pollination.²¹⁶

²⁰⁹ Hao Q, Liu H and Liu X, 'Pollen-detected altitudinal migration of forests during the Holocene in the mountainous forest-steppe ecotone in Northern China', 446 (2016), *Paleogeography, Paleoclimatology, Paleoecology*, 70-77, page 75.

²¹⁰ Favero A and Mendelsohn R, 'Using markets for woody biomass energy to sequester carbon in forests', 1(1/2 Spring/Summer) (2014), *Journal of the Association of Environmental and Resource Economists*, 75-95, page 75.

²¹¹ See website on <http://www.fao.org/3/i0842e/i0842e03.pdf>, page 1-12. Accessed on 03 February 2020.

²¹² Thompson D I *et al*, 'Biodiversity and ecosystem services: Lessons from nature to improve management of planted forests for REDD-plus', 23 (2014), *Biodiversity Conservation*, 2613–2635, page 2622.

²¹³ Motten F, 'Pollination ecology of the Spring Wildflower Community of a Temperate Deciduous Forest', 56 (1) (1986), *Ecological Monographs*, 21-42, page 39.

²¹⁴ Balvanera P, Kremen C and Martinez-Ramos, 'Applying community structure analysis to ecosystem function: Examples from pollination and carbon storage', 15 (1) (2005), *Ecological Applications*, 360-375, page 360.

²¹⁵ Kovcs-Hostyanszki A *et al*, 'Contrasting effects of mass-flowering crops on bee pollination of hedge plants at different spatial and temporal scales', 23 (8) (2013), *Ecological Applications*, 1938-1946, page 1938.

²¹⁶ Comita S L *et al*, 'Interactive effects of land use history and natural disturbance on seedling dynamics in subtropical forest', 20 (5) (2010), *Ecological Applications*, 1270-1284, page 1270.

4.4 Soil Protection

Natural forests play a critical role in preventing soil erosion. It is generally accepted that trees provide vegetative protection to soil from erosion from rain, wind and animals. Trees roots provide compactness and increase soil strength. Deforestation causes widespread soil erosion and damage through loss of top soil with compost manure. There is also loss of nutrients which results in a decline in crop productivity. The eroded topsoil is estimated to be three times more nutritious for plants than the remaining soil. In the USA, the productivity losses arising from soil erosion are estimated to be US \$38 billion each year. Further, more protected forest soil has better capacity to absorb rainwater and gradually release it throughout the year.²¹⁷ In addition, forests shade the undergrowth, providing a cooler environment for them to grow.

The FAO reported in the Global Forest Resources Assessment (FRA) 2010 that about 8 per cent of the world's forests were primarily designated for the protection of soil.²¹⁸ During the Rio Declaration (Earth Summit) (United Nations Conference on Environmental and Development, UNCED), people were encouraged to promote various activities for sustainable forest management. Chapter 11 of the Agenda 21 was primarily focused on the soil protection and preservation function of natural forests and also in combating deforestation and desertification.²¹⁹

Another critical issue is that the magnitude of run-off and flooding can be negatively influenced by deforestation. Forest cover plays a huge part in soil retention and the prevention of flooding. Forests also serve as water-pollution sinks. They help filter out and decompose waste that has been introduced into inland waters and other water ecosystems. This serves a critical purpose in cleaning water mainly used by indigenous people who do not have water purification facilities.²²⁰

Furthermore, forests also help in the maintenance of nutrient balance in the soil. Trees absorb more mineral nutrients from the soil when they are still growing and accumulate them in their

²¹⁷ Brookhuis J B and Hein G L, 'The value of the flood control service of tropical forests: A case study for Trinidad', 62 (2016), *Forest Policy and Economics*, 118-124, page 118.

²¹⁸ Miura S *et al*, 'Protective functions and ecosystem services of global forests in the past quarter-century', 352 (2015), *Forest Ecology and Management*, 35-46, page 36. Also see the full report here <http://www.fao.org/docrep/013/i1757e/i1757e.pdf>. Accessed 15 January 2017.

²¹⁹ *Ibid*.

²²⁰ See note 4, page 2.

huge trunks. As years go by, the accumulated nutrients are returned to the soil when the tree leaves wither and branches fall off. The other nutrients can be stored in the stems and roots. This reduces river siltation and improves soil fertility. Thus, this process is also important for crop productivity since an increase of mineral nutrients for plants can be toxic.²²¹

Moreover, the protection of water and soil by forests gives scope into the establishment of the Payment for Ecosystem Services (PES) scheme. Water and soil management ensures that there is a comprehensive method of linking natural resources and the improvement of livelihoods in conservation programs and incentives. The recent Clean Development Mechanism (CDM) and REDD+ requires that there is a link between conservation programs.²²²

4.5 Hydrological Services

Natural forests protect watersheds and also provide hydrological services. One of the most important environmental services forests provide is that of clean water. The FAO in 2013 recognised that an estimated one third of the world's largest cities were drawing their drinking water from forested areas. Hydrological services are aiding in the protection of water for supplying water for domestic uses, irrigation, power generation and industrial consumption.²²³

Forests also influence the amount of water available, regulate surface and groundwater flows and also maintain the high quality of water.²²⁴ The hydrological services are important for maintaining welfare in a range of different ecosystems and socio-economic settings. These include, flood control, the maintenance of dry season water supply, and water quality. The hydrological cycle provides eco-system services that are vital for many species to survive. In addition, some forests are called 'cloud forests', because they can strip and retain moisture from fogs and clouds. Trees provide shade and this lowers the air temperatures, thus also reducing the artificial demand for cooling of human structures.²²⁵

²²¹ Noble A *et al*, 'Bright spots: Pathways to ensuring food security and Environmental Integrity', in Bossio D and Geheb K (eds), *Conserving land, protecting water*, in association with the CGIAR Challenge Program on Water and Food and International Water Management Institute (IWMI), Comprehensive assessment of water management in agriculture series version 6, (2008), CAB International, United Kingdom, 191-204, page 192.

²²² See website for CDM here <https://cdm.unfccc.int/>. Accessed 5 January 2017.

²²³ See note 96, page 130.

²²⁴ See note 130.

²²⁵ Laband N D, 'The neglected step-children of forest-based ecosystem services: Cultural, spiritual and aesthetic values', 35 (2013), *Forest Policy and Economics*, 39-44, page 39.

In the hydrological cycle, water vapour evapo-transpires through leaves pores; accumulates as clouds and eventually precipitates; the water is then absorbed by tree roots restarting the cycle again. Forests also perform biological detoxification services to water resources. Biological detoxification is effective because it converts the chemical pollutants into less chemical toxic substance which the roots then remove permanently. These ecosystem services are at a lower cost than water purification processes. This water is used by indigenous people without water purification facilities, animals that drink from the river and maintains other species that live in rivers.

Deforestation can alter the hydrological functions of forests, this alters the run-off processes, flood control, flow regulation, water quality and groundwater recharge.²²⁶ It can also cause reduced river habitat and less purification of water, channel narrowing and rapid run-off with water having high levels of silt. Thus, forest protection with a new instrument will result in the multiple ecosystem services of forests also being protected.

In addition, natural forests play a role in poverty alleviation of poor local communities which live in or near forests and they use forestry resources and goods. Poverty alleviation is one of the important goals set out in the Millennium Development Goals (MDGs).²²⁷ Poverty is highest in rural communities, thus harvesting forest resources and goods is an important economic activity.²²⁸ Forests in rural communities are seen as ‘shock absorbers’ since they provide much needed resources for rural people.²²⁹

5. Conclusion

In conclusion, this chapter introduced some of the socio-economic and ecological functions of forests. This is important to show why forests need protection in terms of a binding international instrument with sole purpose being that of forest protection. These functions are important to many species on earth, thus forests should be protected. However, due to the fact

²²⁶ Ojea E and Martin-Ortega M, ‘Understanding the economic value of water ecosystem services from tropical forests: A systematic review for South and Central America’, 21 (2015), *Journal of Forest Economics*, 97-106, page 97.

²²⁷ Adopted goals at the Millennium Summit that was held in New York (USA) at the headquarters of United Nations in 2 000. See website for more information <http://www.un.org/millenniumgoals/bkgd.shtml>. Accessed 25 February.

²²⁸ Shackleton M C *et al*, ‘The importance of dry woodlands and forests in rural livelihoods and poverty alleviation in South Africa’, 9 (2007), *Forest Policy and Economics*, 558-577, page 559.

²²⁹ Pretty J, ‘Investments in collective capacity and social capital’, in Bossio D and Geheb K (eds), *Conserving land, protecting water*, in association with the CGIAR Challenge Program on Water and Food and International Water Management Institute (IWMI), Comprehensive assessment of water management in agriculture series version 6, (2008), CAB International, United Kingdom, 179-190, page 179.

that forests are not yet protected by a binding instrument, there are many threats that cause deforestation. Some of the well-known threats include population increases, poor environmental policies and ineffective forest governance, agriculture, illegal logging, wildfires, invasive species, economy and market failures.

Forests are very diverse - both in terms of species and functionality. From the 19th century onwards, the mistake was made in assuming that because forests were seen to have little or no economic value, then they could not be useful as they just took up vast tracts of arable land. This thinking has been proven not only to be false but also dangerous for the survival of all species on earth, especially humans because of the dependence on forests for more than just clean air. It has increasingly become important to protect forests as they are important in balancing the earth's ecosystem. Indigenous peoples in many continents, such as the Kayapo of the Amazon, knew and understood the importance of forests as a life force and protector of all species, and used them in a sustainable manner which showed respect to the forest and protected them by ensuring that none of the resources were exploited or misused. The many uncontrollable and unnatural forest fires around the world have demonstrated just how vulnerable we become without forests and the species which they protect.

With a decrease in the size and number of forests the natural temperature control system is decreased, because there is no environment to absorb the warm gasses in the air – thus without the protection of forests, the climate will get warmer despite any and all technological efforts to cool the earth. Secondly, the diverse ecosystem in the forests is the answer/cure/treatment for many different ailments that plague most of humanity. With the proper knowledge of how to use these remedies, there is less need for medicines that are useful in one aspect and harmful in the other, the indigenous peoples of the Americas such as the Potowami knew about these sacred uses and the importance of honouring the forests for their protection. Thirdly, the forests ecosystem also helps the surrounding ecosystems which rely on it, this is because the diverse life in forests helps keep soil fertile and strong, which helps with river banks, vegetation and feed people and animals. This is evident from how the forests of the SAHEL region were not taken care and thus the region has turned into a dessert with poor sand quality which makes the area susceptible to landslides.

Lastly, forests are important for air quality control because they consume gasses and either store or release them as oxygen. Such fires would not be an issue if there were forests to create rain to clear the air and stop the fires, however because the forests are destroyed for profit their

overall value for survival is not noticed until it is too late. Forests are beautiful and scenic, but that is not all they do for the planet. Forests need protection on a global scale because those who know their true value are few and barely heard because they are silenced in many different ways by those with power and influence as there are no laws to protect them.

It is important to show the importance of forests as international instruments recognise these functions and have related these functions to their obligations. For example forests are important because they reduce desertification – forests recognised in the UNCCD, forests are habitats – recognised for conservation for biodiversity under CBD and forests are carbon sinks – recognised under the UNFCCC.

Nevertheless, Chapter 3 looks at the causes of deforestation and forest degradation. It is important to investigate what sectors are causing the most deforestation and what are the causes of deforestation. This will give policy and law-makers a way of integrating these sectors or causes into their forest protection laws to reduce deforestation. Moreover, this can offer coordination and cooperation with other sectors to reduce deforestation and forest degradation.

Chapter 3: Threats to Natural forests

1. Introduction

It is important in this thesis to determine the causes of deforestation since it is of key importance in the development of international instruments. International environmental instruments aim to collaborate efforts to reduce significant environmental damage. Countries are invited by the United Nations Environmental Program²³⁰ (UNEP) to make such submissions and report on human induced deforestation and forest degradation as they are the causes of GHG. The identification of human induced deforestation is also important for the effectiveness of REDD+ incentives. Thus, the knowledge of the causes of deforestation is of paramount importance for effective forest protection policies, programmes and incentives.

Forests are vital socio-economic and ecological functions, as it has been shown in the preceding Chapter; however they are threatened by different anthropogenic agents. Furthermore, forests can no longer meet their current functions, because of degradation and deforestation. Traditionally, the causes of deforestation are population pressure, poverty, migration patterns, unequal land access, poor forest governance and global trade liberalisation. Likewise, poor land tenure rights also cause agricultural expansion, wood extraction and urbanisation.

Land use changes and demand for raw materials from natural resources often cause the rate of deforestation to increase (including conversion of forest land into agricultural land, mining and urbanisation). In developing countries, the main causes of deforestation are urbanisation, economic development and growth, demand for agricultural and forest products, fuelwood collection, shifting cultivation, commercial logging, cattle ranching, charcoal making, building of roads, mining, and poor land policies, war and civil conflicts.

In addition, forests are seen only to have functions when they are extracted or cut down. Forests have more productive, regulatory and protective roles than the mere functions which local communities quickly identify. The cost-benefit terms used in forest economic products assessments emphasise the production functions of forests and underestimate the regulatory and protective roles of forests. This idea emanates from the viewpoint that forests are worthless

²³⁰ United Nations Environment Organisation. See website on <https://www.unenvironment.org/>. Accessed on February 24, 2020.

standing, but wood products such as furniture, charcoal and firewood are seen as valuable. Thus, non-value services and functions of forests are seen as useless, but these are the most distinguishing functions of forests, these include protecting the soil against erosion, mitigating droughts and climate change, and habitat for species.

The direct drivers of deforestation can be classified in the following manner:

- factors pertaining demography (population increase and migration);
- factors relating to the economy (wood commodity and market boom and the economic structure);
- factors relating to policy and governmental institutions (environmental department: - government policies, effectiveness of governmental departments, co-operative governance, conservation policies, management of natural resources, land tenure rights, sovereignty, corruption); and
- Factors pertaining to the cultures of a country or communities (community behaviour, public values or ethics).

2. Demography

With the Earth's population rapidly increasing, the demand for goods and services is putting more pressure on natural ecological systems and services.²³¹ The past decade has seen agricultural land being doubled worldwide. Likewise, cropland has expanded by 10 per cent since 1960, because food demand and production has doubled due to the increased agricultural productivity caused by intensified production, expansion of agricultural lands and improved use of technology in the agricultural sector.

The increase in human population has a negative relationship with deforestation. The global population has increased by 1.3 per cent per year from 5.3 billion in 1990 to approximately 7 billion; and is expected to increase by a further 0.9 per cent per year to approximately 8.2 billion by 2030.²³² Population pressures along with technological advances are one of the major causes of deforestation. When population increases, there are various side effects for example lack of employment, exploitative private enterprises, poverty, and also inequality in the

²³¹ Gourdie A, *The human impact on the natural environment: Past, present and future*, 7th (ed), (2013), John Wiley & Sons, Ltd, United Kingdom, 1-406, page 10.

²³² 'Developing sustainable forest industries', in Higman S (ed), *State of the World's Forest*, International year of forests, Food and Agriculture Organisation of the United Nations Rome, (2011), 1-179, page 31.

distribution of assets. These effects increase the demand for more land and accelerate the rate of deforestation.

Human population densities, therefore, have led to intensive unsustainable cultivation practises for crop production and animal husbandry; this has left most forests destroyed. In addition, humans have primary needs such as the construction of houses, schools and hospitals, which usually cause deforestation.

Moreover, many countries that have seen increases in population have similarly seen an increase in natural resource demand and land for settlement.²³³ Rapid population growth tends to exacerbate socio-economic problems which are sometimes indirect drivers of deforestation. In addition, the increase in population has a positive and direct relationship with household consumption expenditure. Population growth causes an increase in the quantity of income-independent consumption and the level of minimum household consumption expenditure. There is also an increase in the need for labour supply, therefore huge need to pay salaries. This allows governments to overexploit forest lands for agricultural lands and governmental housing projects. In addition, the subsistence consumption of commodities marketed and the consumption of homemade commodities have increased.²³⁴

In 2009, FAO estimated that there will be a 70 per cent increase of food production demand by 2050.²³⁵ Likewise, meat production will have to increase by 85 per cent. In two-thirds of developing countries, oil seeds are to increase to 23 per cent between the periods of 2011 to 2020. In addition, biofuels will also increase by 21 per cent from its current level (to reach this peak in 2020), and there will be a 29 per cent increase of the global vegetable oil. Furthermore, due to urbanisation there will be an increase in the number of people who rely on charcoal. All this will lead to more land being deforested for more uses that are not related to forest protection.

3. Economy Related

²³³ Laurance W, 'Reflections on the tropical deforestation crisis', 91 (1999), *Biological Conservation*, 109-117, page 111.

²³⁴ Food and Agriculture Organization, *The State of food in security in the world (2011). Recent trends in world food commodity prices: costs and benefits. Past and future trends in world food prices.* See website <http://www.fao.org/3/i2330e/i2330e03.pdf>. Accessed on 16 January 2021.

²³⁵ See website on FAO, 2050: A third more mouths to feed <http://www.fao.org/news/story/en/item/35571/icode/>. FAO, 2019. Accessed on 1 August 2019.

Deforestation has also been increased by economic stagnation and market failure.²³⁶ The low levels of Gross National Profit (GNP) increases poverty which results in many poor communities clearing land for crop production, animal husbandry and firewood (for use and selling). Market failures in a country can also cause a government to borrow money from private and public lenders. These countries can pay their loans and debts using profits from natural resources sales, especially for minerals and forest products which are readily available and cheap to access.

Similarly, governments in developing countries facing debts encourage the expansion of crop lands, cattle ranches and wood production to increase profits from taxes to pay debts. Likewise, the devaluation and inflation of a currency in developing countries usually increase the exportation of wood and encourages logging activities to expand and thrive. In addition to the direct effects, population pressure can exacerbate numerous micro- and -macroeconomic problems, for example the failure in the markets can be severe, the consumption needs increases and the per-capita income reduced.

The essence of life connotes that poor communities are forced into hunting and gathering in forests for an income and food. The rich in contrast will invade forest lands looking for land to build their mansions and luxurious houses in forests and mountains, where it is scenic, less crowded and noisy. Consequently, farmers will increase their stocks and crop lands to feed the growing population, whilst governments will seek more land to build more social amenities such as roads, hospitals, shopping malls and schools.²³⁷

In addition, a major problem that has increased the rate of deforestation is that of trade liberalisation. The 21st century is an era witnessed by unprecedented economic globalisation. Many international free-trade agreements have promoted greater foreign investment in natural resource-extraction industries. Consequently, many developed countries, for example, Spain, Germany, China, England, Russia and United States of America have big corporations that have invested massively and have interests in timber, petroleum, minerals and construction projects in many developing countries. However, many developing countries do not have strong institutions and adequate environmental safeguards, and strong sentiments supporting forest protection. They have become natural resource exploitation grounds for many of these

²³⁶ Ibid.

²³⁷ FAO in the 21st century: Ensuring food security in a changing world. Rome, (2011). See website <http://www.fao.org/3/i2307e/i2307e.pdf>. Accessed 16 January 2021.

aggressive corporations as they badly need the investments. Many corporations from developed countries do not abide to international environmental obligations once they are given contracts in developing countries.²³⁸

4. Poor forest governance

In developing countries, a chronic problem that causes deforestation is weak enforcement and policy failure of the environmental legislation (if any) designed to reduce deforestation. This can be well explained by a scenario whereby people who clear forests are never fined, prosecuted or convicted. Importantly, many governments are usually ambitious enough to enact forest protection laws, but later wax and wane them off by executive decrees or suspend them through the courts. Executive decrees are a problem because they render many environmental law instruments ineffective and impotent. Currently, this has been the case in Brazil under new President Bolsonaro, the environmental instruments have been heavily affected by executive decrees that are meant to develop and exploit the Amazon forest.²³⁹

In addition, countries do not value forests. They seek economic development investments and by economic development they do not include forest protection and conservation programmes in that theme. It is mainly a definition that seeks to build more towns, malls and schools; and forest protection is seen as a burden and obstacle to economic development as has been happening in developing countries some time ago.²⁴⁰

However, in many developing countries, environmental legislations are battered by a turbulent economy, political events and also stifled bureaucratic inefficiency. There is usually legislation fragmentation in the way in which it is used and promulgated. The mining and agricultural sector can also have different Environmental Impact Assessment (EIA) procedures as way of deceiving the environmental procedures. Besides, the mining and agricultural sectors are highly regarded than the environmental sector. Further, different environmental requirements are usually written in other legislations. This usually causes legislation fatigue and confusion; these concepts will be explained in the coming chapters.

²³⁸ Duncan French, 'Developing States and International Environmental Law: The Importance of Differentiated Responsibilities', Vol. 49, No. 1 (Jan 2000), *The International and Comparative Law Quarterly*, 35-60, page 35.

²³⁹ See website The Guardian Dom Phillips in Rio de Janeiro, *Jair Bolsonaro launches assault on Amazon rainforest protections*, Wed 2 Jan 2019, 17. See <https://www.theguardian.com/world/2019/jan/02/brazil-jair-bolsonaro-amazon-rainforest-protections>. Accessed on February 24, 2020.

²⁴⁰ See website on <http://www.fao.org/3/X6953E/X6953E02.htm>. Accessed on 16 January 2021.

5. Poor Land-Use Strategies

They are various factors that cause poor land-use strategies, the well-known ones are economic conditions, poor policies and land spatial planning laws, changes in commodity pricing and infrastructure investment and development. Land use changes means the manner in which individuals use land, vegetation and water for socioeconomic and ecological functions.²⁴¹ Human anthropogenic land-use has changed and destroyed many forest ecosystems around the world.²⁴² Land-use has also resulted in habitat degradation with impacts on the biodiversity, altered ecosystem processes and reduced resource levels. Furthermore, the majority of productive forests has undergone persistent anthropogenic disturbance through urbanisation or agriculture.²⁴³

In addition, land-use strategies have significantly affected forest dynamics and species conservation. Over the past years, the most tragic landscape changes have been caused by technological advances in the agricultural and mining sectors. Nowadays, farmers use more land and have become more prominent in crop production and animal husbandry. Furthermore, the ongoing changes in international policies in urban and rural development might lead to more deforestation since the move in the 16th century to industrialisation, growth, development and civilisation.²⁴⁴

There are other factors that cause deforestation under poor land uses which are household behaviour on land use decisions and market shifts. In addition, land use efficiency is mostly influenced by land tenure. Land privatisation can be seen as a better way for sustainable use of forests, than open access status. However, other practical measures that can reduce deforestation need also to be used, such as effective community ownership of forests in Spain. This is seen in some parts of Catalonia, whereby the owner of a forest can give a servitude to the community to use parts of the forests.²⁴⁵ In Catalonia forest owner can also approve the duty to care to an organisation to help in caring and protecting the forests (referred to as

²⁴¹ Sivakumar K V M, 'Interactions between climate and desertification', 142 (2007), *Agricultural and Forest Meteorology*, 143-155, page 145.

²⁴² Johansson T *et al*, 'Environmental considerations from legislation and certification in managed forest stands: A review of their importance for biodiversity', 303 (2013), *Forest Ecology and Management*, 98-112, page 98.

²⁴³ Pollini J, 'Agroforestry and the search for alternatives to slash-and-burn cultivation: From technological optimism to a political economy of deforestation', 133 (2009), *Agriculture, Ecosystems and Environment*, 48-60, page 48.

²⁴⁴ See website on <http://www.fao.org/3/i3010e/i3010e.pdf>. Accessed on 19 January 2021.

²⁴⁵ Xarxa de Custòdia del Territori: A network for the land stewardship in Catalonia. See website on <http://custodiaterritori.org/ca/english.html>. Accessed on March 4, 2020.

custodia del territoria).²⁴⁶ The duty of care and community ownership of forests will be discussed later in the thesis. These can be socioeconomic and recreational activities such as jogging, nature walks, picking of herbs and firewood. Likewise, agricultural technology, genetically modified seeds, better farming practices and the presence of landowners on their lands will surely play a role in forest protection. GMOs can threaten the native species of tree plants and reduce the gene pool as invasive species.²⁴⁷

In short, governments should invest in educating communal and commercial farmers on the importance of sustainable farming practices and land uses that will not negatively affect forest protection. However, global protection and conservation must prioritise and address conflicting land uses.²⁴⁸

6. Forest Ownership

There are two different types of forest ownership. Forests can be owned by companies or individuals, that is, forests can be owned publicly or privately. Public ownership is when the state (government) or its parastatals own the forest land. Private ownership is when individual farmers, companies, business co-operatives or Non-Governmental Organisations (NGOs) have ownership of the forest land.

This ownership gives the owner tenure rights on how forests can be acquired, used, controlled and cleared. Importantly, ownership of forest land gives owners the right to use measures to protect their forest lands. They can use forest rangers similar to the methods used by governments to protect their forests under protected areas.

In addition, forests in developing countries are controlled under common property or open access status; this is different to forests controlled under a private restrictive access in developed countries. Due to the open access status, deforestation is more likely and afforestation regimes rarely exist.

²⁴⁶ Canamero Boisan J I, 'Custodia del territoria. Configuración jurídica. Titulación e inscribibilidad', in *El Llibre sise del Codi Civil de Catalunya: anàlisi del Projecte de Llei*, Materials de les Divuitenes, Jornades de Dret català a Tossa, Tossa de Mar 25 i 26 de setembre de 2014, Institut de Dret privat europeu i comparat Universitat de Girona (Coord.), Impres a Catalunya, Girona, (2015), 397-405, page 397.

²⁴⁷ See website on <http://www.fao.org/3/y5507e/y5507e14.htm>. Accessed on 16 January 2021.

²⁴⁸ Dobrovolski R *et al*, 'Global agricultural expansion and carnivore conservation biogeography', 165 (2013), *Biological Conservation*, 162-170, page 162.

Furthermore, due to the forest anthropogenic threats and common property status, forests are likely to face higher pressures from exploitation. Thus, as long as global commons remain unmanaged under open access status, with the demand of raw materials and forest resources and products, it might be hard to reduce deforestation and forest degradation.

7. Agricultural activities

Agricultural land over the years has been doubled with the conversion of forest lands into crop plantations, cattle ranches and grazing lands.²⁴⁹ Today, any agricultural land required is gained mainly from forest lands. Due to the growth of human population, there has been a rapid demand for raw materials, goods and services. This has increased pressure on forests, forest products, services and lands.

The most common forest land conversion in developing countries is shifting cultivation (swidden or slash and burn).²⁵⁰ This agricultural system is used in many developing countries and about 600 million communal farmers worldwide. The reasoning behind shifting cultivation is that during the fallow period, the regrowth of trees and grass help with replenishing the soil organic matter.²⁵¹ Countries which partake in shifting cultivation are usually the ones with the highest rate of deforestation and are always rich in natural forests. Rural communities usually burn and slash forests (ash and dry wood provide nutrients for their crops) to provide natural fertilizers for crop cultivation.²⁵² Farmers in developing countries often cut down and burn small patches of forests for crop production, using the burned ash as fertilisers and nutrients.

Furthermore, after about three years when the nutrients are depleted and they have a weed problem, the farmers abandon that plot for about fifteen years. The farmer might shift to about six patches before returning to the first weeded one. Moreover, slash-and-burn is used as an economical way to clear forests for many land-use transformations in developing countries.

²⁴⁹ Etter A *et al*, 'Regional patterns of agricultural land use and deforestation in Columbia', 114 (2006), *Agriculture, Ecosystems and Environment*, 369-386, page 369.

²⁵⁰ Mukul A S and Herbohn J, 'The impacts of shifting cultivation on secondary forests dynamics in Tropics: A synthesis of the key findings and spatio temporal distribution of research', 55 (2016), *Environmental Science & Policy*, 167-177, page 167.

²⁵¹ Brady C N, 'Alternatives to slash-and-burn: A global perspective', 58 (1996), *Agriculture, Ecosystems and Environment*, 3-11, page 4.

²⁵² Maguire A, 'Shifting the paradigm: Broadening our understanding of agriculture and its impact on climate change', 33 (2010), *Environ Environmental Law and Policy Journal*, 276-297, page 292.

This process in urban development does not lead to reforestation since the transformation is a long-term one and the land is eventually built on.²⁵³

Moreover, understanding shifting cultivation is important for the sustainable management of forests, biodiversity conservation, and proper land-use and management in developing countries. Shifting cultivation is seen as a dominant system of producing food around the world, it is also one of the major causes of deforestation.²⁵⁴ However, proper agricultural practises should be regulated, enforced and put in place for communal and commercial farmers.²⁵⁵ Farmers need to be educated and given awareness on the importance of forests; this can also play a vital role in reducing deforestation.

The relationship between the number of livestock and forests, suggests that grazing pressure has negative impacts on forests and leads to deforestation and forest degradation. Livestock overgrazing can be said to hinder growth of tree species, eliminate seedlings and also hamper forest regeneration.²⁵⁶ According to a scholarly opinion, the causes of deforestation are mainly due to forest lands being converted to animal grazing lands.²⁵⁷

However, the conversion of forest lands into grazing lands has several problems which include soil degradation and erosion, forest fragmentation and loss of specie habitats, habitat disturbances, reduction of wildlife population densities, change in vegetation structure and composition.²⁵⁸ The need for more land for agriculture causes forest lands to be deforested, therefore leading to loss of soil fertility, river siltation and flooding.²⁵⁹ In addition, deforestation leads to the dramatic loss of forest cover, therefore increasing surface albedo, this could potentially change the rainfall patterns and temperatures in a region or country.

²⁵³ Harwood R R, 'Development pathways toward sustainable systems following slash-and-burn', 58 (1996), *Agriculture, Ecosystems and Environment*, 75-86, page 75.

²⁵⁴ Juo S R A and Manu A, 'Chemical dynamics in slash-and-burn agriculture', 58 (1996), *Agriculture, Ecosystems and Environment*, 49-60, page 50.

²⁵⁵ Molina C M, 'The restoration of forest landscapes through farmland afforestation measures in Spain', in Agnoletti M (ed), *The Conservation of Cultural Landscapes*. CAB International, United Kingdom, (2006), 197-210, page 208.

²⁵⁶ Ibid.

²⁵⁷ Fearnside M P, 'Amazonian deforestation and global warming: Carbon stocks in vegetation replacing Brazil's Amazonian forest', 80 (1996), *Forest Ecology and Management*, 21-34, page 22.

²⁵⁸ Craig J, Vaughan J D and Skinner J B, *Resources of the Earth: Origin, Use and Environmental Impact*, 2nd (ed), (1996), Prentice Hall, Upper Saddle River, New Jersey, 1-459, pages 8-9.

²⁵⁹ Norse D, 'Multiple threats to regional food production: Environment, economy, population?', 19 (2) (1994), *Food Policy*, 133-148, page 133.

The growth of population in developed countries means that people tend to buy more food products which require more land to be ploughed and cultivated. This results in forest lands being cleared for greenhouses to plant many types of crops.²⁶⁰ Traditionally, agriculture has been the leading cause of deforestation and forest degradation. In order to reduce the rate of deforestation, there is need to integrate sustainable agriculture into forest protection instruments, and recognise that this sector is well interconnected with forest protection.

Further, governments should increase effective enforcement of sustainable agricultural practices, through the use of municipal authorities or traditional leaders. This will ensure that agriculture activities are maintained and farmers practice sustainable farming methods on their farms. Moreover, poverty needs to be reduced in many developing countries to reduce hunting and gathering practises, and shifting cultivation in poor communities. Governments should continue to increase incomes for rural land households through the use of social grants and farming financial incentives to reduce their over-reliance on forest products and services.

However, if governments want to control deforestation there is a need to integrate land-use policies that embrace sustainable agriculture practises and forest protection. Simply ensuring SFM and conservation will not reduce deforestation, because SFM does not tackle the forces of the agricultural sector that drives and enhances deforestation. For governments to reduce deforestation, they have to understand how agricultural production is managed under proper conservation and sustainable ways using land spatial planning laws or protected areas.

Moreover, there is a need to change the land-use and management of agricultural land so that it can support mitigation and plans for conservation and protection programmes aimed at reducing deforestation and forest degradation.²⁶¹ The use of spatial laws and proper zoning of land for agriculture uses can be effective in reducing deforestation. This process will also need proper and effective management by using agricultural officers on the ground with a practical hands-on conservation approach in maintaining sustainable agriculture and forest protection. This can be done by researching which crops are best cultivated in a region with a particular weather and soil type, thus communities will not expand further in clearing and burning trees trying to fertilise the soil for a plant that will never grow in those particular conditions.

²⁶⁰ Ibid, page 134.

²⁶¹ Falloon P and Betts R, 'Climate impacts on European agriculture and water management in the context of adaptation and mitigation—The importance of an integrated approach', 408 (2010), *Science of the Total Environment*, 5667–5687, page 5668.

Furthermore, government interventions can usually reduce the effects of shifting cultivation by providing new innovative technologies (for example tractors, or if they keep chicken or pigs - solar heaters and bulbs can be necessary), and fertilisers to subsistence, communal and commercial farmers. The use of paddocks will also reduce deforestation caused by domestic animals grazing. Further, governments can make use of rooftops and other unused land in urban areas for crop production, especially vegetables.

In addition, decentralisation of agriculture departments will help more farmers participate in the design of forest protection, conservation decisions and sustainable agricultural practises. This will help small farmers in the periphery zones, who need the most help and support with information and awareness about forest protection, agriculture entrepreneurship and innovative technologies appropriate to their specific social, economic and environmental conditions. This will also allow them to know and participate in the REDD+ financial incentives.

8. Urbanisation

Urbanisation is one of the processes that converts forest land and is a major cause of deforestation, thus it deserves special attention and mention. The process of urbanisation in so-called 'rural growth points' in South America and Africa concentrates people into small urban geographical areas, so that they can function as a society or community. It degrades the environmental quality, as forest lands are replaced by towns, roads and buildings. The by-products from houses and industrial areas (waste material and chemical emissions) affect the ecological health of forests.

Usually, the increase of population will bring an influx of people from rural areas to urban centres. This results in more land being needed to resettle these people. Urbanisation consumes forest land and increases forest fragmentation. This changes the forest land and species composition in forest areas.²⁶² There is also an increase in the demand for charcoal and firewood since more people will need to cook, bath and heat.²⁶³

²⁶² Tim De Chant *et al*, 'Urban influence on changes in linear forest edge structure', 96 (2010), *Landscape and Urban Planning*, 12–18, page 12.

²⁶³ Elnagheeb H A and Bromley W D, 'Extensification of agriculture and deforestation: Empirical evidence from Sudan', 10 (1994), *Agricultural Economics*, 193-200, page 194.

Further, half of the earth's population lives in cities and every year about 67 million people move into urban areas.²⁶⁴ For the last 50 years urban areas have expanded, this is expected to continue. The annual growth rate for urban areas for the period 2010-2016 was estimated to be 1.9 per cent.²⁶⁵ In 2030, it is projected that about 5 billion people will be living in urban areas on once unoccupied land, or an approximation of 60 per cent of the 8.3 billion population. In 2035, it is expected that many more people would have lived part of their lives in urban areas, and a huge decrease in population in rural areas would be occurring.²⁶⁶ Urbanisation is usually associated with the construction of schools, hospitals, universities, roads and residential houses. These developments increase deforestation, forest degradation, reducing forest regrowth and increase forest fragmentation.

Consequently, there are many effects of road construction, but the well-known ones are that roads have a direct impact on the mortality of forest species (; animals change their behaviour to avoid roads; vehicles also transport invasive species and chemical pollutants leading to forest degradation).²⁶⁷ Road construction also leads to fragmentation of forests through the division of forests into patches and lack of ecological corridors.²⁶⁸

Moreover, forest fragmentation will lead to loss of habitat for sensitive species.²⁶⁹ It also increases competition and genetic isolation of sub-populations of animals; this may lead to the extinction of native plants and animals.²⁷⁰ Moreso, urban sprawling communities have led to the deforestation, forest degradation and fragmentation of much of the forest land.²⁷¹ Due to the increase of urban areas, there is also an increase of informal settlement areas on the outskirts and sprawling towns which use fuelwood and increase the rate of forest degradation and deforestation.

²⁶⁴ Poelmans L and Van Rompaey A, 'Complexity and performance of urban expansion models', 34 (2010), *Computers, Environment and Urban Systems*, 17–27, page 17.

²⁶⁵ Chant D T *et al*, 'Urban influence on changes in linear forest edge structure', 96 (2010), *Landscape and Urban Planning*, 12–18, page 12.

²⁶⁶ Gopal S *et al*, 'Characterizing urban landscapes using fuzzy sets', 57 (2016), *Computers, Environment and Urban Systems*, 212–223, page 212.

²⁶⁷ Spellerberg F I, 'Ecological effects of roads', in Haigh (*ed*), *The land reconstruction and management series*, Vol 2 (2002), Science Publishers, Inc, Enfield, NH, USA, 1-249, page 20.

²⁶⁸ *Ibid*, page 37.

²⁶⁹ *Ibid*, page 67.

²⁷⁰ Su Y *et al*, 'Modeling the optimal ecological security pattern for guiding the urban constructed land expansions', 19 (2016), *Urban Forestry & Urban Greening*, 35–46, page 35.

²⁷¹ Byerlee D, Stevenson J and Villoria N, 'Does intensification slow cropland expansion or encourage deforestation?', 3 (2014), *Global Food Security*, 92–98, page 95.

Low density suburbs are usually constructed on green forest lands. These campuses and houses often lead to forest ecosystem degradation, thus forest lands lose their forest services and functions. Luxurious houses and villas are also constructed on hills in housing projects; this causes a disturbance of forest ecosystems. Urbanisation might also mean that certain industrial and manufacturing companies will relocate to that area. After clearing out the forest land, these companies now embark on initiatives which result in increased chemical pollution, solid waste disposal and air pollution scandals that will degrade the land and any other tree plants that had started regrowth. Further, office apartments and malls with huge parking spaces are constructed to cater for these residents.²⁷² Construction of railways, airports and canals are also well-known causes of deforestation due to the direct influence of urbanisation.

Nevertheless, the use of the spatial planning laws and principles such as land zoning and demarcation can reduce the rate of forest land loss. Zoning²⁷³ reduces the rate of urbanisation through strict land use rights and increased transaction costs of land sells. Zoning can also reduce the use of open spaces, natural resources and forest reserve zones. Further, zoning can be used to reduce deforestation by reducing conflicts between land uses, manage (maintain or increase) property values for the most preferred land uses and further promote orderly development.

9. Invasive Species

Invasive species²⁷⁴ such as insects and bacteria usually cause most of the deforestation in Europe. These invasive species cause a lot of trees to die and generate dead wood which can catch fire after lightning strikes or intentional wildfires. Besides, human migration through trade

²⁷² Yorka M A and Munroe K D, 'Urban encroachment, forest regrowth and land-use institutions: Does zoning matter?', 27 (2010), *Land Use Policy*, 471–479, page 471.

²⁷³ Zoning is the control of land use by government. The government designates land for use which is to abide to legal processes. It also gives what those uses are specifically. Usually the land is even given the particular size. However, certain legal conditions can be attached to that land use also. See website on <http://dictionary.cambridge.org/dictionary/english/zoning>. Accessed 20 February 2017.

²⁷⁴ Charles Perrings definition - "Any species introduced to ecosystem beyond its "home" range that establishes, naturalises and spreads". See Perrings C, 'Pests, pathogens and poverty: Biological invasions and agricultural dependence', in Kontoleon A, Pascual and Swanson T (eds), *Biodiversity Economics*, Cambridge University Press, United Kingdom, (2007), 133-165, page 140. "An invasive species is an organism that is not indigenous, or native, to a particular area. Invasive species can cause great economic and environmental harm to the new area" from the National Geographic Society. See website <http://www.nationalgeographic.org/encyclopedia/invasive-species/>. Accessed on 02 January 2017. Also see <https://www.fs.fed.us/pnw/invasives/>, United States Forest Service. Accessed 29 January 2017.

has had a detrimental impact on forests in that migration patterns have often introduced invasive species tree species harmful to indigenous trees and forests.²⁷⁵

Invasive species may also include other tree species (this include trees brought from other regions) that grow faster and can colonise the (native) indigenous trees, and challenge their growth.²⁷⁶ During the colonisation of Africa, many Europeans arrived with different plant species that challenged the growth of the native species, and adapted better to African conditions than many native species that grew slow and needed more water. In many African countries, such invading species have had a huge impact to the point of ecosystem transformation, and reduced the growth and much needed space required by native tree species to grow.

Furthermore, some of these plants shed their leaves quicker and were susceptible to wildfires and this led to the destruction of many natural forests.²⁷⁷ Many animals that relied on leaves from specific plants had to change their diets or migrate to areas with their preferred food; this led to a change in biological communities. Invasive species can also change the forest structure, nature and function, canopy gaps and species interactions.²⁷⁸ However, it is recognised that risk-based conservation plans should be integrated into forest protection laws to reduce the effects of invasive species.

10. Forest Fires

The well-known causes of forest fires are expansion of grazing pastures; hunting methods in many developing countries; paper manufacturing; cut construction materials dam construction; hydroelectricity projects; intentions to increase visibility for dry firewood tradition; crop cultivation lands; and trying to scare off and killing predators such as lions and elephants.²⁷⁹

²⁷⁵ Ibid.

²⁷⁶ Ibid.

²⁷⁷ Ibid.

²⁷⁸ Perrings C, 'Pests, pathogens and poverty: Biological invasions and agricultural dependence', in Kontoleon A, Pascual and Swanson T (eds), *Biodiversity Economics*, Cambridge University Press, United Kingdom, (2007), 133-165, page 145.

²⁷⁹ Vahanen T, 'Forests and the Millennium Development Goals', in Couzens E and Kolari T E (eds), *International Environmental Law-Making and Diplomacy Review*, (2005), Joensuu, University of Joensuu and UNEP, 213-222, page 215.

Forest fires destroy millions of hectares of timber and animal species every year as we have seen past year 2019 summer in Spain, Brazil, Australia and Siberia. Further, fire's primary role in the carbon cycle is to reserve the process of photosynthesis by converting stored carbons to carbon emissions, heat energy, soot, situ and ash. Fires have different effects, but the well-known ones are disturbance of the forest structure; changes in biomass stocks; patterns of growth in trees; species composition; diversity and richness. Once a forest has been burned, it is difficult for regrowth, because fires destroy the undergrowth, and after this the chances of another fire are very high, due to ashes and dry wood on the ground.

Nevertheless, educational programmes can reduce the use of fire and provide communities with mechanisms to deal with their immediate daily problems in rural areas.²⁸⁰ This can be done by educating communities on how to make their own fertilisers by using compost and manure, providing them with hunting gear and teaching them good agricultural practises. Furthermore, governments and traditional leaders should also implement strategic management plans to reduce veld fires; institute effective methods to put out fires before they spread and get involved in the daily activities of communities (employing educated people, planning and participation, support structures, integration of ideas or programmes and communication of problems facing forests).²⁸¹ However, illegal logging has caused significant parts of forests to be cleared.

11. Illegal Logging

Illegal logging is the harvesting of forests in contravention of laws or regulations which are for the protection of forests from overexploitation of biological resources.²⁸² These practises include operating without a valid licence, corruption to cut down trees, exceeding allocated timber cutting quotas, processing tree logs without a licence, evading taxes, and breach of national legislations and exporting wood products without paying custom duties.²⁸³ The

²⁸⁰ Ibid.

²⁸¹ Hamilton A *et al*, 'Interdisciplinary conversations: The collective model', in Sorlin S and Warde P (eds), *Nature's End: History and the Environment*, Palgrave Macmillan, United Kingdom, (2009), 162-187, page 183.

²⁸² Tacconi L, 'Defining Illegal Forest Activities and Illegal Logging', in Kleinschmit D, Mansourian S, Wildburger C, Purret A (eds), *Illegal Logging and Related Timber Trade – Dimensions, Drivers, Impacts and Responses. A Global Scientific Rapid Response Assessment Report*, IUFRO World Series, Volume 35 (2016), 23-35, page 24. See website on <http://www.iufro.org/science/gfep/illegal-timber-trade-rapid-response/report/>. Accessed 22 December 2016.

²⁸³ Policy Report: Forests beyond the Law: Scientific Insights into Illegal Logging and Related Timber Trade of *Illegal Logging and Related Timber Trade – Dimensions, Drivers, Impacts and Responses. A Global Scientific Rapid Response Assessment Report*, in Kleinschmit D, Mansourian S, Wildburger C, Purret A (eds). Illegal logging and related timber trade as being "all practices related to the harvesting, processing and trading of timber inconsistent with national and sub-national law". IUFRO World Series, Volume 35, (2016), 1-16, page 12.

definition of illegal logging also includes related trade which makes this a transnational and global timber supply chain activity.²⁸⁴ These activities can be in protected areas, prohibited catchment areas, riverbanks, and slopes and outside concession boundaries.

Furthermore, the causes of illegal logging include inadequate rules and penalty systems, weak forest governance, poverty, poor monitoring and enforcement capacity, economic and political instability, lack of transparency, corporations' influence on government, favouritism and poor concessional agreements.²⁸⁵ It has been mainly government officials who have accepted illegal loggers exceeding their logging limits, gaining forest access using military force or corrupt means, contravening forest protection laws and also capitalised massively on gaps in environmental legislations.

Importantly, illegal logging is usually a problem that manifests itself from ineffective forest governance, poor law enforcement and weak institutions. Illegal logging is also caused by an increase in the demand for timber and fuel wood.²⁸⁶ Thus, illegal logging happens in countries where there is high corruption and no action is taken against cutting down, transporting, manufacturing and trading in wood products.

In addition, illegal logging has become an extensive activity rooted in the socio-political and economic systems of different countries. It also provides businesses for many countries and employs many people. Likewise, it has become a source of income for the poor and the corrupt military bureaucracies in many developing communities. Poor communities are often driven by poverty, thus are well suited for illegal logging as this generates decent income. In addition, in developing countries, there is high inflation, which leads to elevated discount and interest

See website on <http://www.iufro.org/science/gfep/illegal-timber-trade-rapid-response/report/>. Accessed 22 December 2016.

²⁸⁴ International Union of Forest Research Organizations. Interconnecting Forests, Science and People. See website on <http://www.iufro.org/science/gfep/illegal-timber-trade-rapid-response/report/>. Accessed 22 December 2016.

²⁸⁵ Pokornyin B, 'Drivers of Illegal and Destructive Forest Use', in Kleinschmit D, Mansourian S, Wildburger C, Purret A (eds), *Illegal Logging and Related Timber Trade – Dimensions, Drivers, Impacts and Responses. A Global Scientific Rapid Response Assessment Report, IUFRO World Series, Volume 35* (2016), 61-75, pages 61-70. See website on <http://www.iufro.org/science/gfep/illegal-timber-trade-rapid-response/report/>. Accessed 22 December 2016.

²⁸⁶ Rist L *et al*, 'The impacts of selective logging on non-timber forest products of livelihood importance', 268 (2012), *Forest Ecology and Management*, 57-69, page 57.

rates. This promotes short-term exploitation of natural resources and destroys forests protection programmes and projects.

Furthermore, loggers leave roads that allow hunters and gathers to gain access into the forest. This severely degrades all what was left of the undergrowth, since gathers will prune all the newly grown small trees. This reduces the number of species that can survive in logged forests. Logged forests also have a lot of dry wood on the forest floor and are prone to wildfires.

However, it is clear that international aid and lending institutions have to be strict on logging projects which they seem to support and accept. Further, many solutions to reduce deforestation will have to address the impacts of poverty, poor forest governance, effective monitoring in forests, promotion of education in developing countries, encourage forest protection and limit illegal logging projects that are unregulated through the use of forest officers to patrol daily around forests.²⁸⁷

There is a need for greater commitment from developed countries to increase forest protection and conservation programmes. This can start by improving the process of forest certification and increasing the transparency of logging projects given to different individuals and companies. A transparent system will allow the public to see the issues which they need to voice concern about and thereby improve public participation. Public participation and transparency of logging tenders often reduces corruption.²⁸⁸

For forests to be effectively protected there is a need for national governments to communicate with their districts and solve legislative discrepancies from the decentralisation process. They must also work together for effective good forest governance and environmental law enforcement. Further, the government should also pay the forest rangers who are involved in the protection and management of forest resources in order to avoid corruption and bribery.

However, protected areas have played an important part in restricting deforestation and it is a well-known governmental policy tool. It restricts illegal logging activities in areas that have been protected. Most forests under protected areas are usually expensive to safeguard and

²⁸⁷ See Cashore B, Leipold S and Cerutti O P, 'Global Governance Approaches to Addressing Illegal Logging: Uptake and Lessons Learnt', in Kleinschmit D, Mansourian S, Wildburger C, Purret A (eds), *Illegal Logging and Related Timber Trade – Dimensions, Drivers, Impacts and Responses*. A Global Scientific Rapid Response Assessment Report, *IUFRO World Series*, Volume 35 (2016), 119-130, page 119-24. See website on <http://www.iufro.org/science/gfep/illegal-timber-trade-rapid-response/report/>. Accessed 22 December 2016.

²⁸⁸ Ibid.

manage. Nevertheless, communities near forests can create forest groups or rangers that manage these forests and protect them from companies under their traditional leaders. This solution is more practical and less expensive to protect forests.

Forests in developing countries are seen as non-valuable, because they are said to produce short-term financial gains. Countries do not appear mindful or knowledgeable of the fact that forests have global benefits such as mitigating climate change and carbon storage as shown in the preceding Chapter. Some countries may know, but they are not ready to pay the costs. If a natural resource is important for the planet, why one single country should bear the costs of protecting it alone? Moreover, in these countries, there is a lack of or weak enforcement of environmental laws and illegal logging has increased the market value of wood and timber. Illegal logging has become a huge policy issue internationally, with some States recognising that it raises rents for private forests, since it avoids licences and royalties.²⁸⁹

The problem that seems to hinder efforts that have been put in place to reduce deforestation are numerous. There has been a poor practice in forest governance and ineffective obligations for forest protection. Furthermore, permits or licences are usually given to the agricultural, industrial and mining sectors to clear forest lands. Forest protection laws have been seen as flawed, and hinder progress and the economic development of developing countries. Thus, illegal logging has become a welcomed and acceptable practice.

Most legal loggers have complained that the government gave them short-term concessions and insecure property rights, so they have had to clear nearly everything in their way before their contracts expired. In addition, the main problem that increases illegal logging is corruption. Corruption allows illegal logging to occur since private companies often make illegal payments to governments, magistrates and military personnel to be released from jail once they are caught. The bribing of forest police officials in developing countries has also become a code of practice. Private companies also pay governments to attain logging licences with extended periods or larger timber clearing quotas.²⁹⁰

²⁸⁹ Stahl J, 'The Rents of Illegal Logging: The Mechanisms behind the Rush on Forest Resources in Southeast Albania', (2010) 8, *Conservation and Society*, [cited 2020 Feb 24], pages 140-50. Available from: See website <http://www.conservationandsociety.org/text.asp?2010/8/2/140/68916>. Accessed March 4, 2020.

²⁹⁰ See website on <http://www.fao.org/3/X6967E/x6967e05.htm>. Accessed on 16 January 2021.

In addition, the environmental laws in developing countries lack clarity and it may be unclear or difficult to establish who has authority over these legal logging procedures, whether municipal or provincial departments. This usually ends in conflicts and power struggles, and illegal logging will continue to happen under these countries' government administrations. Moreover, there is a basic need for an instrument that will compare and evaluate environmental law theories and the empirical research that is being conducted internationally. This is because more clarity on the methods and concepts that can be used to conserve and protect natural forests is needed.

In short, the barriers to effective and good forest governance are usually governments; they do not like to improve forest laws (weak capacity and commitments by government to improve forest protection laws to reduce illegal logging). There is a lack of accountability on the municipal level and commitment usually due to fewer resources and staff; they have poorly defined land tenure rights; poor coordination and information sharing in governmental departments; inconsistent public policies; and shortage of land for investment. Besides corruption, public capture, and all the problems of ineffective public administration are also experienced.

Consequently, policies that aim to reduce illegal logging have been hampered by many problems facing developing countries. Most of the policies that have been set forward in the agricultural and mining sectors tend to impact on small scale loggers negatively, therefore they tend to undermine the compliance process. In addition, logistics in municipal areas and technical problems may lead to poor enforcement of policies, such as lack of vehicles and funds to employ forest rangers to patrol forest areas.

Furthermore, illegal logging is a problem that also has roots in organised crime around the world. Many corporations, state agencies, entrepreneurs and traditional criminals are involved in international illegal logging activities. However in order to reduce illegal logging, regional police and justice forces have to be established and co-operate, this can minimise the transportation of illegal forest goods and items.²⁹¹ There have been less criminal investigations,

²⁹¹ Boekhout van Solinge T, 'Organized Forest Crime: A Criminological Analysis with Suggestions from Timber Forensics', in Kleinschmit D, Mansourian S, Wildburger C, Purret A (eds), *Illegal Logging and Related Timber Trade – Dimensions, Drivers, Impacts and Responses*. A Global Scientific Rapid Response Assessment Report, *IUFRO World Series*, Volume 35 (2016), 81-94, page 88. See website on <http://www.iufro.org/science/gfep/illegal-timber-trade-rapid-response/report/>. Accessed 22 December 2016.

however there are signs that if properly investigated these can yield results under TRAFFIC and Interpol.²⁹² Thus, there is a need for more regional criminal investigations to minimise this type of transnational criminal offence and network.

There is a need for a cross-sectoral policy that will integrate the different sectors that have caused deforestation. This is because illegal logging is not only a problem within the forest sector, but other sectors have hampered efforts to reduce deforestation. Many instruments that are linked to forests are missing the drivers of illegal logging. International bodies and NGOs should promote more investigation and further research to gather comparable international data and try using different conservation methods and protection programmes.²⁹³

In brief, there is a need for political will; national legislations with stronger penalties; clarifying policies; decentralisation of national environmental legislations; municipalities should be given more authority, funds and staff; integrating environmental policies with customary law; supporting research; strengthening conservation institutions; environmental education; more protected areas; public awareness; environmental regional bilateral actions; and transparent wood product trade policies.²⁹⁴ Furthermore, regionally, information sharing needs to be improved; policies for trade; co-operating with one another to reduce deforestation; and improving research.²⁹⁵

12. Conclusion

In conclusion, agriculture, illegal logging, wildfire, weak institutions, trade liberalisation, urbanisation, population grown, market failures, and invasive species have been identified in this Chapter as common threats to forests. Substantial effort is needed to reduce deforestation and this must also focus on alleviating poverty. Many of the forests have been cleared because communities are looking for sources of income and earnings for their families. Forest

²⁹² Ibid, page 82-85. TRAFFIC. See website on <https://www.traffic.org/>. Accessed 03 August 2019.

²⁹³ See website <http://www.fao.org/3/w4345e/w4345e0a.htm>. Accessed on 16 January 2021.

²⁹⁴ See Kleinschmit D, Mansourian S and Wildburger C, 'Conclusions', in Kleinschmit D, Mansourian S, Wildburger C, Purret A (eds), *Illegal Logging and Related Timber Trade – Dimensions, Drivers, Impacts and Responses*. A Global Scientific Rapid Response Assessment Report, *IUFRO World Series*, Volume 35 (2016), page 130-136. See website on <http://www.iufro.org/science/gfep/illegal-timber-trade-rapid-response/report/>. Accessed 22 December 2016.

²⁹⁵ Ibid.

protection policies must also reduce deforestation without jeopardising efforts to reduce poverty in poor communities.

Further, traditional community conservation programmes should be integrated with policies that will improve forest protection. Government policies should also avoid being contradictory to incentives that promote forest protection and should improve the use of traditional conservation knowledge. Criminal sanctions in forest policies should be introduced to minimise the illegal cutting down of trees and trading of wood products.

These policies should integrate well-co-ordinated initiatives and build community ties that will improve SFM and increase community income. The use of REDD+ will make sure that land cover changes and social issues are resolved. Furthermore, the use of land zoning and proper town planning to reduce the effects of urbanisation should also be strategized in urban edges where deforestation continues to expand due to the increase of urban population. Moreso, forest protection must now integrate, economic benefits, protect threatened cultures, promote peace and poverty alleviation programmes.

Further, forest protection should aim at reducing adverse ecological and social effects deforestation has, while also including the economic value of forest products and taking forest functions into account. Forest research should not only provide the rates and impacts of deforestation, but exact information on the location of future deforestation and time anticipated for this to happen. This will be viable for the implementation of appropriate essential deforestation responses, these responses can be market incentives or practical solutions.

These areas with higher probability of clearing should be given priority attention and be protected through preventive action. However, the vision for forest protection should be to integrate development variables (for example rights, revenue, governance and capacity) into forest protection laws and conservation objectives. The application of institutional arrangements in governments and the municipal department can work towards the needed policy balance in forest protection. This alignment will be an important consideration of existing and potential roles of different governmental alliances for forest protection.

Further, many countries now use protected areas to protect forests. They now constitute key policy strategies in the conservation and protection of forests. In developing countries, they

have been central in forest governance and have brought a reduction in the deforestation rate in some countries. In addition, by providing the public or private sector with secure tenure and investment in the management of forests may reduce deforestation, thus resulting in greater transparency in the forest protection regulatory frameworks. There is a need to increase co-operation between different sectors, especially the agriculture and mining sectors must be regulated with environmental principles to reduce deforestation.²⁹⁶

Poorly defined land tenure rights have often been cited as a major cause of deforestation.²⁹⁷ This is because in order to be enrolled to the incentives for REDD+ programmes, there is a need for a clear land tenure and registration of individual ownership of forest land. Such information is never provided to poor communities, indigenous people, or forest populations. There is a need to educate such stakeholders about REDD+ incentives. These groups are usually excluded from programmes that can increase their management capacity. Since they have lived their entire lives with the forest and will continue to do so, there is a need to include these people into forest protection programmes.

This Payment of Environmental Services (PES) are incentives that reward sustainable and proper management land uses and forest protection programmes, and are provided under REDD+ and United Nations sponsored financial incentives.²⁹⁸ Nowadays, clearing forests for agriculture is now being mitigated by new technology; better farming practices, better management practices and information given by researchers. However, poor resources, corruption, inadequate skills and maladministration will always hamper forest protection. The poor communities with fewer resources (especially fertilizers) usually resort to clearing trees and burning them for fertiliser and manure through shifting cultivation. The problem in these areas has been clear, lack of investment and social grants from the government, yet programmes such as PES exist. These programmes are not being marketed well in developing countries and there is a lack of capacity building training offered by governments in developing countries.

²⁹⁶ Newton P, Agrawal A and Wollenberg L, 'Enhancing the sustainability of commodity supply chains in tropical forest and agricultural landscapes', 23 (2013), *Global Environmental Change*, 1761–1772, page 1765.

²⁹⁷ Ibid.

²⁹⁷ Ibid, page 1766.

²⁹⁸ REDD+ incentives are policies which governments experiencing high GHG emission are able to give funds to governments with low GHG emissions and reduce forest degradation and clearance.

The process of forest certification in developing countries has been made difficult by corrupt officials. This makes forest protection more difficult as certain individuals will always use illegal and unsustainable ways to harvest forest resources. In addition, as the world population grows and demand for resources increases, this position will also grow. These issues have been compounded by improved technologies in the agri-industrial production sectors which have meant that more forests will be cleared. Consequently, these massive financial investments in the agri-industry sector are coming from banks, multi-national companies and private households.

The economic side of the world seems to continue to play a huge part in destroying the environment due to social-ills and behavioural pressures. It also makes sense to try and educate forest users and support them, this seems to be an achievable goal and an open opportunity for environmental entrepreneurs to build protection and conservation capacity. To achieve broader success in reducing deforestation requires understanding of the social and economic traits and attributes of that particular country or region. Honest, education, culture, co-operation, integration, awareness and participation should be prerequisites to effective conservation actions.

The principles of environmental law have been explored under SFM for forest protection. This states that social, economic and environmental goals must be balanced and one must recognise the benefits of one another. Moreover, in order to reduce deforestation there is a need for a profound departure from a mass consumption society and to realise environmental goals through the change of human behaviour, cultures and environmental ethics.

In brief, there are many threats that lead to deforestation and forest degradation. To be precise, there is no particular and specific principle that will reduce deforestation. However, it seems efforts that are mixed with improving regulatory frameworks, engaging and co-operation with communities, public awareness, and building capacity, integrating policies and practical efforts such as the deployment of forest rangers and prosecuting environmental criminals will reduce deforestation. Nevertheless, the reason why these efforts continue to fail is because there is no instrument that recognises, cooperates and coordinates the issues-to-solutions in the forest protection regime and framework.

Forests need to be protected because they face many threats, all with a common feature, namely humans. Due to the growing interest in forests - whether for human survival or for “development” or for land use - forests are increasingly under siege. The most obvious and biggest threat leading to mass deforestation is currently from government and multinational corporations. This is due to the fact that the land which forests occupy is fertile.

Deforestation in such areas is carried out through mass forest fires, not only to destroy the fauna and flora but also to evict any persons living and conserving those areas. This phenomena is increasing in Brazil where parts of the Amazon are burnt to clear the land for farming purposes. Forests are also under threat from displaced persons who for various reasons are moved from their ordinary residences and have to make homes elsewhere with less resources - these people thus “fight” for survival with and against forests which have the necessary resources to help with their survival. These people, like those who occupied land on the borders of the Mau Forest in Kenya, have been depleting the forest unintentionally as means for survival. For example, people use the forests for timber to build shelter and also contribute to deforestation by land clearance for farming purposes. The people in this situation have the best of intentions yet they are inadvertently destroying the forest upon which they depend for their survival. In addition, people can get angry and misunderstand when their governments protect the forests over their livelihoods as they become inadvertently displaced in the process and need resources to start life anew. This in itself may result in the destruction of other natural resources, if such resources have not been provided for in relocation

Further, forests are not only threatened by man-made forest fires they are also in danger of natural fires, which are a way of “controlling” the land mass which they occupy. These fires have become more prevalent due to invasive species and deforestation. Through deforestation, certain “defences” which the forests had to deal with fires become ineffective, while invasive species take up most of the nutrients in the soil making it harder for the diverse species to survive. Human development is a huge threat to forests unless we can learn to coexist with them, because looking at forests as something dangerous and taking up space is the reason that the species which inhabit the forest are killed as they are seen as a threat.

Capitalism is the biggest threat to forests because in our current model everything is valued in terms of money. It is not about the overall resource benefit when they are kept intact but rather about the current benefit from the resource exploitation. This is exactly how human capital is treated, it is about the current benefit of labour not the actual labour itself because all resources

are expendable. Developing countries and developing countries underestimate the fact that once forests are gone, it is not just the trees but also the different life forms from insects to birds, to rivers to reptiles that will also die due to loss of habitat.

Importantly, Chapter 4 explains the effects of deforestation. It is important to look at why forests should be protected since deforestation has detrimental effects on our health, other species and mitigating and adapting climate change induced-impacts on our planet.

Chapter 4: Effects of Deforestation

1. Introduction

We have seen the importance of natural forests, and how they are linked with the network of life of all species on earth. Life would change without forests, thus because of deforestation there is a need for a further analysis of the effects of deforestation. Human pressures on earth are causing an increase in species extinction, estimated to be more than before the industrial revolution. There are various consequences to deforestation and forest degradation, including that of life change globally. The most overt impact of deforestation are desertification, climate change and biodiversity loss. It must be noted that when these impacts of deforestation take effect, daily life on earth will eventually change.

Furthermore, some of the effects of climate change are unknown. However, scientific research has already discovered that these effects will mostly be negative and will change our normal way of life on earth as nature will have altered everything humanity already possesses and knows. Life on earth is interlinked and the survival of species depends on good fertile soil and a proper climate which is conducive for food growth and reproduction.²⁹⁹

2. Desertification

Desertification³⁰⁰ is the degradation of the terrestrial ecosystems by land-use changes by humans. These ecosystems will deteriorate and their productivity reduced in biomass and diversity of fauna and flora species. This is mainly due to soil deterioration caused by human land use changes in fragile ecosystems such as natural forests.³⁰¹ If these effects are not reduced or prevented, this can eventually lead to ecological degradation and desert-like conditions.³⁰² Desertification cannot be reversed and is driven by several connected factors, primarily triggered by an environment that is consumed by human pressure which results in land use

²⁹⁹ Youba Sokona, 'Agriculture in the IPCC's work', in (ed), Meybeck, A., Laval, E., Lévesque, R., Parent, G., 2018. *Food Security and Nutrition in the Age of Climate Change. Proceedings of the International Symposium organized by the Government of Québec in collaboration with FAO*. Québec City, September 24-27, 2017. Rome, FAO, pp 132. Licence: CC BY-NC-SA 3.0 IGO, page 9-10.

³⁰⁰ Warren A and Maizels J K, *Ecological change and desertification*, (1976), London, University College, page 1, stated that, 'Desertification is the development of desert like landscapes in areas which were once green. Its practical meaning is a sustained decline in the yield of useful crops from a dry area accompanying certain kinds of environmental change, both natural and induced'.

³⁰¹ Goudie S A, *The human impact on the natural environment: Past, present and future*, (2013), 7th Edition, John Wiley & Sons Ltd, United Kingdom, 1-406, page 46.

³⁰² Sabadell J E et al, *Desertification in the United States: Status and Issues*. Washington DC: Bureau of Land Management, Department of the Interior, (1982), page 7.

change of forest lands. It usually results from the over-use of fragile ecosystems through human pressure and land use changes.³⁰³

Desertification can be seen as climatic variations, moisture deficiency, and loss of water processes (evapotranspiration mainly). In 1994, the United Nations³⁰⁴ recognised that deforestation, land use and urban development were the major causes of desertification. They also recognised two different aspects of desertification that need to be addressed, namely natural change, variations in the physical and biological components, the eventuality through time and their spatial diversity; and the environmental problems that stem out of desertification affecting different species. Desertification affects an estimated two-thirds of countries internationally and about one-third of earth's surface, therefore threatening the well-being and economic development of at least one billion people.³⁰⁵

Deforestation affects the water and heat exchange budget off the surface of earth. If deforestation increases, desertification and climate change becomes a greater possibility leading to biodiversity loss. The evapotranspiration reduces temperatures, and the trees provide shade which maintains temperature to a minimum and cools the lower surface of the forests and earth. In addition, desertification causes animals to migrate from one area to another searching for greener pastures and water, or to die of starvation. According to the Millennium Ecosystem Assessment³⁰⁶ in the 2005 report, about 15 per cent of land is already degraded and ongoing deforestation is threatening ecosystems and the services which they provide. Desertification is therefore seen as one of the greatest current environmental changes that have difficult consequences to terrestrial species.³⁰⁷

The causes of desertification range from direct land use changes, wildfires, over-cultivation, poor management of irrigation systems, illegal logging, infrastructure such as roads and dams,

³⁰³ Williams M, 'The role of deforestation in Earth and World-System Integration', in Hornborg A, McNeill R J and Martinez-Alier J (eds), *Rethinking environmental history: World-System history and global environmental change*, (2006), 101-122, page 119.

³⁰⁴ See note 51. United Nations Convention to Combat Desertification. See website <http://www2.unccd.int/>. Accessed on 17 April 2017. UNCCD, United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa; UN: Paris, France, (1994).

³⁰⁵ Wang Y and Yan X, 'Climate change induced by Southern Hemisphere desertification', *Physics and Chemistry of the Earth*, (2016). See website <http://dx.doi.org/10.1016/j.pce.2016.03.009>, 1-8, page 1.

³⁰⁶ *Ecosystems and Human Well-being: Current State and Trends*, Volume 1 (2005), Hassan R, Scholes R and Ash N (eds). Link to the report website, <http://www.millenniumassessment.org/en/Condition.html>. Accessed 12 February 2017.

³⁰⁷ See note 93. See website <http://www.millenniumassessment.org/en/index.html>. Accessed 12 February 2017.

population growth, and poor government policies to protect forest lands.³⁰⁸ The soil's physical structure is affected due to desertification; there is a decline in the soil structure, increased soil erosion, increased flooding and salinization, decreased vegetation cover, biological diversity loss, migration and increase of poverty. Desertification is usually irreversible and not many plants and animals can survive under those conditions. Furthermore, forest fragmentation decreases the evapotranspiration and increases the chances of high albedo. As a result, temperatures tend to increase and climates of given regions eventually change.³⁰⁹

As above, the biogeophysical consequences of desertification are usually high albedo. This increases the heat and energy momentum balances in the atmosphere and on the land surface. This normally changes the climate in many desert affected areas causing the temperatures to increase. This is a first warning change of environmental conditions which alludes to desertification. It also decreases the soil-holding capacity for water and nutrients.

Desertification results in loss of ecosystem services and products, thus reducing biological productivity due to several causes of soil erosion, loss of vegetation due to loss of soil fertility and a change in specie variability.³¹⁰ Soil erosion becomes a problem after deforestation because trees in a forest hold the soil together, maintain water resources and reduce the prolonged effects of biodiversity loss, desertification and climate change. Deforestation makes it possible for soil to be eroded through wind, snow, animals and water. This is also detrimental for plant and animal species that might require good fertile soil for growth and feeding.

Plants require good soil to grow, there is thus a need to conserve and protect soil from erosion. Good soil sustains life for many species on earth since it delivers many ecosystem services.³¹¹ Soil is responsible for the essential production of many raw materials and food products.³¹² Further, biological communities need good quality soil to grow and feed, and also soil provides

³⁰⁸ Williams M, 'Deforestation: General debates explored through local studies', (2000) 2, *Progress in Environmental Science*, 229-251, page 233.

³⁰⁹ Alkama R and Cescatti A, 'Biophysical climate impacts of recent changes in global forest cover', 352 (2016), *Science*, 600-604, page 602-4.

³¹⁰ Safriel U and Adeel Z, 'Dryland systems', in Hassan R, Scholes J R and Ash N (eds), *Ecosystems and human well-being: Current state and trends*, Vol 1 (2005), London: Island Press, page 917.

³¹¹ Were K *et al*, 'A comparative assessment of support vector regression, artificial neural networks, and random forests for predicting and mapping soil organic carbon stocks across an Afromontane landscape', 52 (2015), *Ecological Indicators*, 394-403, page 394.

³¹² *Ibid*.

environmental services. However, these services have been affected by ecosystem degradation and transformation imposed by human activities.³¹³

Deforestation exposes the undergrowth in forests to direct sunlight, this causes some of the plants to wilt, lose their leaves and eventually die. After the wilting and drying of the undergrowth plants, water, wind and animals can now cause soil erosion since the soil has been left exposed. If the top soil with manure is eroded and water continues to run-off on the land surface, this causes mineral nutrients and small growing vegetation to be washed away.

Furthermore, the soil loses its fertility thereafter and it becomes bare without vegetation. If these conditions are not corrected by reforestation and afforestation, there will be loss of plant species and small animals. In addition, the animals in that environment will be left without grazing lands; and the soil, nutrients and dead plants will have been carried off to lakes, dams and rivers. This will cause the rivers and water resources to flood and dry up quickly. This also affects water species such as fish and frogs.

Erosion leads to fine soil particles being blown off and a sandy texture of soil quality being left behind. Fine soil particles usually have the nutrients and the sandy soil that is left does not have sufficient nutrients for plant growth. Sandy soil does not have the same porosity, water infiltration rate, storage and nutrient availability as fine soil. Therefore plants cannot grow in these areas because there are no nutrients in sandy soil. Due to this, the soil fertility and the soil cover decreases, thus the species diversity is reduced. Consequently, soil erosion is seen as one of the most important negative effects of desertification since it has detrimental impact on plants and animals.³¹⁴

Soil is an integral part of many ecosystems and plays an important part in forest regeneration. Healthy and fertile soil is important for all ecosystems because that is where trees and crops grow, and nutrients are recycled. Litter on the forest ground also controls carbon decomposition and keeps the land moist.³¹⁵ Thus, soil erosion will result in nutrients being washed off causing

³¹³ Santibáñez-Andrade G *et al*, 'Structural equation modelling as a tool to develop conservation strategies using environmental indicators: The case of the forests of the Magdalena river basin in Mexico City', 54 (2015), *Ecological Indicators*, 124–136, page 124.

³¹⁴ Vanmaercke M *et al*, 'Sediment yield as a desertification risk indicator', 409 (2011), *Science of the Total Environment*, 1715–1725, page 1715.

³¹⁵ Santa R, 'Litter fall, decomposition and nutrient release in three semi-arid forests of the Duero basin, Spain', 74 (2001), *Forestry*, 347–358, page 347-8.

river siltation. This leads to loss of the fertile structure of soil, disturbance of the nutrient cycle, and reduction in biomass nutrient stocks causing poor growth of plants.³¹⁶

Eventually, without restoration of this environment, the soil becomes infertile and less productive. The water resources will also dry up causing water shortages. Consequently, lack of vegetation and water resources will result in the hydrological cycle changing to that of lesser rainfall. This result in dry conditions and lack of rainfall immediately defined as periodical droughts. After a while, the area or region enters the first stage of desertification, that of a fragile ecosystem with a need for restoration.

Deforestation usually impacts soil in several ways which include reducing organic nitrogen, exchangeable potassium and carbon.³¹⁷ It also reduces the ion exchange capacity of the soil and nutrients such as iron, chlorine, phosphorus, calcium, magnesium, potassium and nitrogen.³¹⁸ The loss of these nutrients into the river will be detrimental for crop cultivation and for river species which need clean and safe water for survival.

However, forests can stabilise soil by reducing erosion, water loss, and maintaining nutrient cycle.³¹⁹ Tree roots bring nutrients from underground for the undergrowth growing on the forest floor, and the falling tree leaves also provide manure and fertiliser for these plants and food for animals. The amount of trees and their size will reduce soil erosion because of the roots that keep soil compact. Further, the falling leaves providing manure allow for regeneration which aids the restoration of trees and plants. Thus, desertification affects the surface features and biology of grassland soils in many regions.

Deforestation also threatens aquatic biodiversity and its ecosystem services. Many forests around the world offer water supply and quality ecosystem services.³²⁰ High elevation forests

³¹⁶ Kurz C, Couteaux M M and Thiery J M, 'Residence time and decomposition rate of *Pinus pinaster* needles in a forest floor from direct field measurement under a Mediterranean climate', 3 (2000), *Soil Biology Biochemistry*, 1197–1206, page 1197-8.

³¹⁷ Fu B *et al*, 'Comparing the soil quality changes of different land uses determined by two quantitative methods', 15 (2) (2003), *Journal of Environmental Sciences*, 167–172, page 167.

³¹⁸ Bormann F *et al*, 'Loss accelerated by clear-cutting of a forest ecosystem', 159 (1968), *Science*, 882–884, page 882-3.

³¹⁹ Zhou H U, Yizhong L V and Baoguo L I, 'Advancement in the study on quantification of soil structure', 46 (2009), *Acta Pedologica Sinica*, 502–505, page 502-3.

³²⁰ Bruijnzeel L A, 'Hydrological functions of tropical forests: Not seeing the soil for the trees?', 104 (2004), *Agriculture Ecosystems and Environment*, 185–228, page 185-6. Also see Grip H, Fritsch M J and Bruijnzeel L A, 'Soil and water impacts during forest conversion and stabilisation to new land use', in Bonnell M and Bruijnzeel L A (eds). *Forests, water and people in the humid tropics: Past present and future hydrological research for integrated land and water management*, (2005), Cambridge University Press, UK, 561-589, pages 561-4.

usually collect saturated fog moisture from the atmosphere maintaining the soil dampness for plant growth. This also reduces water evaporation ensuring that streams have abundance and constant flow of water throughout the year.³²¹ These forests also filter pollutants and debris that can flow into the water through the slopes.³²²

Trees absorb water deep down using their roots and transpire the water for conventional rainfall. Deforestation will affect the likelihood of regions receiving rainfall. Deforestation also causes decrease in cloudiness by reducing evapotranspiration, reducing cloud formation and cover; this can also modify conventional rainfall and changes in wind speeds and atmospheric moisture. However, it must be noted that the hydrological system that can be affected by desertification is important for food availability, maintaining water quality and water supply throughout the dry season.³²³

The effects of desertification may vary however; the well-known ones are land degradation, soil erosion, change of climate, waterlogging, flooding, persistent droughts and decline of many species in a particular area or region. Desertification results in the loss of land productivity; this might be severe to a point where humans have to migrate to other places. Consequently, desertification is seen as change in soil properties, climate or vegetation in an eventual and persistent way that loses ecosystem services that are essential to sustaining life.³²⁴

Desertification will change the physical, chemical and biological characterise of natural forests. Ecologically, desertification has caused loss of species diversity in many countries. Moreover, desertification causes degradation of terrestrial ecosystems - this is a primary environmental problem because this affects the sustainable development of many countries and regions. Desertification directly affects the agricultural, industrial and healthy sectors of any country. Further, it can also threaten the sustainability of social and economic development of many

³²¹ Postel S L and Thompson B H, 'Watershed protection: Capturing the benefits of nature's water supply services', 29 (2005), *Natural Resources Forum*, 98–108, page 99.

³²² Peterjohn W T and Correl D L, 'Nutrient dynamics in an agricultural watershed: Observations of role of riparian forest', 65 (1984), *Ecology*, 1466–1475, page 1466-7.

³²³ Farley K A, Jobbagy E G and Jackson R B, 'Effects of afforestation on water yield: A global synthesis with implications for policy', 11 (10) (2005), *Global Change Biology*, 1565–1576, page 1565-6.

³²⁴ D'Odorico P *et al*, 'Global desertification: Drivers and feedbacks', 51 (2013), *Advances in Water Resources*, 326–344, page 326. Also see United Nations (1994). Elaboration of an international convention to combat desertification in countries experiencing serious drought and/or desertification, particularly in Africa. Final text of the Convention. See website www.unccd.int/convention/text/pdf/conv-eng.pdf. Accessed 07 July 7, 2020.

countries.³²⁵ Desertification will worsen the cultural life of any community if left to take its full effects. It can also cause the widespread failure in crop production resulting in high inflation of food prices and the falling of a country's economy. It increases the likelihood of people having to migrate from their communities because of crop failure and death of animals in desert regions.

In addition, poor agricultural produce will cause food shortages, which usually causes social unrest, migration and political strife. Migration always causes social tensions, because towns and cities with resources will experience increased demand and the influx of people with their animals. This will also cause an increased demand of resources in isolated areas receiving migrants from desert-affected areas. These impacts on the life of many people who need food, increasing food prices, squatting and house prices. This results in panic and the likelihood of increased poverty within a few years.

Eventually, this can result in civil wars, and further migration and social unrest in that country or region. Due to migration, the work force and resources are reduced; this increases the economic and cultural gap between different ethnicities in the same country or region. This results in the loss of a country's political and socioeconomic stability. Furthermore, these countries experiencing desertification are potentially cut off from transport and lack of communication due to sand storms or floods. Thus, living conditions become harder and the education levels continue to decrease.

Desertification is caused mainly by deforestation and change of forest land into other human uses. There is surely a link between deforestation and desertification. The international community has therefore promulgated UNCCD which is meant to reduce desertification. The international instrument makes certain references to forest protection. Therefore in the next chapter the link between international forest law and desertification will be analysed and investigated thoroughly. There are other instruments in the conservation of biodiversity that have been promulgated to try and protect forests for the conservation of biodiversity in their natural habitats.

3. Biodiversity loss

³²⁵ Ibid, page 326-8.

Biodiversity has been defined as “the variability among living organisms from all sources including, among others, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems”.³²⁶ Terrestrial biodiversity loss in the world is driven mainly by the expansion of agriculture lands, illegal logging and wildfire which is mainly to sum up deforestation. Thus biodiversity loss is due to loss of their natural habitats which is mainly caused by deforestation.³²⁷ Biodiversity consists of many species, a community, genetic makeup, landscape usually a forest land, and a process or function; which can also be a forest ecosystem.³²⁸

Furthermore, price-driven land, fuel-wood and also food speculation can also increase the demand for land and deforestation.³²⁹ This has resulted in habitat alteration, loss and fragmentation, overexploitation of species, forest degradation and deforestation, and the introduction of invasive species. In addition, about 12 per cent of plant species and 55 per cent of animal species are now threatened with extinction.³³⁰

One of the major reports on the functions of ecosystems was the Millennium Ecosystem Assessment³³¹ (MEA, 2005); it stated that there are interactions of ecosystems globally, such that a forest ecosystem interacting with the hydrological cycle can affect the regulation of the earth as whole or other ecosystems. A critical biome that suffers major changes, for example deforestation, these effects can be profound causing long-distance interactions of earth processes, which might include precipitation, chemical and biological changes, winds and ocean circulations.³³²

Deforestation causes forest fragmentation, decrease in the size of habitats; increased isolation of animals; and increased chances of extinction, change in species dynamics and inhibits seed

³²⁶ See note 40. CBD, Article 2.

³²⁷ Eisner R, Seabrook M L and McAlpine A C, ‘Are changes in global oil production influencing the rate of deforestation and biodiversity loss?’, 196 (2016), *Biological Conservation*, 147–155, page 147.

³²⁸ Sachs D J, *The age of sustainable development*, Columbia University Press, New York, (2015), page 447.

³²⁹ See note 327.

³³⁰ CBD Secretariat, (2010). Global biodiversity outlook 3. Montreal: Convention on Biological Diversity, page 24 and 26.

³³¹ Millennium Ecosystem Assessment. *Ecosystems and Human Wellbeing: Synthesis*. Washington, DC: Island Press 1-155, page 2. See website for report

<http://www.millenniumassessment.org/documents/document.356.aspx.pdf>. Accessed on 20 April 2017.

³³² Sachs D J, *The age of sustainable development*, Columbia University Press, New York, (2015), page 449.

dispersal.³³³ Fragmentation is a process which reduces continuous forests into several patches this eventually leads to environmental modifications.³³⁴ There is isolation of species of the same specie making it difficult for pollination and dispersion, thus changing specie modification sizes.³³⁵ This can also happen to animals, they can be separated making it difficult for them to breed and maintain their population. Moreover, habitat degradation upsets the population ability of species to environmental or natural selective pressures.³³⁶ This also reduces the genetic variability of species populations and affects their adaptiveness to an environment.³³⁷ In many areas affected by deforestation, this has led to species extinction.

In addition, loss of forest mega fauna has had severe impact on plant species and their regeneration, thus affecting forest resilience and the potential capacity of the forests and carbon storage.³³⁸ When forests are cleared, large primates, tigers, elephants and rhinoceros become the most vulnerable because they are preferred by hunters. These animals can become extinct or reduced in numbers. In addition, carbon storage in forests depends on the plant and animal species.³³⁹

Most herbivores and other small insects loose their food source when forests are cleared. The carnivores also suffer because they feed on the herbivores, this tempers with the forest food

³³³ Brook B W, Sodhi N S and Bradshaw C J A, 'Synergies among extinction drivers under global change', 23 (2008), *Trends in Ecology and Evolution*, 453-460, page 431. Also see Saunders D A, Hobbs R J and Margules C R, 'Biological consequences of ecosystem fragmentation: A review', 5 (1991), *Conservation Biology*, 18-32, page 19. Also see Sala O E *et al*, 'Global biodiversity scenarios for the year 2100', 287 (2000), *Science*, 1770-1774, page 1770.

³³⁴ Broadhurst L and Young A, 'Seeing the wood and the trees-predicting the future for fragmented plant populations in Australian landscapes', 55 (2007), *Australian Journal of Botany*, 250-260, page 250-1. Also see Young A G and Pickup M, 'Low S allele numbers limit mate availability, reduce seed set and skew fitness in small populations of a self-incompatible plant', 47 (2010), *Journal of Applied Ecology*, 541-548, page 541-2.

³³⁵ Moreira P A, Fernandes G W and Collevatti R G, 'Fragmentation and spatial genetic structure in *Tabebuia ochracea* (Bignoniaceae) a seasonally dry Neotropical tree', 258 (2009), *Forest Ecology and Management*, 2690-2695, page 2691.

³³⁶ Hamrick J, 'Pollen and seed movement in disturbed tropical land-scapes', in DeWoody A J *et al* (eds), *Molecular approaches in natural resource conservation and management*, New York: Cambridge University Press, (2010), 190-211, pages 190-2.

³³⁷ Lowe A D *et al*, 'Genetic resource impacts of habitat loss and degradation; reconciling empirical evidence and predicted theory for neotropical trees', 95 (2005), *Heredity*, 255-273, page 255-6. Also see Willi Y, Van Buskirk J and Hoffmann A A, 'Limits to the adaptive potential of small populations', 37 (2006), *Annual Review of Ecology, Evolution, and Systematics*, 433-458, page 433.

³³⁸ Bunker D E *et al*, 'Species loss and above ground carbon storage in a tropical forest', 310 (2005), *Science*, 1029-1031, page 1029. Also see Cardinale B J *et al*, 'Biodiversity loss and its impact on humanity', 486 (2012), *Nature*, 59-67, pages 59 and 60.

³³⁹ Wright S J, Hernández A and Condit R, 'The bushmeat harvest alters seedling banks by favoring lianas, large seeds, and seeds dispersed by bats, birds, and wind', 39 (2007), *Biotropica*, 363-371, page 363.

chain. It must be noted that about 80 per cent documented species around the world are found in the tropical rainforest, thus continued runaway deforestation poses a threat to biodiversity.

Furthermore, habitat loss will cause a decrease in biodiversity population abundance, species richness, genetic diversity and loss of bigger sized species.³⁴⁰ However, it should be stated that the physical environment of an ecosystem determines the richness in species and distribution. Therefore, there is a need to understand the relationship between land use and biodiversity protection which is key to regional and national plans to forest protection.³⁴¹

Forests are important because they create a myriad of community types and mosaics for refuge habitats, which contain a mixture of plants and animals. Furthermore, the loss of biodiversity threatens many fields negatively. The negative effects are further seen in the tourism industry. The destruction of genetic resources has greater effects to the medicine field, cultural significance and agricultural productivity. Biodiversity makes a worthy source of food products and pharmaceuticals for medicines.

The economic loss should be worth billions of United States American dollars. Most poor communities rely solely on forest services and products, thus the effects will be severely disproportional because they depend on forest ecosystems for livelihood security. In addition, forest biodiversity importance includes food security through nutritional balance, employment for income cash, religious and cultural practices, traditional medicine and drug development.

Forests are well-known habitats for biodiversity. Biodiversity variability is important in an ecosystem and for providing goods or services. Many of these ecosystem services are sensitive to biodiversity changes; therefore loss of biodiversity can be loss of many ecosystem services and products. There is a clear relationship between forest loss and ecosystems to habitat disturbance, nutrient cycling, and ecosystem productivity.³⁴² In meta-analysis biodiversity has been seen as vastly important and with functions to cycle nutrients, control erosion, regulation of biodiversity, ecosystem stability and resistance. Thus the ability of forests to recover from

³⁴⁰ Best L B, Bergin T M, Freemark K E, 'Influence of landscape composition on bird use of row crop fields', 65 (2001), *Journal of Wildlife Management*, 442–449, page 442. Also see Fahrig L, 'Effects of habitat fragmentation on biodiversity', 34 (2003), *Annual Review of Ecology, Evolution and Systematics*, 487–515, page 487-488.

³⁴¹ Pianka E R, 'Latitudinal gradients in species diversity', 100 (1996), *The American Naturalist*, 33-46, page 34. Also see MacArthur R H, 'Environmental factors affecting bird species diversity', 98 (1964), *The American Naturalist*, 387-398, page 387.

³⁴² Brockerhoff G E *et al*, 'Role of eucalypt and other planted forests in biodiversity conservation and the provision of biodiversity-related ecosystem services', 301 (2013), *Forest Ecology and Management*, 43–50, page 44.

degradation activities, resilience and being resistant to land use changes depends on the biodiversity and genetic make-up of that landscape scales.

Tree microhabitats are important as they are key habitat elements and important for birds, bats and insects. These habitats are important for promoting biological diversity sustainability in forest ecosystems. Proper forest protection and management improves biodiversity conservation.³⁴³ Consequently, a negative consequence such as deforestation affects many species. This will also affect the quality of life of humans since human well-being is closely interconnected to biodiversity.³⁴⁴

The nature of forests usually depends on the ecological characteristics of the sites, diversity of the species present, and how tree species can regenerate. Further, tree species and diversity is fundamental for conservation of biodiversity, since forests provide resources and habitat for many species. A variance of forests is important for specie richness and fundamentally for all biodiversity. Trees are also responsible for the physical structure of all habitats. They are important as structural complexity and also environmental heterogeneity for all species. Biodiversity is also linked to the multiple physical, chemical and biological effects of the soil.³⁴⁵

In addition, biodiversity has a direct economic value and its protection yields economic and ecological services.³⁴⁶ These services include carbon sequestration, soil and water protection, hydrological cycle, biodegradation of waste, sustaining the circulation of carbon, water, nitrogen and oxygen. However, biodiversity loss can lead to all these services being reduced, extinction of species, overexploitation of other species, pollution of soil and water, habitat loss, alteration and ecosystem fragmentation. Many rural communities are dependent on forest biodiversity and their relationship is a multiplex one.

³⁴³ Putz F E *et al*, 'Biodiversity Conservation in the Context of Tropical Forest Management', Paper No. 75 (2000). Biodiversity Series–Impact studies. World Bank Environment Department Papers, The World Bank, Washington, DC, USA, 1-167, pages 19 and 21. See website on <http://documents.worldbank.org/curated/en/581391468779985927/pdf/multi-page.pdf>. Accessed 20 February 2017.

³⁴⁴ Cardinale B J *et al*, 'Biodiversity loss and its impact on humanity', 486 (2012), *Nature*, 59–67, page 60.

³⁴⁵ Lavelle P *et al*, 'Unsustainable landscapes of deforested Amazonia: An analysis of the relationships among landscapes and the social, economic and environmental profiles of farms at different ages following deforestation', 40 (2016), *Global Environmental Change*, 137–155, page 139.

³⁴⁶ Lubchenco J, 'Entering the century of the environment: A new social contract for science', 279 (1998), *Science*, 491-497, page 492.

Deforestation is also a threat to inland water species as these are affected by flooding, siltation, and soil erosion and water weeds.³⁴⁷ Land use change has caused change in the hydrology cycle, water warming, nutrient enrichment in water sources and increased sediment load.³⁴⁸ These impacts will then threaten aquatic biodiversity and inland water ecosystem services. This may also affect fish stocks, water birds, turtles and frogs which live in water sources or feed off small water species.³⁴⁹ There is a need for uncovering the effects of deforestation on inland water species and the development of optimum management strategies to reduce deforestation. Furthermore, inland fisheries are a source of food for many animals that rely on water for survival.³⁵⁰

Arthropods are the most dominant fauna group in many forests and they play vital roles in ecosystem functioning.³⁵¹ Ants and arthropods occupy an important group of animals that play a crucial part in the soil health, energy flow, nutrient cycling, herbivory and seed dispersal.³⁵² Many ecosystems are dependent on these species which usually live in sensitive environments, and are affected by deforestation. Furthermore, for species to survive there is a need for trees to have a regeneration potential - which is the ability of all species to bring life on earth and complete the life cycle. This allows the existence of species in any given community and under varied environmental conditions.

Deforestation which leads to the destruction of these natural ecosystems services also increases poverty in poor communities.³⁵³ Deforestation increases soil salinization, water logging, habitat loss, and reduces tourism-related employment. This biodiversity loss has resulted in the Global Biodiversity Outlook (CBD 2010) asserting that “[w]ell-targeted policies focusing on

³⁴⁷ Sala O E *et al*, ‘Global biodiversity scenarios for the year 2100’, 287 (2000), *Science*, 1770–1774, page 1771.

See also Strayer D L and Dudgeon D, ‘Freshwater biodiversity conservation: Recent progress and future challenges’, 29 (2010), *Journal of North American Benthological Society*, 344–358, page 344.

³⁴⁸ Collen B *et al*, ‘Global patterns of freshwater species diversity, threat and endemism’, 23 (2014), *Global Ecology and Biogeography*, 40–51, page 40-1. Also see Woodward C *et al*, ‘The hydrological legacy of deforestation on global wetlands’, 346 (2014), *Science*, 844–847, page 844.

³⁴⁹ WWAP, 2015. The United Nations World Water Development Report 2015: Water for a Sustainable World. UNESCO, Paris, page 14 of Chapter 1. See website on <http://unesdoc.unesco.org/images/0023/002318/231823E.pdf>. Accessed 24 March 2017.

³⁵⁰ Fugère V *et al*, ‘Impacts of forest loss on inland waters: Identifying critical research zones based on deforestation rates, aquatic ecosystem services, and past research effort’, 201 (2016), *Biological Conservation*, 277–283, page 277-78.

³⁵¹ Hamilton A J *et al*, ‘Quantifying uncertainty in estimation of tropical arthropod species richness’, 176 (2010), *The American Naturalist*, 90–95, page 90-1.

³⁵² Andersen A N and Majer J D, ‘Ants show the way down under: Invertebrates as bio-indicators in land management’, 2 (2004), *Frontiers in Ecology and the Environment*, 291–298, page 291.

³⁵³ Rajvanshi A and Arora R, ‘Mainstreaming biodiversity and gender in impact assessment for human well-being’, 11 (1-2) (2010), *Biodiversity*, 25-30, page 25.

*critical areas, species and ecosystem services are essential to avoid the most dangerous impacts on people and societies. Preventing further human-induced biodiversity loss for the near term future will be extremely challenging, but biodiversity loss may be halted and in some aspects reversed in the longer term, if urgent, concerted and effective action is initiated now in support of an agreed long-term vision”.*³⁵⁴

There is a need for significant expansion of protected areas, reduction of deforestation, the improvement of sustainable agricultural practises, a change in meat consumption behaviour, and the reduction of post-harvest losses. In order to reduce biodiversity loss, there is a need to protect forests. The increase of protected national parks and nature conservation areas will also add value to this goal. There is a need to develop biodiversity networks which can incorporate the old and new protected areas, and educational programmes and awareness for community members on the value of biodiversity. It is estimated that dietary changes, specifically reducing the meat consumption, will nearly reduce loss of mean species abundance of about 50 per cent by 2050, and expansion of protected areas to 20 per cent will reduce to about 10 per cent in the same year.³⁵⁵

Further, buffer zones can be set up with parameters and multiple use management areas that reduce ecotourism in fragile ecosystems and sensitive areas. However, the most effective way to ensure biodiversity conservation is to protect forests since they are habitats and to strengthen the legal environmental framework on forest protection. It will also be viable to integrate research programmes, conservation and educational activities across areas or regions.

Climate change and biodiversity are interlinked in a way that climatic changes cause a decline in biodiversity. Consequently, biodiversity changes can affect and increase the changes of climate change.³⁵⁶ Furthermore, biodiversity is also known as a source of different ecosystem services, including climate change mitigation regulation that is important for animal and plant societies.³⁵⁷

³⁵⁴ Secretariat of the Convention on Biological Diversity, (2010), Global Biodiversity Outlook 3. Montréal, 1-94, page 9 and 10 and 71-5, See website on <https://www.cbd.int/doc/publications/gbo/gbo3-final-en.pdf>. Accessed on 13 March 2017.

³⁵⁵ Pattberg P and Dellas E, ‘Assessing the political feasibility of global options to reduce biodiversity loss’, Volume 9, Number 4, (2013), *International Journal of Biodiversity Science, Ecosystem Services & Management*, 347-363, page 348.

³⁵⁶ See note 353, page 26.

³⁵⁷ Anderson-Teixeira K J *et al*, ‘Climate-regulation services of natural and agricultural eco-regions of the Americas’, 2 (2012), *Nature Climate Change*, 177–181, page 177.

The international community has recognised the importance of forest biodiversity and ecosystem functions, and has tried to protect forest biodiversity through multiple multilateral agreements. The Aichi Biodiversity Target 5 states that deforestation needs to be reduced and protect forest habitats, biodiversity and ecosystems; and Target 11 also emphasises on the protection and management of protected areas to become well connected ecosystems and represent the local population equitably.³⁵⁸ Moreover, in the next Chapter, a concrete analysis of the CBD will be conducted. Forests are specie habitats and are important in the protection, management and conservation of biodiversity.

4. Climate Change

Deforestation contributes to approximately 25 per cent of anthropogenic carbon emissions into the atmosphere and this plays a huge part in climate change.³⁵⁹ Deforestation from different causes leads to carbon emissions. If the wood biomass is burned during deforestation, more carbon and other gases are emitted³⁶⁰ and cause an increase of carbon in the atmosphere. Carbon is a well-known GHG and causes an increase of temperatures which results in climate changes.

Climate change causes extreme weather conditions which are harmful to plants and animals and forests are important for the mitigation of climate change. Climate change causes droughts, food insecurity, poverty, flooding, heat waves, and increases in diseases, migration, biodiversity loss and desertification. Importantly, the role of carbon sequestration is now globally recognised and the Kyoto Protocol recognises the mitigation role under its international policy arrangements and programmes.³⁶¹ In addition, forest soil is important since trees fix some of their carbon into the soil reducing carbon in the atmosphere.

Climate change is one of the significant concerns in human history, especially in land and resource management and has resulted in many countries building social-ecological capacities which are being used to address uncertain environmental changes. The UNFCCC, adopted in

³⁵⁸ See website <https://www.cbd.int/doc/strategic-plan/2011-2020/Aichi-Targets-EN.pdf>. Accessed 13 April 2017, 1-2, page 2.

³⁵⁹ Van der Werf G R *et al*, 'CO₂ emissions from forest loss', 2 (2009), *Nature Geoscience*, 737-738, page 739. See also Devaney L J, Redmond J J and O'Halloran J, 'Contemporary forest loss in Ireland; quantifying rare deforestation events in a fragmented forest landscape', 63 (2015), *Applied Geography*, 346-356, page 346.

³⁶⁰ Achard F *et al*, 'Estimating tropical deforestation from Earth observation data', 1 (2) (2010), *Carbon Management*, 271-287, page 271.

³⁶¹ Canadell J G and Raupach M R, 'Managing forests for climate change mitigation', 320 (5882) (2008), *Science*, 1456-1457, page 1456.

1992, entered into force in 1994 and its ultimate objectives are to reduce and prevent anthropogenic interference in the climate system of the earth. Its objective is to stabilise GHGs in the atmosphere to levels where species and ecosystems function and can adjust in ways that do not threaten sustainable development.

As it is clear from the international framework, climate change is important, and a significant issue to be considered when addressing the issue of forest protection.³⁶² However, it must be stated that future changes will increase the vulnerability and climate extremes from natural variability, anthropogenic climate change and also socio-economic development can potentially alter our natural and human systems.³⁶³

Climate hazards include warmer winter temperatures, heavy rainfall, and increased frequency of droughts. Many ecosystems will undergo changes, loss of more tree species, major shifts in tree composition in many countries and increase of insects infecting trees. Further, the agriculture sector will be severely affected by climate change hazards. This is because the summers will become warmer and hailstorms will destroy crops. Winters could also become warmer disturbing the planting, growing and harvesting seasons of crops and breeding patterns of animals.

Droughts will also become the future norm with limited or less rainfall than ever expected. There will be an ever increasing pressure on agriculture as plant diseases, insects and weed pressure increases; this will be mainly caused by the lack of water and drought. The heavily affected industries in the agricultural sector will be the fruit and vegetables and the dairy industry, this is mainly because fruits and vegetables require a certain amount of water; and diseases or weather conditions can easily affect them. In the dairy industry there is a need for greener pastures and adequate water supply to ensure the availability of the volume of water consumed by milk cows.³⁶⁴

In the energy sector there will be major changes in the cooling and heating overall degree daily, because of the severe effects that will change the hydrological cycle. The hydrological cycle

³⁶² Millar C I, Stephenson N L and Stephens S, 'Climate change and forests of the future: Managing in the face of uncertainty', 17 (2007), *Ecological Applications*, 2145–2151, pages 2145 and 2150.

³⁶³ Mori S A *et al*, 'Reframing ecosystem management in the era of climate change: Issues and knowledge from forests', 165 (2013), *Biological Conservation*, 115–127, page 115.

³⁶⁴ FAO. 2019. *Water use in livestock production systems and supply chains – Guidelines for assessment* (Version 1). Livestock Environmental Assessment and Performance (LEAP) Partnership. Rome, page 32-4. See website on <http://www.fao.org/3/ca5685en/ca5685en.pdf>. Accessed 16 January 2021.

will be affected and thus also the hydropower potential, flooding and declining stream flow. This will change the electricity generation, distribution and also transmission. The potential vulnerabilities will be energy supply impacts ranging from thermal electricity to natural gas. In other regions snow, increased cloud cover and rainfall will reduce the productiveness of solar panels, thus reducing the capacity of the energy sector from solar energy. Furthermore, transport will also be affected by snow, heat waves, hailstorms, flooding, wind speed, hurricanes and cyclones.

The telecommunications industry will be affected by extreme heat, waves, wind, flooding and storms. There will be communication outages caused by climate change hazards. Generally, extreme climate will affect the public health sector. Vector-borne diseases, respiratory diseases, infectious diseases will also increase further, with the floods bring different diseases.

The degradation of ecosystems will increase the changes of climate change. If there is sudden warmth in the Arctic and Antarctic regions the water levels will suddenly increase changing fundamental ocean circulations and submerging many islands. Due to increases in temperatures, the ice glaciers in the South and North Poles will melt quickly. Further, forest ecosystems will also undergo severe changes in structure, composition, formulation and species as climate change unfolds, according to the IPCC.³⁶⁵

Respectively, climate change alters ecosystem services.³⁶⁶ According to the IPCC in 2009, the increase in the average atmospheric temperature has detrimental effects on plants and animal species. The most affected organisms will be those which are range restricted, especially those that live on fragile ecosystems, geographically isolated and endemic species.³⁶⁷ Unknown changes in the climate system can be varied but the evidence and scientific research have already pointed to the worst of climatic changes to come. The changes in our atmosphere suggest that the climatic changes will be more detrimental than even expected.

³⁶⁵ Intergovernmental Panel on Climate Change. 'Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects', in Field C B *et al*, (eds), *Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, (2014), page 1132.

³⁶⁶ Van Mantgem P J *et al*, 'Widespread increase of tree mortality rates in the Western United States', 323 (2009), *Science*, 521–524, page 521.

³⁶⁷ Parmesan C, 'Ecological and evolutionary responses to recent climate change', 37 (2006), *The Annual Review of Ecology, Evolution, and Systematic*, 637–669, page 637.

Deforestation has affected forests transforming them from carbon sinks to carbon sources.³⁶⁸ Climate change can result in ecosystems being invaded by non-native species; viruses that are fatal to animals and extinction of key biota, this can impact on other ecosystem services.³⁶⁹

Other biodiversity ecosystems already threatened will be exposed to climate changes. All these adverse effects have huge impact on the socio-economic and ecological functions of forests, such as loss of income, food price increases and illness, and a rise in civil conflicts.³⁷⁰ The production of food, timber and fibre will become unstable which will lead to disruptions in the provision of services and benefits needed for human well-being. Furthermore, increased rainfall increases the reproduction of rodents which then cause respiratory illness in humans.

In addition, for many developing countries, forests are a net and a source of livelihood. They sustain human wellbeing for billions of people around the world.³⁷¹ Many communities depend of forest products such as food, medicine, fuel, house building materials, income and water.³⁷² Forests provide these subsistence products and reduce poverty.³⁷³ Most forest products are needed by communities who supplement their well-being and livelihoods during dry seasons with such resources when there is a shortfall of other products from the agricultural season.³⁷⁴

Many poor communities are restricted from access to resources, less integrated to the cash economy, have much lesser purchasing power, and are therefore more dependent on the natural ecosystem services.³⁷⁵ Poverty thus forces people to become reliant on the natural resources

³⁶⁸ Baldocchi D D, 'Breathing of the terrestrial biosphere, lessons learned from a global network of carbon dioxide flux measurement systems', 56 (2008), *Australian Journal of Botany*, 1–26, page 1.

³⁶⁹ Jiménez M A *et al*, 'Extreme climatic events change the dynamics and invasibility of semi-arid annual plant communities', 14 (2011), *Ecology Letters*, 1227–1235, page 1227.

³⁷⁰ Hsiang S M, Meng K C and Cane M A, 'Civil conflicts are associated with the global climate', 476 (2011), *Nature*, 438–441, page 438.

³⁷¹ Sunderlin W *et al*, 'Livelihoods, forests, and conservation in developing countries: An overview', 33 (2005), *World Development*, 1381–1402, page 1381.

³⁷² World Resources Institute (WRI) in collaboration with United Nations Development Programme, United Nations Environment Programme, and World Bank. 2005. *World Resources 2005: The Wealth of the Poor—Managing Ecosystems to Fight Poverty*. Washington, DC: WRI, 1-266, page 12-15. See website http://pdf.wri.org/wrr05_full_hires.pdf. Accessed on 20 March 2017.

³⁷³ World Bank, (2004). *Sustaining Forests: A development Strategy*. World Bank, Washington DC, 1-99, page 3. See website <http://siteresources.worldbank.org/INTFORESTS/Resources/SustainingForests.pdf>. Accessed on 17 April 2017.

³⁷⁴ Scherr S J, White A and Kaimowitz D, 'A New Agenda for Forest Conservation and Poverty Reduction: Making Markets Work for Low-income Producers', *Forest Trend*, (Washington DC), (2004), 1-99, pages 6 and 33. See website http://www.cifor.org/publications/pdf_files/Books/A%20New%20Agenda.pdf. Accessed 1 April 2017.

³⁷⁵ See note 353.

and their surroundings. Most forests in developing economies are owned by small communities who depend on forest resources for employment and other goods for consumption.

Moreover, in developing countries life would be difficult without these forest products and services as these communities would face hunger and strife during the dry season. Forests perform crucial roles in reducing vulnerability of the environment to degradation, thus playing and proving opportunity for adaptation and mitigation strategies to desertification, biodiversity loss and climate change.

Deforestation of forests around these communities will mean severe poverty, flooding, soil erosion, poor agricultural produce, loss of grazing lands, destruction of water resources, and loss of biodiversity. Deforestation and climate change will affect about 70-80 per cent of the developing countries, as many of their communities are reliant on forest services and products. Forest products are the resources which these communities need to improve their lives. Moreover, loss of biodiversity will have devastating consequences for these communities, many of whom will have to migrate to other areas which can cause conflict with other communities.

In short, the effects of climate change will be species extinctions, desertification, decrease in genetic diversity, decrease in agricultural commodities, pollution, rising cost of living, change in weather patterns, resistance of bacteria and inadequacy of water.³⁷⁶ In addition, climate change will drive and escalate conflicts which are already pressing other countries and regions. These might come in terms of climate change migration, civil war, intentional killing of civilians and terrorism. There will also be hostility towards civilians, retaliation to refugees and a financial crisis.³⁷⁷

Climate change will also affect the future forest conditions by changing forest services and processes. Climate change will eventually affect and disturb forests directly or indirectly.³⁷⁸ Nevertheless, several international instruments have been made to reduce carbon emissions from deforestation. The UNFCCC has been precise and clear that the international community

³⁷⁶ Cloke K, 'Symposium: Energy and the environment: Preventing and resolving conflicts: Conflict, Climate change, and environmental catastrophe: How mediators can help save the planet', 12 (2011), *Cardozo Journal of Conflict Resolution*, 307-325, page 309.

³⁷⁷ Ibid, page 310.

³⁷⁸ Dale H V *et al*, 'The interplay between climate change, forests, and disturbances', 262 (2000), *The Science of the Total Environment*, 201-204, page 201.

should try and reduce emissions from deforestation and forest degradation; and the REDD has been promoted to try and address or tackle this challenge. Furthermore, at COP-11 (2005) in Montreal, Canada, the UNFCCC started a process of investigating the technical issues around deforestation and reducing carbon emissions to mitigate climate change.

At COP-15 in Copenhagen the issue of using incentives to reduce deforestation was discussed to stimulate actions to reduce deforestation in developing countries.³⁷⁹ The Copenhagen Accord was agreed to by parties and it recognised the effects of carbon emissions from deforestation and forest degradation.³⁸⁰ It went further in stating that there was a need to enhance, reduce and remove GHG emissions by deforestation. In addition, it encourages establishment of mechanisms (including REDD+) that seek to contribute and mobilise financial resources for developed countries which protect their forests and reduce emissions.

The UNFCCC and Forest Stewardship Council (FSC)³⁸¹ will be looked at in greater depth in the next chapter. The UNFCCC seeks to (1) reduce emissions and forest degradation; (2) protect forest carbon stocks; (3) SFM; (4) enhancement of forest carbon stocks.³⁸² To highlight the issues of climate change other instruments have been bestowed including CITES, the Kyoto Protocol, the UNCCD and the Ramsar Convention.³⁸³

Furthermore, forests are also well known for their wood products and timber. Timber is used for construction of houses, bridges and furniture. These infrastructures have huge economic value therefore timber trading has huge potential for many countries' economies. The ITTA has been promulgated to regulate the trading and selling of timber around the world. The ITTA sees wood as a commodity that can be traded internationally but also recognising the goals of sustainable forest management and sustainable development. In addition, the CITES tries to

³⁷⁹ Targets and Actions under the Copenhagen Accord. See website <https://www.c2es.org/international/negotiations/cop-15/copenhagen-accord-targets>. Accessed 17 April 2017.

³⁸⁰ Fifteenth Session of the Conference of the Parties to the United Nations Framework Convention on Climate Change and Fifth Session of the Meeting of the Parties to the Kyoto Protocol, December 7-18, 2009 Copenhagen, Denmark. This summary was written by Elliot Diringer, Vice President for International Strategies, with contributions from International Fellows Kate Cecys and Namrata Patodia, and Daniel Bodansky of the University Of Georgia School Of Law. See website <https://www.c2es.org/international/negotiations/cop-15/summary>. Accessed 17 April 2017.

³⁸¹ Forest Stewardship Council. See website on <https://fsc.org/en>. Accessed on February 24, 2020.

³⁸² See note 45. UNFCCC, *Report of the Conference of the Parties on its sixteenth session, held in Cancun from 29 November to 10 December 2010, Decisions adopted by the Conference of the Parties*. Bonn: United Nations Framework Convention, (2011), paragraph 70, decision (1/16).

³⁸³ Pearce D W, 'Do we really care about biodiversity', in Kontoleon A, Pascual U and Swanson T (eds), *'Biodiversity Economics'*, (2007), Cambridge University Press, United Kingdom, 22-54, page 22.

reduce and prevent the trading of wood products from tree species that are threatened by extinction.

5. Conclusion

Deforestation has huge detrimental effects on the environment. As detailed in this Chapter, it causes desertification, climate change and biodiversity loss. These effects affect all species including human wellbeing. The loss of biodiversity, desertification and climate change have international implications, and global solutions are required in all dimensions of forest protection.³⁸⁴ The world is concerned with the state of deforestation because it has brought detrimental effects to the environment.³⁸⁵ Thus, there is a need to protect natural forests by a binding instrument to reduce deforestation and its effects.

In addition, degraded forest lands should be identified, recognised, identified and restored. Natural regeneration should be reviewed and encouraged, thus reforestation and afforestation programmes should be undertaken and well managed. Management plans, monitoring of conservation programmes and building effective quantitative databases should be properly implemented for all protected areas. In short, forest protection will help reduce biodiversity loss, mitigate climate change, and reduce or prevent desertification.

However, the importance of forests and effects of deforestation have gained international recognition. It is these positive and negatives that have been written and documented in international instruments. Thus, it is important to align how forests relate to these instruments and how it came about. These instruments usually relate and recognise one function of forests as they are necessary for other environmental issues. Forests have become a means to deal with other environmental issues without these instruments providing forest protection.

Deforestation has devastating impact globally, due in part to how important forests are for the efficient functioning and survival of the world. Deforestation results in the following ecological harms namely landslides, desertification, increased rate of climate change, soil erosion, flooding, decreased water quality, increased greenhouse gasses, loss of biodiversity, and mass extinction. All these effects (most of which are the result of human activity under the guise of development) have a negative impact on the quality of human life broadly and also specifically

³⁸⁴ Pattberg P and Dellas E, 'Assessing the political feasibility of global options to reduce biodiversity loss', Volume 9, Number 4, (2013), *International Journal of Biodiversity Science, Ecosystem Services & Management*, 347-363, page 348.

³⁸⁵ See note 383.

within the forest environment. Flooding, landslides, soil erosion and water quality go hand in hand, and are often only seen during the final stages when desertification has occurred.

Deforestation impairs the quality of the soil because it results in a huge loss of organic materials that feed the soil, such as fauna and flora both alive and dead. A loss of this biodiversity means the soil is not only exposed to the elements but is also not being nourished or given a chance to regenerate when it has been used too much. Soil is not a renewable resource, as some may assume, once damaged and eroded there is no use in trying to “fix” the land or replenishing the soil as it will have lost all of its minerals and means to “feed” itself. The eroded soil has a ripple effect, firstly the weak soil cannot absorb heavy rains thus landslides in areas impacted by deforestation; the unabsorbed water also causes mass flooding in these new desert regions and this results in less arable land (affecting water and food security) all because of humanity’s so called hunt for better and productive land.

The loss of habitat for the many species that live in these forests are under constant threat of harm from the methods used in deforestation as well as exposure to elements to which they are not adapted to living in. Examples include rare amphibians and insects in forests as well as rare mammals under threat such as tigers in the Philippines and jaguars in the Amazon. These animals play a vital role in the forests which they inhabit by protecting the life of and helping maintain a balance in the ecosystem. They rely equally on the plant and water in these areas, which deforestation has a negative impact on, without strong soil, water bodies are endangered and the species that live on them cannot sustain life and ultimately the quality of that water is negatively impacted.

It is truly an all-round devastating effect: the removal of just one tree to make space for monoculture crops impacts negatively on the diversity in the forest which leaves the soil exposed. This becomes a vicious cycle where ultimately we end up with a warmer planet, because it has lost its lungs to feeding over consumption in “developed” countries. Thinking that “planting” new forests will help us is incorrect because the loss of ecosystems and biodiversity means that the plantation-like forests can never do nearly as much as what old forests have and were doing in protecting the environment and absorbing most of the greenhouse gasses so as to keep overall climate temperature low.

It is important throughout these chapters to note the sectors that are causing deforestation and impeding forest protection as the efforts will need to be pluralistic. The international and national efforts must set out legal science initiatives to deal with the issue of forest protection,

however, such efforts can be reduced by a state's economical goals. States have continued to cut down forests because of their development goals. Thus, in order to reduce deforestation states will have to include environmental protection matters into their national development goals and plans. There is a need to enhance the partnership between socio-ecological and economical goals. However, this is due to the issue that forests are valued less and this can be reduced through education and raising awareness.

Forest valuation in developing countries is less, however developed countries with huge financial interests seem to be the ones at the forefront of degrading the environment in the global South. This linkage has been emphasised in that many of the international companies that are partaking in deforestation in the global South seem to be coming from the global North or with links thereof. There is a need for a global goal and effort to reduce deforestation. In the same vein, developing countries have poor implementation of laws and this has been exposed by the corporations who continue to abuse this weakness. Importantly, forest certification will play an important part in reducing trade and illegal logging in the global South. The global North needs to embrace this initiative to reduce these negative efforts being applied by corporations.

Furthermore, there is a need to build human rights synergies to recognise the rights of forest communities and indigenous people. There is a need to recognise their land tenure and land ownership rights in order to reduce deforestation. Historically, these groups have played a part on a supervisory mandate and sustainable forest management. Once they lose their land rights, governments in the global South give contracts to corporations that overexploit forests and illegally log forests. There is a need to recognise forest leaders in these communities since they play a part in advocating for forest protection. Their culture is also intrinsic with the environment, thus it needs to be protected.

Moreover, forest governance³⁸⁶ can play a huge part in increasing capacity in these forest communities and amongst indigenous people. The FAO states that good governance includes

³⁸⁶ "Forest governance is defined as the way in which public and private actors, including formal and informal institutions, smallholder and indigenous organizations, small, medium-sized and large enterprises, civil-society organizations and other stakeholders negotiate, make and enforce binding decisions about the management, use and conservation of forest resources. The concept of forest governance has evolved to engage multiple (public and private) actors at multiple scales, from local to global. It may include: rules about how forests should be governed, governmental regulations about who benefits from forest resources, and traditional and customary rights; the use of private-sector mechanisms such as voluntary certification to support SFM and legal timber supply; and international measures to support timber legality and promote good governance, such as the European Union's Forest Law Enforcement, Governance and Trade (FLEGT) Action Plan and payment schemes for

“adherence to the rule of law; transparency and low levels of corruption; stakeholder participation in decision-making; adequate equal rights for stakeholders; accountability; a low regulatory burden; a coherent set of laws and regulations – both within the forest sector and in other sectors that influence forest management; the proper implementation of laws; political stability; and sound capacities to govern efficiently and effectively”.³⁸⁷ There is also a need to improve on public awareness and participation in decision-making. These groups need to be heard and their rights need to be respected. However, it can be said that there are several sectors that affect natural forests and these must be brought in line with forest governance. There must be cooperation, coordination and integration at all levels of governance. The ministerial institutions must also be integrated to recognise forest protection. It is important to always advocate for sustainable agriculture as it is one of the sectors that substantially affects forest protection. The cooperation with human rights NGOs and other organisations to alleviate poverty can help achieve SDGs which is also important to forest protection as a cross-sectoral protection measure.

Nonetheless, it is important in this thesis to have these introductory chapters so that we see the link between international laws, how it has been designed (as well as origin) and frame to how it has recognised forest protection. Many of the international instruments recognise the importance of forests and how forests as a broader field can help achieve a sustainable environment. The importance of biodiversity is recognised in the CBD, mitigation of desertification by the UNCCD, and how we can combat climate change is recognised by UNFCCC. Thus, the various importance of forests have been cooperated into different international instruments. The effects of deforestation has also been recognised by several different international instruments. In order to understand how international instruments recognise and have encompassed forests in their goals, such clarification must be made.

However, it must be stated that there are multiple international instruments which are discussed in this thesis. There are several alternatives that must also be looked at to enhance the forest protection global goal. The recognition of forests as a global common and common concern of

environmental services, such as REDD+”. See website on <http://www.fao.org/sustainable-forest-management/toolbox/modules/forest-governance/basic-knowledge/en/#:~:text=Forest%20governance%20is%20defined%20as,enforce%20binding%20decisions%20about%20the>. Accessed on 27 December 2020.

³⁸⁷ See website on <http://www.fao.org/sustainable-forest-management/toolbox/modules/forest-governance/basic-knowledge/en/#:~:text=Forest%20governance%20is%20defined%20as,enforce%20binding%20decisions%20about%20the>. Accessed on 27 December 2020.

mankind will help unify the global South and North on forest protection, as will be discussed in following Chapters. Importantly, the developed countries must recognise the negative roles they have played to increase resource exploitation in the global South. They are also with the corporations with a huge financial muscle, thus recognising forest protection in their regions and countries will go a long way. Nationally, it is always important to recognise forest governance, although not the best of options as it relies on political will. However, it is one of the most important legs that can help enhance forest protection at the present moment.

Importantly, the next Chapter 5 will focus on international forest laws which are found in various international environmental instruments. These instruments have been promulgated in other fields which deal with mitigation of climate change, conservation of biodiversity and reducing desertification.

Chapter 5: International Environmental Laws relating to forest protection

1. Background

Forest ecosystems play vital roles: climate change mitigation by reducing desertification; protecting species habitat; conservation of water and biodiversity; and maintaining the quality of the soil. As seen in Chapter 2³⁸⁸, forests are a source of timber and wood, socio-ecological systems, and home of indigenous communities. Despite these vital functions, no legally binding international instrument is dedicated specifically to forests. The international community has however tried to protect forests indirectly using international instruments that are related to forest protection. These are however specifically for climate change mitigation, reduction of desertification and for biodiversity conservation. There are many global environmental instruments that have been ‘partly’ used for forest protection.

Moreover, the CBD, UNCCD, UNFCCC, CITES, and ITTA are some of the international instruments that are currently used to try and protect natural forests. Climate change mitigation, protection against desertification and conservation of biodiversity regimes provide potential soft and hard law avenues for forest protection, but this has only been attended to, from their respective angles.

There is a need for global agenda to protect forests, thus there are such concepts such as the global commons that can be used. It is important to unite the global South and North to make forest protection efforts effective and efficient. This is one more reason a stand-alone binding instrument is required for forest protection – fostering cooperation and coordination³⁸⁹ (solving complexities), and realisation of human rights.³⁹⁰ The international instrument is important because it brings clarity on international rules such as forest certification and SFM, thus fostering regional coalitions through strong compliance.³⁹¹ An instrument can also bring international norms and discourse which can help in positively uplifting forest governance, influencing the direction of corporate and governmental policies.³⁹² The instrument will also make the timber market more strong as it will be bringing the much needed legal trade concepts

³⁸⁸ See Chapter 2 on 17.

³⁸⁹ Humphreys D, ‘The Elusive Quest for a Global Forests Convention’, 14 (1) (2005), *Rev. Eur. Comp. & Int'l Env'tl. L.*, page 1-10, page 1-3.

³⁹⁰ Humphreys D, ‘Forest negotiations at the United Nations: Explaining cooperation and discord’, 3 (2001), *Forest Policy and Economics*, 125-135, page 125-7.

³⁹¹ Bernstein S and Cashore B, ‘Complex global governance and domestic policies: Four pathways of influence’, 88 (3) (2012), *International Affairs*, 585-604, page 590-594.

³⁹² *Ibid.*

and initiatives that can cause a direct impact on the policy-making processes.³⁹³ In short, the instrument can improve forest governance, legal timber trade, clarifying concepts and/or forest protection initiatives and recognise indigenous people's rights especially their land ownership rights. This can also alleviate poverty and establish cross-sectoral benefits through sustainable land-use and agricultural methods.

Global commons are natural resources that are seen as having fundamental importance to humans and other species for their survival.³⁹⁴ The global commons have been defined as those areas falling outside the jurisdiction of any one particular country and to which all nations have access (i.e. only the high seas, the atmosphere, Antarctica and outer space). Global commons will be explained below in the coming Chapters.

In addition, due to the vital functions of forests as the lungs of earth this definition should be expanded to cover forests as well. The CBD, Article 3 state that: - '*States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction*'.

It is a well-known fact that deforestation in one region can cause atmospheric carbon to rise and eventually result in climate change in many areas, this is a concept called carbon leakage.³⁹⁵ Forests are also safety nets for indigenous communities who live off their ecosystem services, hunt and gather for food.³⁹⁶ This aids in global security and reduces civil wars, alleviates poverty and reduces migration.³⁹⁷ Forests supply global goods and are now recognised internationally by the World Trade Organisation (WTO).³⁹⁸ However, forest functions are not only in the form of products and services, they also offer important socio-ecological values.

³⁹³ Ibid.

³⁹⁴ Nordhaus D W, *Managing the global commons: The economics of climate change*, MIT Press, Cambridge (United Kingdom), (1993), page 3.

³⁹⁵ Frankel J, 'Global environment and trade policy', in Aldy E J and Stavins N R (eds), *Post-Kyoto international climate policy: Implementing architectures for Agreement, Research from the Harvard Project on International Climate Agreements*, Cambridge University Press (UK), (2010), 493-529, page 506.

³⁹⁶ Young L, *World Hunger*, New York: Routledge, (1997), page 41.

³⁹⁷ Pogge T, *World poverty and human rights*, Cambridge: Polity Press, (2008), page 27.

³⁹⁸ O'Connor D, 'Governing the global commons: Linking carbon sequestration and biodiversity conservation in tropical forests', (2008), *Global Environmental Change*, 1-7, page 2.

Forests are sources of recreation, culture, employment and aesthetic beauty.³⁹⁹ Their functions play a major part in biodiversity protection and ecology life-support systems.

In addition, forests help in the conservation of soil and water, thus reducing desertification. Many of the countries in the Middle East and North Africa are affected by desertification, but forest protection and restoration can reduce over-extending desert and drought conditions across these regions. Forests also provide many wood and pharmaceutical products which are used for building houses and medicinal purposes. Wood for furniture and paper is used by over 3 billion people. Around the world and in many households, forest products are used for various purposes. These numbers and statistics have been supplied above in Chapter 2.

As explained above, the increase of carbon emissions also disturbs atmospheric pressure and gaseous concentrations. This can cause atmospheric imbalances which can result in storms, hurricanes, cyclones and typhoons. The protection of forests as global commons will surely ensure influence on carbon storage and the livelihood safeguard contributions provided by forest ecosystems and products.⁴⁰⁰ Forest ecosystems, services products and resources cannot be said as having a one definite user, thus countries cannot be excluded from the enjoyment and uses of forests (in the next Chapter 6 state sovereignty will be analysed regarding this matter). Forests are a common resource needed for all species survival.⁴⁰¹ Some of the effects of deforestation and forest degradation have been listed in Chapter 4 above.

Furthermore, forest functions are fundamentally beneficial to all terrestrial and aquatic fresh water species. All nations and everyone can claim they use forests, mainly they breathe oxygen from trees, and use many different pharmaceutical products from forests products. The MEA recognised that natural forests should be considered as global commons since they reduce desertification, mitigate climate change and help in the protection and conservation of biodiversity.⁴⁰² Forests are also important for the sustainability of other ecosystems and for climate change resilience.⁴⁰³ Forests are habitats for many species around the world and have these functions that positively viewed as ‘commons’, they protect and conserve biodiversity,

³⁹⁹ As seen in Chapter 2 on 23.

⁴⁰⁰ Agrawal A and Chatre A, ‘Trade-offs and synergies between carbon storage and livelihood benefits from forest commons’, 106 (42) (2009), *PNAS*, 17667-17670, page 17667.

⁴⁰¹ Dell’Angelo J *et al*, ‘The Tragedy of the Grabbed Commons: Coercion and Dispossession in the Global Land Rush’, 92 (2017), *World Development*, 1–12, page 2.

⁴⁰² See note 93. See website on <https://www.millenniumassessment.org/documents/document.356.aspx.pdf>. Accessed on 24 January 2019.

⁴⁰³ Kessler B W *et al*, ‘New Perspectives for Sustainable Natural Resources Management’, Vol. 2, No. 3, (Aug., 1992), *Ecological Applications*, 221-225, page 221.

are reserves of genetic materials and sequester carbon.⁴⁰⁴ Therefore, given these reasons, forests should be seen as global commons.

Section 3 below discusses initiatives by the international instruments to conserve and protect forests. Firstly, in their Articles and the given obligations, secondly, in the Thematic Programmes, COPs and funding schemes; and lastly, how international instruments have developed influence over the forest sector.

2. Forests and the Conservation of Biodiversity

As explained in Chapter 2, forest protection laws are important for the survival of all biodiversity.⁴⁰⁵ Forests provide habitat for many different terrestrial and aquatic species. Forest protection is important for the protection of these species and others that are threatened by extinction. The CBD was agreed in 1992 in Rio de Janeiro, Brazil. It is one of the earliest adopted and most important international environmental instruments to date. Forests are mentioned to ‘some extent’ in the CBD Article 2 since they are well-known biodiversity habitats and ‘biological resources’.

In addition, forest protection (forest as habitats) makes sense for these species since they are already living and adapted to these forests. There is a positive direct relationship between forest protection and the conservation of biodiversity. Thus, forest protection improves the conservation of biodiversity and all biological resources. The three main objectives of the CBD are namely the conservation of biodiversity, the sustainable use of its components, and the fair and equitable sharing of benefits arising out of the utilisation of genetic resources.⁴⁰⁶

The CBD requires Parties who have ratified the Convention to conserve biodiversity and protect habitats for flora and fauna and also areas of natural heritage, spiritual and cultural value.⁴⁰⁷ The CBD is a very wide convention and it was made as an effort to conserve biodiversity.⁴⁰⁸ It has made provisions in its articles for the protection of ‘species’ habitats’.⁴⁰⁹

⁴⁰⁴ Irland C L, ‘The Big Trees Were Kings: Challenges for Global Response to Climate Change and Tropical Forest Loss’, 28 (2010), *UCLA Journal of Environmental Law and Policy*, 387-434, page 415.

⁴⁰⁵ Also, insofar as forests provide habitats for particular species of fauna, various other international instruments are relevant, such as the Convention on Migratory Species and several of its daughter Agreements.

⁴⁰⁶ Gillies D, *A guide to EC environmental law*, (1999), Earthscan Publications Ltd, United Kingdom, page 58-9.

⁴⁰⁷ See note 40. CBD, Article 1.

⁴⁰⁸ Ibid.

⁴⁰⁹ Kidd M, ‘Forest Issues in Africa’, in Couzens E and Kolari T E (eds), *International Environmental Law-Making and Diplomacy Review*, (2005), Joensuu, University of Joensuu and UNEP, 189-212, page 192.

The instrument's main objective is the sustainable use of biodiversity (including gene pools). It can be said that forests are a habitat for a variety of species which form gene pools.⁴¹⁰

The most important definition which connects to forests in the CBD is that of 'biological resources'. The Article 2 of the CBD states that biological resources include '*the genetic resources, organisms or parts thereof, populations or any other biotic component of ecosystems with use and value to humanity*'.⁴¹¹ It might be said that this Article explains that forests (as a biological resource by this definition) need to be protected, as the CBD also sets goals on how SFM can be achieved. Explicitly, forests are ecosystems by themselves and many species are also entwined in their systems and services. One of the pillar strengths of the CBD's approach is that it recognises the intrinsic value of biodiversity⁴¹² thus allowing a broad meaning and definition for 'biological resources'. This allows for expansion of the CBD Article 1, 2 and 3, to include forests as they are biological resources and house the greater majority or terrestrial species. As explained above, forests are biological resources as they contain many fauna and flora species and are ecosystems that can stand independently.

The definition of an ecosystem⁴¹³ as used in the CBD clearly encompasses biotic and abiotic components which interact as a functional unit. An ecosystem can occupy a defined geographical area. It is a generic term for distinct assemblages of species which co-exist and co-occur in the same space and time with the same particular abiotic features in association. Thus, an ecosystem can be a forest defined by structure, age and other relevant ecological factors.⁴¹⁴

The definition of *biological resources* can be explored further by looking at the importance and values of these natural resources. The importance of these resources can be said to be twofold. Firstly, the 'instrumental value' of biological resources means that their products can be put to use. Direct use can be for pharmaceuticals, chemicals, food, educational opportunities

⁴¹⁰ Wolfrum R, 'The protection and management of biological diversity', in Morrison L F and Wolfrum R (eds), *International, regional and national environmental law*, Kluwer Law International (Netherlands), (2010), 355-371, page 360.

⁴¹¹ "*Biological resources includes genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity*". See website <https://www.cbd.int/convention/articles/default.shtml?a=cbd-02>. Accessed on 21 September 2017.

⁴¹² Rayfuse R, 'Biological Resources', in Bodanky D, Brunnee J and Hey E (eds), *The Oxford Handbook of International Environmental Law*, (2007), Oxford University Press, United Kingdom, 363-393, page 369.

⁴¹³ See note 40. The CBD Article 2, "*Ecosystem*" - means a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit.

⁴¹⁴ Gillespie A, *International Environmental law, policy and ethics*, 2nd (ed), 2014, Oxford University Press, United Kingdom, page 136.

and recreational purposes.⁴¹⁵ The indirect uses are services upon which humans depend. The indirect uses also allow these ecosystems to be protected to enable use which is sustainable by an individual or a group.

Secondly, the ‘intrinsic value’ recognises the value of an ecosystem for its own or intrinsic sake, and also values which are non-usable. For its definition of biological resources, the CBD can be credited for recognising the multi-functions and importance of forests, forest products, services and ecosystems.⁴¹⁶ Biodiversity resource definitions can be equated to the importance and nature of forest ecosystems as they provide forest products, resources and habitat for species.

In 1992, the United Nations Conference on Environment and Development⁴¹⁷ in Rio de Janeiro managed to agree on efficient use and assessment of the full valuation of services and goods provided by forests. This has been detailed in Agenda 21, Section A-C of Chapter 11 on Combating Deforestation.⁴¹⁸ The Forest Principles⁴¹⁹ cover all types of forests, the protection of biodiversity, and also of development issues that affect forest conservation and management. The main objective is for the conservation, management and sustainable development of forests. These Principles also recognise the multiple functions of natural forests; and the importance of indigenous communities especially women and children; and the need to alleviate poverty. The Principles states that there is a need to recognise the economic needs of forest communities which depend on forest ecosystems, services and products.

The Principles recognise the need to value forests by setting standards, monitoring, reporting, and conducting impact assessments if a project might cause a significant harm or degradation to a forests. The voluntary participants are encouraged to develop national policies for sustainable management and conservation of forests, develop national standards and cooperate with international institutions which recognise public participation. The voluntary participants

⁴¹⁵ See note 412, page 367.

⁴¹⁶ See note 414, page 138.

⁴¹⁷ United Nations Sustainable Development Goals: United Nations Conference on Environmental & Development Rio De Janeiro, Brazil, 3 to 14 June 1992, Agenda 21 Section (II) Paragraph 11.1-11.40.

⁴¹⁸ UN Documents Cooperation Circles Gathering a Body of Global Agreements. See website <http://www.un-documents.net/a21-11.htm>. Accessed on 12 October 2017.

⁴¹⁹ Forest Principles are seen in the Non-legally binding authoritative statement of principles for a global consensus on the management, conservation and sustainable development of all types of forests, the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992.

are also encouraged to provide for funds and finances for sustainable forest conservation and management programmes.

In 2002, the Parties to the CBD formed the Programme of Work on Forest Biological Diversity which focused on forest conservation, SFM, strengthening protected areas management, national forest protection coordination, forest law enforcement, and sustainable use of biological resources.⁴²⁰ These programmes under the CBD recognise the need to protect forests because of their multiplicity of functions and the roles performed by forests which help mitigate climate change, encourage adaptation and develop ecosystem resilience.⁴²¹

Consequently, the Parties are required to promote capacity land-use planning and sustainable commercial trade of forest products. The Parties are also encouraged to participate in research that strengthens forest protection and to develop other national laws that make forest protection laws effective.⁴²² The Principles also require States to strengthen forest administrative structures and maintain inter-sectorial co-ordination.⁴²³ The Parties to the CBD are also encouraged to prepare national and implement periodical forest protection actions which reduce veld fires, pollution, deforestation and forest degradation. The CBD COP-6 Decision VI/22 states that forest biodiversity must be managed and used in a sustainable manner.⁴²⁴ The Parties are also encouraged to protect their forests and reduce illegal trading of forest products.⁴²⁵ It was agreed that Parties would reduce and mitigate the effects of land-use changes on forests.⁴²⁶

⁴²⁰ Ruis S G M B, 'The position of African countries within the international forest process regarding a legally binding instrument, including an overview of African for a on forests', in Couzens E and Kolari T E (eds), *International Environmental Law-Making and Diplomacy Review*, (2005), Joensuu, University of Joensuu and UNEP, 231-251, page 240.

⁴²¹ See programmes and recognition here, <https://www.cbd.int/doc/publications/cbd-ts-43-en.pdf>, <https://www.cbd.int/forest/>, <https://www.cbd.int/forest/CC.shtml>, <https://www.cbd.int/forest/pow.shtml>. Accessed on 30 August 2019.

⁴²² Sunkin M, Ong M D and Wight R, *Source book on environmental law*, 2nd (ed), (2002), Cavendish Publishing Limited, (London, England), page 583.

⁴²³ See note 38, page 724.

⁴²⁴ Annex I Decisions adopted by the conference of the parties to the convention on biological diversity at its sixth meeting, The Hague, 7-19 April 2002. See website <https://www.cbd.int/doc/decisions/COP-06-dec-en.pdf>. UNEP/CBD/COP/6/20. Pages 1-278. Point 30 page 161. Also check Goal 2 on page 165. COP 6 Decisions Sixth Ordinary Meeting of the Conference of the Parties to the Convention on Biological Diversity, 7 - 19 April 2002 - The Hague, Netherland. See website <https://www.cbd.int/decisions/cop/?m=cop-06>. See also for the CBD website <https://www.cbd.int/decision/cop/default.shtml?id=7202>. Accessed on 21 September 2017.

⁴²⁵ Ibid, Point 30 page 161.

⁴²⁶ Ibid, Objective 6 under page 167.

The decisions adopted so far in various Thematic Programmes⁴²⁷ and Conferences of the Parties to the CBD have considered the conservation of biodiversity and the sustainable utilisation of genetic resources. The Parties of the instrument are required to protect and also encourage the traditional use of resources through recognised customary practices that are sustainable.⁴²⁸ These principles are important for forest governance. The interpretation of biological resources definition in the CBD leads to a conclusion that to some extent forests are encompassed in the CBD. Thus, forests will be rightly integrated in the CBD framework and policies for conservation, sustainable use and management.

The instrument requires Parties to develop national policies and policies for biodiversity protection (this provision of the CBD does not explicitly refer to forests or any mention of this subject).⁴²⁹ The Parties are also required to sustain a system of protected areas and to protect the ecosystems in which animals and plants live as their natural habitats.⁴³⁰ The reforestation and afforestation programmes in deforested lands must reduce or prevent the use and invasion by alien species.⁴³¹ The Parties are also encouraged to adopt measures that reduce the overuse of biological resources and maintain their use sustainably so that these do not suddenly decline or extinct.⁴³² The Parties are required to reduce the adverse degradation impact on natural ecosystems.⁴³³ Article 10 explicitly states that: - *‘Each Contracting Party shall, as far as possible and as appropriate: (a) Integrate consideration of the conservation and sustainable use of biological resources into national decision-making; (b) Adopt measures relating to the use of biological resources to avoid or minimize adverse impacts on biological diversity; (c) Protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements; (d) Support local populations to develop and implement remedial action in degraded areas where biological diversity has been reduced; and (e) Encourage cooperation between its*

⁴²⁷ The CBD’s various thematic programmes identify actions needed to achieve the Convention’s objectives in each biome.

⁴²⁸ Rayner J, Buck A and Katila P (eds), ‘Embracing complexity: Meeting the challenges of international forest governance’. *A global assessment report. Prepared by the Global Forest Expert Panel on the International Forest Regime (IUFRO) World Series*, (2010), Volume 28, Vienna 1-172, page 11.

⁴²⁹ See note 40. CBD, Article 6 (a).

⁴³⁰ Ibid, Article 8 (a-b).

⁴³¹ Ibid, Article 8 (h).

⁴³² Ibid, Article 10 (b).

⁴³³ Ibid.

governmental authorities and its private sector in developing methods for sustainable use of biological resources'.⁴³⁴

Furthermore, the Parties are required to make policies and put in place appropriate procedures that introduce appropriate measures to ensure that environmental consequences on proposed developmental projects that may cause significant negative impact on the environment and biodiversity resources and duly take into account biological diversity.⁴³⁵ The view is that degradation effects on the environment must be reduced or prevented if the scientific evidence given for the proposed project is not certain whether this project will have adverse effects on the environment (the precautionary principle will be discussed below in depth).⁴³⁶ Moreover, the Parties are now required to introduce appropriate measures to ensure negative environmental consequences are kept at minimum or prevented.⁴³⁷

Given the functions of forests as a natural habitat, the CBD can be seen as a relevant instrument for forest conservation and management. As mentioned, the instruments' Secretariat encourages Parties to put in place national programmes and policies for SFM and reduce deforestation.⁴³⁸ However, the treaty's Secretariat is not even mandated to 'require' Parties of the treaty to do something or anything. The legal requirements of any treaty are usually stipulated in the treaty itself and the meaning is elaborated through COP's meetings and consensus of the Parties for adoption of COP's decisions.⁴³⁹ Some of the bigger economic countries like the USA are not even members of the Vienna Convention⁴⁴⁰, thus it is not binding to them. However, the CBD Parties are also encouraged to maintain and protect carbon sinks, reservoirs and also reduce GHGs emissions.⁴⁴¹ Furthermore, Parties are encouraged to recognise indigenous peoples' rights; and they are to ensure that indigenous communities are

⁴³⁴ Ibid, Article 10.

⁴³⁵ Ibid, Article 14 (a). See also Woolley D *et al*, *Environmental Law*, 2nd (ed), (2009), Oxford University Press, United Kingdom, page 705.

⁴³⁶ Ibid. See also Stookes P, *A practical approach to environmental law*, (2005), Oxford University, United Kingdom, page 623.

⁴³⁷ Ibid, CBD, Article 14 (b).

⁴³⁸ Secretariat of the Convention on Biological Diversity 'Biodiversity and Livelihood: REDD-plus Benefits' Montreal and Eschborn, (2011), 1-42, page 8.

⁴³⁹ Vienna Convention on the Law of Treaties 1969. The Vienna Convention on the Law of Treaties' provisions on treaty interpretation.

⁴⁴⁰ Ibid.

⁴⁴¹ Williamson P & Bodle R, *Update on Climate Geoengineering in Relation to the Convention on Biological Diversity: Potential Impacts and Regulatory Framework*. Technical Series No.84. Secretariat of the Convention on Biological Diversity, Montreal, (2016), pages 1-158. See website on <https://www.cbd.int/doc/publications/cbd-ts-84-en.pdf>. Accessed on 24 January 2019.

able to participate in the making of policies.⁴⁴² Their ownership and social rights must also be protected by these national policies and the use of forest services and products.⁴⁴³ The CBD are also require Parties to enhance the socio-economic benefits of forests and prevent forest ecosystem degradation.

The CBD requires its Parties to reduce the continued loss of forests in their countries or regions through the use of SFM. Furthermore, they are encouraged to increase spaces for protected areas that sustainably manage forests. The CBD also require Parties to increase new financial resources for the implementation of SFM.⁴⁴⁴ The instrument recognises that adaptation of forests ecosystems should be increased to allow for resistance and resilience of forests, and how forests species can be affected by loss of forests and the effects of climate change.

In the Second Meeting (Jakarta, 1995) of the COP, the Parties agreed to link forest conservation with other instruments.⁴⁴⁵ This Meeting was aimed at biodiversity issues by-side forest conservation and management by using sustainable synergies and strategies that could help conserve biodiversity in their natural habitats was also discussed. The 3rd Meeting (Montreal, 2004) of the COP was meant to overstate reiterate the socio-economic values of forests and the environmental programmes that can be used to achieve the best of forest conservation and management.⁴⁴⁶ This Meeting also focused on how to improve forest research, regional cooperation and environmentally friendly innovative technologies to reduce deforestation and forest degradation. The Parties were advised by the Subsidiary Body on Scientific, Technical

⁴⁴² See note 40, Article 8 (j) and Sobrevila C, *The Role of Indigenous Peoples in Biodiversity Conservation: The Natural but Often Forgotten Partners*, (2008). See website on <https://www.cbd.int/financial/doc/RoleofIndigenousPeoplesinBiodiversityConservation.pdf>. Accessed 24 January 2019.

⁴⁴³ See Mauro F and Hardison D P, 'Traditional knowledge of indigenous and local communities: International debate and policy initiatives', (1999) 10 (5), *Ecological Applications*, 1263–1269. See also website <https://www.cbd.int/convention/wg8j.shtml>. Accessed on 24 January 2019.

⁴⁴⁴ Scotland E, *Environmental principles and the evolution of environmental law*, Bloomsburg Publishing (UK), (2017), page 192.

⁴⁴⁵ Conference of the Parties to the Convention on Biological Diversity. Second meeting, Jakarta, 6-17 November 1995. Decision II/9, 'Forests and Biological Diversity', (UNEP/CBD/COP/2/19, 30 November 1995) Paragraphs 1, 2 (b) and 4. See also <https://www.cbd.int/doc/decisions/COP-02-dec-en.pdf>. Accessed on 24 September 2017.

⁴⁴⁶ Secretariat of the Convention on Biological Diversity (2004). Expanded programme of work on forest biological diversity. Montreal, page 22. (CBD programmes of work), page 2. See website on <https://www.cbd.int/doc/publications/for-pow-en.pdf>. Accessed on 25 January 2019. Conference of the Parties to the Convention on Biological Diversity. Third meeting. Buenos Aires, Argentina, 4-15 November 1996. CBD Decision III/12, 'Programme of work for terrestrial biological diversity: Forest biological diversity', (UNEP/CBD/COP/3/38, 11 February 1997). See also <https://www.cbd.int/doc/meetings/cop/cop-03/official/cop-03-38-en.pdf>. Accessed on 24 September 2017.

and Technological Advice⁴⁴⁷ (SBSTA) body of the CBD to develop ways to enhance and influence forest conservation and management.⁴⁴⁸

During the COP-6, the Forest Biological Diversity Thematic Programme was expanded to reducing deforestation and biodiversity loss.⁴⁴⁹ It was now aimed at facilitating the Ecosystem Approach (EA), sustainable use of forest products and services, seeking collaboration in forest management and integration across all sectors of the international arena. Furthermore, this Session dealt with how to improve conservation of species in protected areas.

Consequently, at the CBD COP-9 (Bonn, 2008) there was a substantial focus on indigenous people who use forest services and products and also participate in forest conservation.⁴⁵⁰ This also led to the adoption of the United Nations Declaration on the Rights of Indigenous Peoples, although this instrument is not under the CBD.⁴⁵¹ The Session encouraged Parties to involve indigenous communities, NGOs and stakeholders in forest protection projects. The Parties were encouraged to make policies that included benefit sharing with indigenous communities and also how to improve the effectiveness of forest protection laws. This Meeting also included an introduction of the use of financial market incentives such as forest certification. The Meeting also encouraged Parties to use the precautionary approach⁴⁵² and reduce the use of genetically modified trees (reference to invasive species) in forest restoration and afforestation projects.

⁴⁴⁷ It is a body that has been established under the Convention to advise Parties on scientific and technical matters.

⁴⁴⁸ Conference of the Parties to the Convention on Biological Diversity. Third meeting. Buenos Aires, Argentina 4-15 November 1996. CBD Decision III/12, 'Programme of work for terrestrial biological diversity: Forest biological diversity', (UNEP/CBD/COP/3/38, 11 February 1997), paragraph 10. See website <https://www.cbd.int/doc/meetings/cop/cop-03/official/cop-03-38-en.pdf>. Accessed on 24 September 2017.

⁴⁴⁹ Sixth Ordinary Meeting of the Conference of the Parties to the Convention on Biological Diversity (COP 6) COP 6 Decisions 7 - 19 April 2002 - The Hague, Netherlands.

⁴⁵⁰ Ninth meeting of the Conference of the Parties to the Convention on Biological Diversity (COP 9). 19 - 30 May 2008 - Bonn, Germany.

⁴⁵¹ United Nations Declaration on the Rights of Indigenous Peoples (A/RES/61/295, 13 September 2007). Published by the United Nations 07-58681—March 2008—4,000. See also http://www.un.org/esa/socdev/unpfii/documents/DRIPS_en.pdf. Accessed on 24 September 2017.

⁴⁵² Precautionary approach is defined in the CBD's preamble ('where there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimize such a threat'). The precautionary approach is much used to take mitigating steps into consideration before a project starts, to reduce the degradation of the environment. See Sadeleer de N, *Environmental Principles from Political Slogans to legal rules*, (2002), Oxford University Press, Oxford, page 149.

Furthermore, the CBD COP-10 (Nagoya, 2010) encouraged the Parties of the CBD to cooperate in sub-regional projects for forest protection.⁴⁵³ They were also required to co-operate with the ITTO⁴⁵⁴ principles in the sustainable commercial sell of forest products, and that trade alliances had to be designed within the principles and ambit of the articles and obligations of the CBD. The Parties were encouraged to collaborate on efforts to protect transboundary forests in conjunction with the relevant regional and international bodies mandated to promote forest protection.

The members to the Collaborative Partnership on Forests (CPF)⁴⁵⁵ are encouraged to exchange information on ways to improve forest conservation. They are also required to address forest trade in their countries and regions; and to reduce trade when it can severely affect forests due to over deforestation of trees for wood and timber products. The Parties are also encouraged to improve mutually supportive projects of forest management and conservation; and to expand forest conservation projects. The Parties are required to incorporate the CBD and UNFCCC programmes which relate to reducing forest degradation and deforestation, SFM, enhancing carbon sinks and reservoirs into strategic integrated programmes for forest protection.

The collaboration of the UNFCCC and CBD is of vital importance since forests play a critical part in ecosystem resilience. The effects of climate change will be reduced if forests are well protected and these forests can absorb these changes and effects. This will also reduce the effects of climate change on indigenous communities and loss of biodiversity.

In addition, other programmes have been adopted and established to which are more specific and cross cutting. The COP has also adopted a large volume of decisions on various cross-cutting issues that have relevance for forest protection, management and conservation (just one example is its decisions on alien invasive species). For example, the Aichi Biodiversity Targets were put in place under the CBD to support Parties in their implementation of the three goals of the CBD. The Aichi Targets has a greater role in the CBD Strategic Plan to meet the goals and objectives of the CBD. The Aichi Biodiversity Targets (Strategic Plan for Biodiversity

⁴⁵³ Decision adopted by the Conference of Parties to the Convention on Biodiversity at its COP-10, Nagoya, 2010.

⁴⁵⁴ The International Tropical Timber Organization (ITTO), (1985), agreed to be under the ITTA in 1994. It put under the wing of the United Nations Conference on Trade and Development signed in 1985. See website on <http://www.itto.int/>. Accessed on 24 September 2017.

⁴⁵⁵ Collaborative Partnership on Forests. See website on <http://www.cpfweb.org/en/>. Accessed 24 January 2019. *“The mission of the Collaborative Partnership on Forests is to promote sustainable management of all types of forests and to strengthen long-term political commitment to this end”*.

2011-2020, COP-10) aim to effectively protect forests through protected areas and the effective implementation of environmental agreements. There has been progress made towards meeting these targets and the fact that their replacement (the post-2020 global biodiversity framework) is currently being negotiated. Importantly, Target 3 encourages Parties to reduce negative impacts on natural habitats and allow for positive incentives that recognise sustainable use of resources.

These incentives must be consistent with other international instruments and also take cognisance of the socio-economic conditions of indigenous people. Target 4 also encourages Parties to sustainably use the services and products of natural resources and keep these safe within the ecological limits. Target 5 aims to reduce the loss of natural habitats (including forests) to at least half and if possible to zero. Target 7 encourages Parties to the CBD to manage forests sustainably and reduce deforestation from agricultural activities, thus ensuring biodiversity conservation. It also requires Parties to the CBD to significantly reduce forest fragmentation and degradation. Target 11 encourages Parties to focus on the effective management of biodiversity protection.

Furthermore, Target 15 recognises the need to restore deforested land and aims to restore about 15 per cent of degraded ecosystems by 2020. Restoration is regarded as highly important in the Aichi Biodiversity Targets, Target 9 reconfirms that Parties must reduce and minimise the use of invasive species. The international community has also recognised the importance of forests under the climate change regime. Forests are well-known sources of carbon storage and this mono-function has been recognised by the climate change instrument, the UNFCCC. The section below explains and analyses how forests have been incorporated into the theme of mitigation of climate change under the climate change regime.

Therefore, as has been shown the CBD has some Articles that are important and relate to forest protection. However, the CBD is still broad to protect forests as it covers many subjects. The CBD is seen as a framework for conservation of biodiversity, and the Nagoya Protocol and a few Agreements have been promulgated under the instrument. Nevertheless, none of these instruments are binding and specific to forest protection. The NLBI was meant to be the forest instrument, but the international community failed to agree on it to become a binding agreement (other reasons are discussed below in this Chapter). In short, the CBD was not promulgated specifically for forest protection though some Articles relate to forest protection. It is insufficient and inadequate for forest protection in this regard. However, a future instrument

can still come from and under the CBD framework since it is an important international instrument. Moreover, forests are known for carbon sequestration and storage, thus forest and climate change will be discussed below.

3. Forests and Climate Change

The increase of carbon in the atmosphere will increase the effects of climate change. There is therefore a need to reduce carbon emissions from, *inter alia*, the use of wood fuel and deforestation. Carbon is fixed in the forest soil and deforestation contributes to the release of this carbon into the atmosphere. Forest ecosystems contain most of the stored carbon thus maintaining forests and forest lands helps to maintain the carbon level stability in the atmosphere.⁴⁵⁶ The world's forest ecosystems sequester and store carbon more than any other terrestrial ecosystems. Carbon is formed as biomass and organic carbon in the forest soil. This has been explained in more detail in Chapter 2.

The international environmental community has quickly recognised the importance of reducing deforestation and forest degradation for carbon sequestration, storage and as carbon reservoirs. Initiatives in this regard have resulted in climate change mitigation, the Kyoto Protocol, the REDD, the REDD+ and the Paris Agreement. These instruments have sought to raise awareness and protect forests to try and mitigate climate change. The international community negotiated the UNFCCC with the objective of reducing the rise of greenhouse gas (GHGs) concentrations in the atmosphere and/or maintaining them stable. The instruments provide a negotiation platform, framework for institutions and technical infrastructure required for inter-party solutions to mitigate climate change.

3.1 UNFCCC

The UNFCCC⁴⁵⁷ was adopted in 1992. Its objective is to reduce and prevent anthropogenic interference with the earth's climate atmospheric system. According to Art. 2, "*The ultimate objective of this Convention and any related legal instruments that the Conference of the Parties may adopt is to achieve, in accordance with the relevant provisions of the Convention, stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved*

⁴⁵⁶ Streck C and Scholz M S, 'The role of forests in global climate change: whence we come and where we go', *International Affairs (Royal Institute of International Affairs 1944-)*, Vol. 82, No.5, (Sep. 1, 2006), 861-879, page 861.

⁴⁵⁷ See note 45.

within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner”.

The UNFCCC requires States to stabilise GHGs to levels that do not threaten ecosystems and species. This level should also not threaten food production and sustainable economic development.⁴⁵⁸ Importantly, in the international community forests are now recognised as carbon sinks and therefore the mention of sinks in the UNFCCC will add value to the conservation and protection of natural forests. Thus, the conservation and protection of sinks, such as natural forests, will maintain climate system stability.

Article 2 requires Parties to ‘*stabilise GHGs concentrations at levels that prevent interference with the climate system*’. The Parties are also required to promulgate policies and measures to mitigate climate change, and these actions should be comprehensive and cover all GHGs reservoirs, sources and sinks.⁴⁵⁹ Furthermore, the Parties are required to protect the Earth’s climate.⁴⁶⁰ The instrument states that this should be for the benefit of present and future generations of humankind by reducing the GHG emissions effects on the Earth’s systems.⁴⁶¹ Developed countries are given the first duty to mitigate climate change and take responsibilities to reduce its adverse effects.

Furthermore, countries should consider the needs of other countries facing the effects of climate change, to reduce the effects, and be accountable for human rights issues. The instrument also requires Parties to take serious precautionary measures which prevent and minimise GHG emissions.⁴⁶² The Parties are required to implement policies and measures that mitigate climate change in a cost-effective way, ensuring global benefits at the lowest possible costs. In addition, these measures are to also account for socio-economic and environmental factors, including relevant sources, reservoirs and sinks of GHGs and adaptation.

⁴⁵⁸ Mori S A *et al*, ‘Reframing ecosystem management in the era of climate change: Issues and knowledge from forests’, 165 (2013), *Biological Conservation*, 115–127, page 115.

⁴⁵⁹ See note 45. UNFCCC, Article 3 (3).

⁴⁶⁰ *Ibid*, Article 3 (1).

⁴⁶¹ *Ibid*.

⁴⁶² *Ibid*, Article 3 (3), See “The Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects. Where there are threats of serious or, taking into account that policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at the lowest possible cost. To achieve this, such policies and measures should take into account different socio-economic contexts, be comprehensive, cover all relevant sources, sinks and reservoirs of greenhouse gases and adaptation, and comprise all economic sectors. Efforts to address climate change may be carried out cooperatively by interested Parties”.

The Parties are also encouraged to promote sustainable development policies and projects that protect the climate system and reduce human-induced land changes.⁴⁶³ The policies and measures that are being used to protect the climate system against human induced changes must be the most appropriate according to the specific conditions of any Party, and must also be integrated into their national development plans, which must also recognise socio-economic development. Development results in land-use changes and thus increased carbon emissions. A sustainable economic development that results in the meetings of the SDGs can result in reducing climate change induced impacts.

The Parties are also encouraged to cooperate to promote supportive, integrated and open international economic sectors that can lead to sustainable economic growth and development in all Parties. Developing countries are also urged to cooperate and integrate plans together, enabling them to address the effects of climate change. These efforts can be taken by a number of cooperative Parties who are interested in working together or regionally. These measures should not discriminate or restrict international trade in these regions. The instrument also requires Parties to the UNFCCC to and integrate policies which reduce GHGs emissions into their national development programmes and reduce the loss of all carbon sinks.⁴⁶⁴

Furthermore, the Parties are required to create and establish inventories of GHG emissions sources and removals done by sinks.⁴⁶⁵ They are also encouraged to form regional and transboundary programmes for climate change mitigation, addressing emissions and enhancing the protection of sinks.⁴⁶⁶ The Parties are required to formulate, publish and regularly update their plans, programmes and measures to address anthropogenic emissions by enhancing carbon sinks and reservoirs.⁴⁶⁷ The Parties are required to promote and cooperate in the development and transfer of technologies that reduce or prevent GHGs emissions for mainly the energy, transport, agriculture and forestry sectors.⁴⁶⁸

They are also required to sustainably manage and promote the conservation of forest ecosystems. Article 4 (1) (f) states that: - *Take climate change considerations into account, to the extent feasible, in their relevant social, economic and environmental policies and actions, and employ appropriate methods, for example impact assessments, formulated and determined*

⁴⁶³ Ibid, Article 3 (4).

⁴⁶⁴ Ibid.

⁴⁶⁵ Ibid, Article 4 (1) (a).

⁴⁶⁶ Ibid, Article 4 (1) (b).

⁴⁶⁷ Ibid.

⁴⁶⁸ Ibid, Article 4 (1) (g).

nationally, with a view to minimizing adverse effects on the economy, on public health and on the quality of the environment, of projects or measures undertaken by them to mitigate or adapt to climate change. The Parties are required to undertake impact assessments on all relevant social, economic and environmental policies and actions.⁴⁶⁹ They are also encouraged to take appropriate measures and methods, formulate and determine national, projects that seek to mitigate climate change, minimising effects on the environment, economy and public health. They must also be open to the exchange of relevant scientific, technology and legal information related to climate change mitigation.

The Parties are also encouraged to promote education, training, public awareness and participation in the reduction of emissions. The Parties are also encouraged to promote national and regional education and awareness supported by national laws and regulations. They must do this within their respective capacities of implementing public awareness programmes; public access to information; public participation; training of scientific personnel; cooperation at the international level with appropriate bodies; the development of educational training; and also strengthening the national institutions that are involved in the mitigation of climate change.⁴⁷⁰

The UNFCCC requires States to reduce anthropogenic GHG emissions by developing policies that use clean energy and are sustainable for the environment.⁴⁷¹ This will mitigate climate change and reduce the effects of drought and desertification. The UNFCCC also stipulates that there must be cooperation amongst Parties in the development and technology transfer to reduce GHG emissions.⁴⁷² The instrument requires Parties in Africa to integrate plans and cooperate with each other for the protection, rehabilitation and conservation of forest lands, reducing desertification and droughts.⁴⁷³ The Secretariat of the UNFCCC has been given the functions to compile reports, facilitate assistance primarily for developing countries, prepare reports, enter into administrative and contractual arrangements, and perform other duties specified by the Convention and any other protocols.

⁴⁶⁹ Ibid, Article 4 (1) (f).

⁴⁷⁰ Ibid, Article 6.

⁴⁷¹ Ibid, Article 4 (2) (a).

⁴⁷² Ibid, Article 4 (2) (c).

⁴⁷³ Ibid, Article 4 (1) (e).

The Subsidiary Body of Scientific and Technological Advice (SBSTA) is responsible for providing the Parties with the necessary advice on how to mitigate climate change.⁴⁷⁴ It also provides information on the scientific and technology matters which are used to mitigate climate change.⁴⁷⁵ This body provides assessments and innovative, environmentally friendly technology.⁴⁷⁶ It also prepares scientific assessments on the measures taken by the Parties which are informed by the Convention.⁴⁷⁷ They also advise on the ways to mitigate climate change and are also involved in technology transfer.⁴⁷⁸ The SBSTA also encourages and takes part in international cooperation in research and development that mitigates climate change.⁴⁷⁹ They are also involved in research and respond to scientific questions from Parties and other subsidiary bodies.⁴⁸⁰

The Marrakesh Accords⁴⁸¹ were reached at COP-7 to the UNFCCC in 2001, to reinforce the targets and the rules of the Kyoto Protocol. The Marrakesh Accords refer to the conservation of biodiversity on a number of provisions. The Parties are encouraged to implement Land Use, Land-Use Change and Forestry (LULUCF) activities since they contribute to the conservation of biodiversity and the sustainable use of natural resources. However, this term ‘contribution’ is broad and general to constrain LULUCF activities. The Accord also requests the SBTA to formulate definitions and modalities on project activities under Article 12, which take into account environmental impacts on biodiversity and natural ecosystems. Again there has been much criticism on the use of the phrase ‘taking into account’. However, this does not mean that environmental impacts actually have limitations to LULUCF projects and activities.

The Accords define ‘forest management’ as ‘a system of practices for stewardship and use of forest lands aimed at fulfilling relevant socio-economic and ecological functions of the forest in a sustainable manner’.⁴⁸² The references made to stewardship, fulfilment of biodiversity

⁴⁷⁴ Ibid, Article 9 (1).

⁴⁷⁵ Ibid, Article 9 (2) (a-e).

⁴⁷⁶ Ibid.

⁴⁷⁷ Ibid.

⁴⁷⁸ Ibid.

⁴⁷⁹ Ibid.

⁴⁸⁰ Ibid.

⁴⁸¹ UNFCCC, LULUCF - Developments at past COP and SB sessions, Marrakesh Accords and COP-7. See website http://unfccc.int/land_use_and_climate_change/lulucf/items/3063.php. Accessed 16 October 2017.

⁴⁸² “*Forest management*” is a system of practices for stewardship and use of forest land aimed at fulfilling relevant ecological (including biological diversity), economic and social functions of the forest in a sustainable manner. UNFCCC, Report of the Conference of the Parties on its Seventh Session, held at Marrakesh from 29

functions and sustainable use of forest is regarded as restrictions on forest management for the benefit and protection of biodiversity. The restrictions however are not all that concrete and the term ‘stewardship’ is ambiguous. The term ‘stewardship’ is neither defined in the Accords nor in further explanations, therefore a common solution cannot be found. Thus, a clear solution and restriction to forest management will not be derived from the stewardship of forests. Stewardship is considered weak since it refers to forest management, not only to the use of forests. Furthermore, ‘use of forests’ can be interpreted in different ways depending who owns the forest lands, and it is a phrase which is open to abuse of forests, forest resources and services.

It is uncertain in the Accords what the relevant ecological functions of forests are, because they are not listed. Moreover, the reference of economic functions of forests being equal to socio-ecological functions weakens the Accord. The economic functions as so stated by many instruments lead to overuse (as the deforestation and overuse of timber has been increasing) and exploitation of natural resources, therefore there is no comparison to socio-ecological functions which are mainly related to forest protection. It might be because economic functions are more prone to direct human influences than socio-economic functions. The definition of ‘sustainability’ is a difficult one to analyse or assess. This is because the definition of ‘forest management’ does not seem to hold the same parameter or pivotal stem as ‘sustainability’ because it does not go further in balancing the three fields (socio-economic and ecological) of sustainable development or offer any explanation as to how sustainable development can be achieved in the forest sector.

Furthermore, in Cancun during the COP-16 in December 2010, the Ad Hoc Working Group under the UNFCCC agreed on a Long-Term Co-operative Action.⁴⁸³ This decision was to slow, reverse, prevent and halt deforestation.⁴⁸⁴ These programmes were meant to be consistent with sustainable forest management and the ecosystem services which provide and enhance socio-

October to 10 November 2001, Part two: Action taken by the Conference of the Parties, <http://unfccc.int/resource/docs/cop7/13a01.pdf#page=54>. Accessed on 06 November 2017, 1-69, page 58.

⁴⁸³ Decision 1/CP.16, ‘The Cancun Agreements: Outcome of the work of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention’, in Report of the Conference of the Parties on its 16th session, held in Cancun, 29 November -10 December 2010 (FCCC/CP/2010/7/Add.1, 15 March 2011) at 12.

⁴⁸⁴ Savaresi A, ‘The role REDD in the harmonisation of overlapping international obligations’, in Hollo J E, Kulovesi K and Mehling M (eds), *Ius Gentium: Comparative perspectives on Law and Justice*, Volume 21 (2013), Springer, 391-418, page 397.

economic and ecological benefits.⁴⁸⁵ The Parties at this meeting were encouraged to reduce GHG emissions and protect their forests.⁴⁸⁶ The Cancun Conference identified safeguards and provisional ways to support the development of national strategies and forest protection programmes that reduce emissions.⁴⁸⁷

In Marrakesh (COP-22), in 2016 the developed countries reconfirmed their responsibilities by contributing €93 million to the Green Forest Fund for projects that seek to reduce emissions and mitigate climate change. Furthermore, the Fund focused more on making activities that increase emissions recognise the concepts of sustainable development. The COP-22 also emphasised tracking the progress of many Parties who had started emission reduction projects. The Decision 3/COP-20 (Lima-2014) also decided that many ecosystems (including forests) must be conserved and to reduce emissions from deforestation and forest degradation. The meeting also required the Parties' National Development Plans (NDPs) to reflect a commitment to reduce emissions and conserve sinks and reservoirs. Decision 8/CP.20 recognised the duties of the Global Environment Facility (GEF)⁴⁸⁸ and continued to guide and invests in the Parties' emission reduction projects. At COP-19 (Warsaw, 2015), the break through decision made was that of the rule-book for REDD.⁴⁸⁹ There was also agreement on measures to bolster forest preservation and a payment system based on results for forest protection.

The UNFCCC has many programmes focused on reducing forest degradation and deforestation. The Convention instructs its Parties to conserve forests and reduce GHG emissions in the atmosphere. The Parties to the Convention have also adopted the Kyoto

⁴⁸⁵ Rep. of the Conference of the Parties to the United Nations Framework Convention on Climate Change Decision 1/CP.16, Rep. of the Conference of the Parties, 16th Sess., Nov. 29-Dec. 10, 2010, U.N. Doc. FCCC/CP/2010/7/Add. 1 (Mar. 15, 2011).

⁴⁸⁶ Decision 1/CP16, 'The Cancun Agreements: Outcome of the work of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention', in Report of the Conference of the Parties on its 16th session, held in Cancun, 29 November -10 December 2010 (FCCC/CP/2010/7/Add.1, 15 March 2011), Paragraph 70 Part C.

⁴⁸⁷ Decision 1/CP16, 'The Cancun Agreements: Outcome of the work of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention', in Report of the Conference of the Parties on its 16th session, held in Cancun, 29 November -10 December 2010 (FCCC/CP/2010/7/Add.1, 15 March 2011). The Cancun Agreements Appendix I.

⁴⁸⁸ Kiss A and Shelton D, *Manual of European environmental law*, 2nd (ed), (1997), Cambridge University Press, United Kingdom, page 594.

⁴⁸⁹ United Nations Framework Convention on Climate Change, Reducing emissions from deforestation and forest degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries (REDD-plus). See website http://unfccc.int/land_use_and_climate_change/redd/items/7377.php. Accessed on the 28/09/2017.

Protocol and started the REDD+ programmes to reduce deforestation and forest degradation emissions. The UNFCCC tries to reduce deforestation from its mono-function analysis of the function of forests as carbon sinks, reservoirs and storages. The sections below demonstrate how the UNFCCC has developed these programmes and the Kyoto Protocol.

3.2 Kyoto Protocol

Forests sequester carbon from the atmosphere and store it, reducing carbon in the atmosphere. When forests are cut or forest lands are degraded, carbon emissions are released thus increasing the chances for climate change. Forest protection results in climate change mitigation and the UNFCCC has recognised that forests are of vital importance. The Parties to the UNFCCC are given optional requirements instead of obligatory requirements to meet their emission level reductions using carbon credits which can be generated for example by afforestation and reforestation. The Kyoto Protocol is not automatically binding on all UNFCCC Parties, but only binds states that have expressed their consent to be bound through ratification/accession. Some of the Parties have agreed to the Kyoto Protocol which is meant to reduce carbon emissions from, *inter alia*, forest degradation and deforestation. The Kyoto Protocol requires countries to adopt national policies that enhance carbon sinks and reservoirs, thus mitigating climate change.⁴⁹⁰

The Kyoto Protocol was adopted in 1997 (came into force 2005) in Kyoto, Japan and signed under the UNFCCC. The rules of the implementation of the Kyoto Protocol were agreed at COP-7 in Marrakesh, Morocco commonly known as the ‘Marrakesh Accords’ formally adopted in Montreal, Canada in 2005.⁴⁹¹ The Protocol advocated for the afforestation and reforestation of forest lands that had been deforested. The Annex-1 Parties⁴⁹² of the Protocol

⁴⁹⁰ Carlarne P C, *Climate change law and policy*, (EU and US Approaches), (2010), Oxford University Press, United Kingdom, page 244.

⁴⁹¹ Verschuuren J, ‘Legal aspects of climate change adaptation’, in Hollo J E, Kulovesi K and Mehling M (eds), *Jus Gentium: Comparative perspectives on Law and Justice*, Volume 21, (2013), Springer, 257-286, page 272.

⁴⁹² List of Annex I Parties to the Convention. See website

http://unfccc.int/parties_and_observers/parties/annex_i/items/2774.php. Annex-I Parties are developed countries belonging to the Organization for Economic Cooperation and Development (OECD) and countries designated as Economies in Transition under the UNFCCC. Annex II Parties the rich States listed under this UNFCCC Annex have a special obligation to help developing countries with financial and technological resources. They include the 24 original OECD members and the EU. Annex-B Parties’ developed countries which have limitation targets under the Kyoto Protocol. Accessed 28 September 2017.

have been given duties to reduce GHG emissions.⁴⁹³ The Kyoto Protocol requires Parties to promote sustainable forest management practices, reforestation and afforestation.⁴⁹⁴ The Protocol requires Parties to measure verifiable GHGs emission changes in the atmosphere and also monitor the assigned emission caps.⁴⁹⁵ The Kyoto Protocol has listed countries into different Annexures and given them different duties and obligations to reduce emissions of the GHGs.

The Annex-B countries are the developed economies countries that have signed the Kyoto Protocol that are subject to emission caps of GHG and the committed to reduction targets. The Annex I are the countries that have been recognized by the UNFCCC. The Annex-B countries are an adjusted list identified under the recent Kyoto Protocol and have their emission reduction targets formally stated. The Annex-B countries (not all – they have their reductions firmly stated) are also required to reduce emissions from land-use change and to add deforestation to their net emissions in their data bases and base year emissions.⁴⁹⁶

The Annex-B Parties are required to count their net increase in carbon storage (net removals by sinks) which resulted from land-use change as human influence activities.⁴⁹⁷ The Protocol in Article 3(3) is important in the conservation of biodiversity by protecting it against forest degradation and deforestation activities. The Protocol requires Parties to develop rules which are used for accounting the net carbon uptake (net removals) which can be agricultural soil.⁴⁹⁸ Thus, Annex-B Parties can then count their carbon net removals from 1990 due to human-induced activities for emissions limitation commitments.

The Annex-I Parties are encouraged to have a national system for estimating GHG emissions and the removal by sinks.⁴⁹⁹ These emission gases are measured against their contribution to

⁴⁹³ See note 45. In the UNFCCC, the Annex 1 parties include the industrialized countries, members of the Organization for Economic Cooperation and Development in 1992, and countries with economies in transition (the EIT Parties). This excludes most developing countries. See Fischer C and Morgenstern D R, 'Metrics for evaluating policy commitments in a fragmented world: The challenges of equity and integrity', in Aldy E J, Stavins N R (eds), *Post-Kyoto international climate policy: Implementing architectures for agreement, Research from the Havard Project on international climate agreements*, (2010), Cambridge University Press, United Kingdom, 300-342, page 318.

⁴⁹⁴ Srivastava N, 'Changing Dynamics of forest Regulation: Coming Full Circle', 20 (2) 2011, *Review of European Community & International Environmental Law*, 113-122, page 118.

⁴⁹⁵ See note 52. Kyoto Protocol, Article 3 (3).

⁴⁹⁶ Ibid, Article 3 (7).

⁴⁹⁷ Ibid, Article 3 (3).

⁴⁹⁸ Ibid, Article 3 (4).

⁴⁹⁹ Ibid, Article 5.

global warming. The Annex-I Parties are also required to submit GHG inventories annually which details the sources and the removal of emissions.⁵⁰⁰ The Parties are required to incorporate national communication plans as reflected in Article 12 and the supplementary information that show compliance with the Convention. They are also required to improve on national communications throughout the year including any information they may hold which is supplementary and which demonstrates compliance with the Protocol. The Parties are also required to build expert review teams to manage the national communication and the inventories.⁵⁰¹

Consequently, the Protocol requires Parties to commit to sustainable land-use changes and forest protection programmes to reduce deforestation.⁵⁰² More integration of forest protection programmes into the climate change regime might be a possible good idea since it can provide financial returns which can be used for the conservation of biodiversity in protected areas and offer some incentives to the indigenous people.⁵⁰³ This could offer a win-win solution to cross-sectoral forest protection challenges that have been experienced in the past, helping to establish a complex system of economic incentives from carbon reduction policies and targets.⁵⁰⁴

The Protocol also requires Parties to join and co-operate in reducing GHGs programmes which include afforestation, forest protection and reforestation. This will result in GHG offsets being transferred from the developed country (investing country) to the developing (country protecting its carbon sinks and reservoirs). This is usually done by contractual arrangements and obligations of the developed country buying the carbon offsets from the developing country.

These actions by Parties of reducing the GHG emissions must be done within the ambit of other international agreements.⁵⁰⁵ ‘They are required to implement policies accordingly with their

⁵⁰⁰ Ibid, Article 7.

⁵⁰¹ Ibid, Article 8.

⁵⁰² See note 494, page 118.

⁵⁰³ Humprey D, Wildburger C and Wood P, ‘Mapping the core actors and issues defining international forest governance’, in Rayner J, Buck A and Katila P (eds), *Embracing complexity: Meeting the challenges of international forest governance*. A global assessment report. Prepared by the Global Forest Expert Panel on the International Forest Regime IUFRO World Series, (2010), Volume 28, Vienna 1-172, pages 19. Also see McDermott, C. L, Humphreys, D, Wildburger, C, Wood, P, Marfo, E, Pacheco, P, & Yasmi, Y. (2010). *Mapping the core actors and issues defining international forest governance*, (Vol. 28, pp. 19-36). IUFRO (International Union of Forestry Research Organizations) Secretariat, page 19-20.

⁵⁰⁴ Ibid.

⁵⁰⁵ See note 52. Kyoto Protocol, Article 2 (1) (a) (ii).

natural circumstances, introducing energy efficient measures, protect carbon sinks and reservoirs, promote sustainable agriculture practices, promote development with renewable forms of energy and carbon sequestration technologies, produce environmentally friendly technology, phasing out all market imperfections which might cause the emission of more GHG tax invasions and exemptions, encouragement of reforms on sectors to reduce emissions, promote measures to limit GHG emissions and reducing emissions from the transport and energy sector'.⁵⁰⁶

Parties must also take current commitments and COPs decisions into account, promote SFM and impact assessments.⁵⁰⁷ It must be stated that Article 2 is specific to Annex I Parties and then Article 2 (1) (a) is qualified by the phrase 'such as'. The Protocol requires Parties to promote SFM practices in their country and regions.⁵⁰⁸ The Protocol requires Parties to reduce GHG emissions from various economic sectors and promulgate policies aimed at promoting forest conservation as they are forest sinks and reservoirs.⁵⁰⁹ Furthermore, Parties are required to promote agricultural activities and programmes that are sustainable and reduce emissions.⁵¹⁰ The Kyoto Protocol requires Parties to use new and renewable energy which will reduce emissions and deforestation and forest degradation.⁵¹¹

The Parties in Annex-I are all required by Article 3 to reduce emissions of GHGs and promote sustainable development in their regions.⁵¹² The Parties are also encouraged to co-operate with other countries to make their policies and measures more effective. They are also encouraged to exchange information and experiences of methodologies used in their countries to reduce emissions. These measures must be transparent and effective in reducing emissions of the GHGs.

The Parties are also encouraged to co-ordinate on the policies and measures, taking into account the circumstance of every country and the potential effects. They must also elaborate and co-ordinate their national legislation, policies and measures to a standard that aims to reduce emissions. The instrument also encourages Parties to use technology that is environmentally

⁵⁰⁶ Ibid, Article 2.

⁵⁰⁷ Ibid.

⁵⁰⁸ Ibid.

⁵⁰⁹ Ibid, Article 2 (1) (a) (vi).

⁵¹⁰ Ibid, Article 2 (1) (a) (iii).

⁵¹¹ Ibid, Article 2 (1) (a) (iv).

⁵¹² Ibid, Article 3 (1).

friendly. In addition, the Parties are required to develop adaptation programmes, policies, measures and create international reporting mechanisms to protect carbon reservoirs and sinks.⁵¹³ The Parties included in Annex-I are required to ensure that their anthropogenic carbon equivalent to GHG listed in Annex-A will not exceed the assigned maximum target or amount according to the provisions of the Article. They are also required to reduce their gas emissions 5 per cent below (though this is divided differently for different countries - as Annex-B countries) the 1990 level, a goal to be realised in 2020.⁵¹⁴

The Parties are also required to show that there is an improvement in their duty of reducing GHG emissions. The Party in Annex-I provide data to the SBSTA to establish its levels in 1990 so that targets can be made on what amount needs to be reduced annually currently. The Parties are encouraged to give information of their major sources of human-induced emissions and land-use changes that can cause an increase in emissions and loss of sinks. If the Parties fail to reduce the emissions; on this the international enforcement machinery is currently weak.⁵¹⁵ The enforcement includes naming and shaming or being labelled a non-compliant. In any way, there is no legal safeguard to assess whether Annex-I countries carry their discretion in a sustainable and environmentally reasonable manner.

Furthermore, any Party in Annex-I undertaking the duty to reduce emissions (this has to do with the process of acquiring/transferring emission reduction units) should notify other Parties and make sure that they approve of the project; that such project will reduce emissions; comply with Article 5 and 7; and getting the emission reduction units shall be a national project in order to meet Article 3.⁵¹⁶ The Parties in Annex-I can also allow for legal entities to participate in actions that can lead in reducing emissions under its responsibilities.

The Parties are encouraged to take common but differentiated responsibilities⁵¹⁷ in their regions or national development priorities.⁵¹⁸ These decisions are taken to achieve sustainable development, taking into account the provisions of Article 3, 4, 5, and 7. The Protocol requires Parties to formulate cost-effective programmes that reduce emissions, with models that reflect

⁵¹³ Ibid, Article 10 (b).

⁵¹⁴ Ibid, Article 3 (1).

⁵¹⁵ Ibid, Article 3 (5).

⁵¹⁶ Ibid, Article 6 (1).

⁵¹⁷ Common but differentiated responsibilities is a concept that describes the differentiated responsibilities amongst Parties.

⁵¹⁸ See note 52, Article 10.

their socio-economic conditions. These programmes should be implemented, published and updated in national legislation and policies.

Parties are also encouraged to provide for funds for reducing emissions through either technological innovation or the formulation of policies. They must also co-operate on scientific and technical research which can involve the promotion of the development and maintenance of systematic observation systems or development of data archives that will reduce uncertainties in the climate system. Furthermore, they are required to co-operate at the international level using the Convention bodies to provide educational and training programmes that strengthen national capacities, mainly human institutions for developing countries. In Article 18, the Protocol states that the COP shall decide what should be done to Parties who do not participate and comply with the Protocol.

The Kyoto Protocol is flexible as it offers three innovative market-based mechanisms for reducing emissions, namely the Joint Implementation (JI, Article 6), the Carbon Emissions Trading Market and the Clean Development Mechanism (CDM, Article 12).⁵¹⁹ The emissions trading mechanisms allow Annex-I Parties to sell and buy carbon credits amongst themselves. The JI encourages Annex-I Parties to invest in programmes and projects in other Parties in Annex-I that are reducing emissions (clean technology, energy and enhancing sinks). The CDM permits Parties to gain emission credits by supporting and investing in non-Annex-I Parties. Developing countries can take programmes under CDM, but have no obligation to reduce emissions. The JI and CDM mechanisms allow developed countries to acquire carbon emission credits by enhancing, supporting and sponsoring CDM and JI projects in developing countries. However, unlike the CDM, JI projects are specific to countries that have emission reduction commitments under the Kyoto Protocol.

Furthermore, in terms of the Protocol, CDM developed countries can purchase carbon offset projects in developing States to meet part of their GHG reduction caps. The Parties are also required to sell carbon offsets and the unilateral GHGs emission offset programmes in host countries. This programme of CDM is a market-based project mechanism which is driven by

⁵¹⁹ Jaffe J and Stavins, 'Linkage of tradable permit systems in international climate policy architecture', in Aldy E J and Stavins N R (eds), *Post-Kyoto international climate policy: Implementing architectures for agreement, Research from the Harvard project on international climate agreements*, (2010), Cambridge University Press, United Kingdom, 119-150, page 126.

demand for credit-certified GHG emission reductions from developed Parties being supplied by GHGs offset projects from developing Parties.

The Protocol requires Parties to use clean energy when starting CDM projects. This also means using less fossil fuels and wood energy, starting afforestation projects and reforestation programmes. In addition, the CDM should promote sustainable development projects and programmes in the host countries through financial investment, eco-friendly technology use and knowledge transfer.

The Parties to the Kyoto Protocol are also required to account and reduce emissions through the sustainable development of the Land Use, Land-Use Change and Forestry (LULUCF) programme.⁵²⁰ The LULUCF is a process that enables a country to offset its carbon emissions by carbon sequestration. The current system of the LUUCF is well governed by Article 3(3) and 3(4). Article 3(3) states that emissions should be removed with the contribution of sinks, sources and as a result of afforestation and reforestation, and the reduction of deforestation.⁵²¹ Article 3(4) refers to LULUCF's additional activities: these can be included in flexible mechanisms such as the JI and CDM. These activities can include afforestation, reforestation and deforestation which have happened since 1990. These activities and their application are mandatory for Annex-A countries.

The JI allows all LULUCF activities, whilst in the CDM only the reforestation and afforestation projects might be counted. These articles allow Parties to the Protocol to trade their emissions and certified emission reductions with other Parties. They also can generate emission credits which can be through abatement projects in the countries that are developed (JI) and still developing countries (CDM). The CDM can provide carbon credits needed for offsetting GHGs emission in developing countries. Unlike the UNFCCC, the Protocol requires and commits

⁵²⁰ Fry I, 'If a tree falls in a Kyoto forest and nobody is there to hear it, will it be accounted for? An insider's view of the negotiations surrounding land use, land-use change and forestry for the second commitment period of the Kyoto protocol', Volume 20, Issue 2, (2011), *Review of European Community & International Environmental Law*, 111-224, page 123.

⁵²¹ See note 52. Kyoto Protocol, Article 3(3): - "*The net changes in greenhouse gas emissions by sources and removals by sinks resulting from direct human-induced land-use change and forestry activities, limited to afforestation, reforestation and deforestation since 1990, measured as verifiable changes in carbon stocks in each commitment period, shall be used to meet the commitments under this Article of each Party included in Annex I. The greenhouse gas emissions by sources and removals by sinks associated with those activities shall be reported in a transparent and verifiable manner and reviewed in accordance with Articles 7 and 8*".

developed Parties to reduce GHG emissions. It sets out binding targets for the developed countries to reduce emissions from forest degradation and deforestation.⁵²²

The Annex-I Parties are also required to manage their croplands or grasslands sustainably and continue these projects for the full recognised commitment period. In Bali, COP-13 Parties recognised the further need to reduce emissions from forest degradation and deforestation in developing countries. In 2009, the Bali Action Plan was established and the policy approaches and incentives required reducing emissions from forest degradation and deforestation. The COP-16 in Cancun (2010) recognised the need to reduce GHGs emissions from forests and no further action was taken.

The Protocol moved a step further than the UNFCCC by supporting climate change education, public awareness, improving quality of data in terms of emissions, afforestation and deforestation, environmental friendly technology and training the public about climate change. It required its Parties to enhance energy efficiency, reduce emissions especially in the transport sector, promoting sustainable agriculture, and the implementation of domestic policies to reduce emissions.

The Parties are also encouraged to reduce any project in their State that will cause adverse environmental impacts.⁵²³ They are 'required to design a document' in their countries on the analysis of environmental impacts of various project activities.⁵²⁴ However, upon further looking on some of the COPs decisions that have taken place, the impact assessment is not undertaken every time but is done only when adverse environmental effects are suspected. Firstly, this goes against the prevention and protection principles of environmental law. Secondly, how would a decision be made as to whether certain projects would not affect the environment - at first sight such projects might seem environmental friendly but certain things might lead to environmental degradation, thus the adverse effects to the environment.

The COPs gives so much power to the Parties to decide whether to have an impact assessment in national legislation. Some States may decide they do not want to and there are no interventions which can be made to reduce Parties' sovereignty. Most of the developing

⁵²² Feng L and Buhi J, 'The Copenhagen accord and the silent incorporation of the polluter pays principle in international climate law: An analysis of Sino-American diplomacy at Copenhagen and beyond', 18 (1) (2010), *Buffalo Environmental Law Journal*, 1-74, page 3.

⁵²³ See note 38, page 453.

⁵²⁴ *Ibid.*

countries are usually too economically and politically weak to adopt this responsibility, and might therefore take the easier and the cheapest options which is not to have an impact assessment recognising instruments.

The Marrakesh Accords also require Annex-I Parties to report on the contributions which they have made on administrative procedures and national laws in recognising Article 3.3 and 3.4 of the Kyoto Protocol. This scope is only limited in listing the national legislation which a Party enacts, the Party is not obliged to give information on the impacts and effects of LULUCF activities. No assessment mechanisms have been established to prove if a Party has stated the truth in their reports or the reliability of this national reporting of LULUCF activities. There are no minimum concrete standards, thus cannot limit or prevent unsustainable land-use activities.

In addition, the Accords recognise the use of afforestation and reforestation projects; however Decision 19/CP.9 of the COP-9⁵²⁵ tries to reduce the use of GMOs in afforestation and afforestation projects.⁵²⁶ It states that the host countries and Annex-I countries should evaluate in accordance of national laws and potential risks of GMOs. The responsibility is placed upon the host countries and Annex-I countries. The Annex-I countries are only interested in the financial interests in credits and may not share the view of forest or biodiversity protection.

3.3 The Paris Agreement

The Paris Agreement⁵²⁷ was adopted under the UNFCCC and it came into force on 4 November 2016. It has been developed to reduce GHG emissions, and increase climate change adaptation, and a proper effective funding scheme that will start in the year 2020. The goal refers to limiting the amount that temperatures are allowed to rise above pre-industrial levels. The instrument is to adapt to the effects of climate change, resilience and reduce GHG emissions.

The objectives of the Agreement seek to strengthen the response to climate change, sustainable development and the eradication of poverty. The Parties are required to set out plans to reduce

⁵²⁵ UNFCCC, Decision 19/CP.9 of the COP-9. See website <http://unfccc.int/documentation/decisions/items/3597.php?such=j&volltext=19/CP.9>. Conference of the Parties report of the Conference of the Parties on its ninth session, held at Milan from 1 to 12 December (2003). See also <http://unfccc.int/resource/docs/cop9/06a02.pdf#page=13>. Accessed 16 November 2017.

⁵²⁶ Woolley D *et al*, *Environmental law*, 2nd (ed), (2009), Oxford University Press, United Kingdom, page 349.

⁵²⁷ UNFCCC, Paris Agreement. See website https://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf. Accessed on 28 October 2017.

carbon emissions, co-ordinate and co-operate internationally and regionally, in order to ensure these goals. For forest protection, Article 5 is important and interesting; the Parties are encouraged to take action to conserve and enhance sinks and GHG reservoirs (as detailed above, forests are carbon sinks and reservoirs). They are required to take action against deforestation, and reduce emissions from forest degradation and deforestation.

The Agreement came into force in November 2016 under the UNFCCC, which is under the climate change regime. During the writing of the thesis, it was still too early to make conclusions and an analysis of what this Agreement could provide for the forest regime. It has not developed any agreements, initiatives, projects or programmes specifically for forest protection. This Agreement is important because of how it managed to gather numbers under its name and be agreed upon. This shows that with proper capacity building and public awareness or education on the functions of forests, an agreement is more likely to be adopted in the future on forest protection.

3.4 REDD

In 2005, at the UNFCCC Conference, Parties were very successful in Montreal during COP-11 in developing REDD which is a programme designed to reduce emissions from deforestation and forest degradation. It provides financial incentives for reducing GHGs from deforestation.⁵²⁸ REDD is a strategy that allows countries to reduce GHGs emission from clearing their forests, reducing the carbon stock to a certain level, then receiving a reward or compensation.⁵²⁹

The mechanism in 2005 provided a novel way of reducing deforestation whilst also providing co-benefits for example intra-generational equity; increased finance in biodiversity conservation; prevention of desertification and providing financial incentives for indigenous communities who live in, near or use forest ecosystems, services and products.⁵³⁰ This was a novel way because forests were seen as valuable assets whilst standing rather than merely as wood or furniture, and cleared forest land for agriculture or other developmental projects.⁵³¹

⁵²⁸ Eleventh Session of the Conference of Parties to the United Nations Framework Convention on Climate Change, Montreal, 28 November-9 December, (FCCC/CP/2005/MISC.1), 11 November 2005 at 7.

⁵²⁹ Minang A P and Noordwijk van M, 'Design challenges for achieving reduced emissions from deforestation and forest degradation through conservation: Leveraging multiple paradigms at the tropical forest margins', 31 (2013), *Land Use Policy*, 61-70, page 63.

⁵³⁰ Lang M K, 'Making standing forests fungible: Overcoming the definitional problems in developing a REDD+ mechanism', 30 (2013), *Wisconsin International Law Journal*, 855-870, page 857.

⁵³¹ *Ibid.*

This strategy came under the climate change regime (UNFCCC), it is financially rewarding for Parties who reduced emissions from deforestation and forest degradation.

This was paved by the COPs decision in 2007 and also the Bali Action Plan which opened the door for more discussions on REDD activities. At the COP-16 (2010) in Cancun, Mexico, developing countries were encouraged to reduce GHG emissions by introducing actions to reduce forest degradation and deforestation. A decision was made to reduce emissions from emissions at the COP-16⁵³². The Parties agreed to create, develop and implement action plans and transparent national forest laws with the monitoring systems and reporting activities listed above.

The Bali Action Plan in 2007 under Decision 1/CP.13:1 (B)⁵³³ and Decision 2/CP.13⁵³⁴ required nations to enhance their action plans to mitigate climate change and stimulate approaches that reduced emissions from deforestation in developing countries. In Copenhagen (2009), Decision 4/CP.15⁵³⁵ methodologies and guidance to reduce deforestation and forest degradation were formed. In Cancun (2010), Decision 1/CP.16 Section C⁵³⁶ introduced policy approaches and positive incentives on various issues relating to reducing emissions and forest degradation.

In 2006, the UNFCCC's SBSTA held workshops on the REDD. They also added enhancing Sustainable Forest Management (SFM) to the list of activities of REDD; and produced a paper in August 2006 on how to enhance forest carbon stocks. By this time, the UNFCCC COPs recognised that communities must benefit from goods and services from forest ecosystems. The Parties of the UNFCCC (Ad Hoc Working Group on Long-term Cooperative Action (AWG-LCA-13)) encouraged developing countries to reduce emissions. As mentioned above,

⁵³² UNFCCC. See website

http://unfccc.int/meetings/cancun_nov_2010/session/6254/php/view/documents.php#c. Accessed 17 October 2017.

⁵³³ UNFCCC, Conference of the Parties, Report of the Conference of the Parties on its thirteenth session, held in Bali from 3 to 15 December 2007, Part Two: Action taken by the Conference of the Parties at its thirteenth session, Decisions adopted by the Conference of the Parties. See website

<http://unfccc.int/resource/docs/2007/cop13/eng/06a01.pdf>. Accessed 17 October 2017.

⁵³⁴ Ibid.

⁵³⁵ UNFCCC, Conference of the Parties, Report of the Conference of the Parties on its fifteenth session, held in Copenhagen from 7 to 19 December 2009, Part Two: Action taken by the Conference of the Parties at its fifteenth session, Decisions adopted by the Conference of the Parties. See website

<http://unfccc.int/resource/docs/2009/cop15/eng/11a01.pdf>. Accessed 17 October 2017.

⁵³⁶ UNFCCC, Conference of the Parties Report of the Conference of the Parties on its sixteenth session, held in Cancun from 29 November to 10 December 2010, Part Two: Action taken by the Conference of the Parties at its sixteenth session, Decisions adopted by the Conference of the Parties. See website

<http://unfccc.int/resource/docs/2010/cop16/eng/07a01.pdf>. Accessed 17 October 2017.

at the COP-13 of the UNFCCC in Bali in 2007⁵³⁷, the Parties adopted Decision 1/CP.13⁵³⁸ of the Bali Action Plan and also Decision 2/CP.13⁵³⁹. The Bali Action Plan Article 1 (b) (ii)⁵⁴⁰ called for the increase of approaches and positive incentives of REDD which resulted in REDD+. The new concepts that prompted the REDD+ were that of enhancing forests carbon stocks; the reduction of emissions from deforestation; reduction of emissions from forest degradation; conservation of forest carbon stocks; sustainable management of forests and enhancement of forest carbon stocks; increasing forest cover and conservation.

During the Copenhagen (2009), COP-15⁵⁴¹ to the UNFCCC, the policymakers added more activities which were known as the Copenhagen Accord⁵⁴².⁵⁴³ The COP-15 agreed on the need to provide positive incentives to reduce emissions from deforestation and forest degradation. They also agreed on the need to enhance more GHG emission removers by forests. The Parties then agreed on the immediate establishment of the REDD+ mechanism. This allowed the mobilisation of more financial resources from industrialised countries.

There are several REDD+ opportunities that have to be considered. Firstly, there is a need to reduce deforestation for reducing emissions. This is also meant by reducing deforestation or reversal of human actions in the conversion of forest lands. Secondly, the REDD+ activities aim to reduce the emissions from degradation of forests. Thirdly, there is a need to conserve forest carbon stocks. This is because forests are carbon pools and reservoirs, and thus they must be protected to maintain these functions. This is ideal for maintaining the carbon levels and the

⁵³⁷ UNFCCC, Bali Climate Change Conference - December 2007. See website

http://unfccc.int/meetings/bali_dec_2007/meeting/6319.php. Accessed 16 October 2017.

⁵³⁸ UNFCCC, Conference of the Parties, Report of the Conference of the Parties on its thirteenth session, held in Bali from 3 to 15 December 2007. See website

<http://unfccc.int/resource/docs/2007/cop13/eng/06a01.pdf#page=3>. Accessed 16 October 2017.

⁵³⁹ UNFCCC, Conference of the Parties. Report of the Conference of the Parties on its thirteenth session, held in Bali from 3 to 15 December 2007. Decision 2/CP.13 reducing emissions from deforestation in developing countries: approaches to stimulate action. See website

<http://unfccc.int/resource/docs/2007/cop13/eng/06a01.pdf#page=8>. Accessed 16 October 2017.

⁵⁴⁰ Bali Action Plan. See website https://unfccc.int/files/meetings/cop_13/application/pdf/cp_bali_action.pdf. Accessed 16 October 2017. Bali Action Plan Article 1 (b) (ii) states that: - "Nationally appropriate mitigation actions by developing country Parties in the context of sustainable development, supported and enabled by technology, financing and capacity-building, in a measurable, reportable and verifiable manner".

⁵⁴¹ UNFCCC, Copenhagen Climate Change Conference - December 2009. See website

http://unfccc.int/meetings/copenhagen_dec_2009/meeting/6295.php. See also Conference of the Parties Report of the Conference of the Parties on its fifteenth session, held in Copenhagen from 7 to 19 December 2009. See website <http://unfccc.int/resource/docs/2009/cop15/eng/11a01.pdf>. Accessed 16 October 2017.

⁵⁴² UNFCCC, Conference of the Parties, Report of the Conference of the Parties on its fifteenth session, held in Copenhagen from 7 to 19 December 2009. See website

<http://unfccc.int/resource/docs/2009/cop15/eng/11a01.pdf>. Accessed on 16 October 2017.

⁵⁴³ Carlarne P C, *Climate change law and policy, (EU and US Approaches)*, (2010), Oxford University Press, United Kingdom, page 352.

carbon stocks in the atmosphere balanced. Fourthly, forests need to be sustainably managed to reduce deforestation and degradation. The fifth REDD+ activity is the enhancement of forest carbon stocks. This includes forest management which denotes afforestation and reforestation of degraded forests programmes must be uplifted.

The implementation of the REDD+ is in three phases, which include (1) the development of strategies and national action plans, policies, capacity-building and measures; (2) these policies and measures must be implemented nationally; and (3) based on the results, action must be taken and results measured and verified. The first phase is called the “readiness phase” and is well supported by the Forest Carbon Partnership Facility (FCFC) of the World Bank. The REDD+ activities are controlled by governments, with sub-national activities developed in co-operation with other government agencies, which can also be promoted by local private and public sectors, or by a combination of both. Furthermore, the REDD+ incentives resulting from successful implementation would be issued exclusively to governments by the UNFCCC.

The core system of the REDD+ is an example of a Payment for Environmental Services (PES). The notion is that the environment provides for ecosystem services to humans. Carbon sequestration by forests is another of these examples that has been expressed and advanced by the MEA. The REDD+ represents an international PES scheme with the theme that developing countries will receive financial incentives for reducing deforestation and degradation, thus mitigating climate change through emission reduction programmes. It is a financial incentive which is based on climate change mitigation and it was proposed by the United Nations Environmental Programme (UNEP), World Bank, Global Environmental Facility (GEF) and NGOs. It seeks to integrate natural forests into the scheme of carbon sequestration. Thus, it is an adaptive strategy which has been put forward to counter the effects of climate change. The GEF helps to fund developing countries and funds projects which seek to protect the global environment. They also provide new and additional funding incentives to meet the cost of measures to achieve any agreed environmental benefits.

The public funders have matched the investments of the private sector by contributing financially to reduce emissions from deforestation and forest degradation. The investors pay countries which have taken measures to conserve forests and sell their carbon credits to countries who wish to offset GHG emissions in their own countries, with the promises to conserve forests, mitigate climate change and alleviate climate change. Forests will be valued

by placing a price tag on them; this will shift the economic balance of forest land owners and hopefully start conserving forests rather than converting them into other land uses.

The REDD+ mechanism provides incentives from developed UNFCCC Parties to developing Parties for reducing emissions and GHG sinks and reservoirs. Many developing countries can also use these incentives for providing communities with environmentally friendly alternatives. They can also provide for social amenities that will improve the life of indigenous people who use forest products and services. The financial incentives could also improve spatial planning and land use governance. This can also achieve reforestation, afforestation and SFM projects, thus their main co-benefits. The financial transfer will compensate developing countries that will lose developmental projects, investments and opportunities which were lost by protecting forest lands.

In Warsaw (2013), Decision 11/CP.19⁵⁴⁴ and Decision 14/CP.19⁵⁴⁵ introduced the much needed modalities for national forest monitoring systems and application modalities for measuring, reporting and verifying. The Paragraph 2 of Decision 11/CP.19⁵⁴⁶ states that Parties' national forest monitoring system must take into account the most recent IPCC guidance and guidelines to estimate forest-related activity emissions by their sources and sinks. Paragraph 3 states that the monitoring system should provide robust data and information that is consistent, suitable for measuring the transparency of emissions from forests, removals of carbon sinks, forest carbon stock and forest land changes. The developing countries who are seeking to benefit from funds are now required to submit a technical annex under Paragraph 7.

In Decision 14/CP.19, Paragraph 5 states that Parties are required to improve on data and methodologies that are consistent or appropriate and contain appropriately updated forest reference emission levels. The COP-19 in 2013 (Warsaw) produced seven decisions on REDD+, this is known as the Warsaw Framework on REDD-plus.⁵⁴⁷ The decisions were mainly on work programmes based on results-finance, co-ordination, implementation,

⁵⁴⁴ UNFCCC, Conference of the Parties Report of the Conference of the Parties on its nineteenth session, held in Warsaw from 11 to 23 November 2013, Part two: Action taken by the Conference of the Parties at its nineteenth session. See website <http://unfccc.int/resource/docs/2013/cop19/eng/10a01.pdf>. Accessed 17 October 2017.

⁵⁴⁵ Ibid.

⁵⁴⁶ Ibid.

⁵⁴⁷ UNFCCC, Warsaw Framework for REDD-plus. See website http://unfccc.int/land_use_and_climate_change/redd/items/8180.php. Accessed 17 October 2017.

monitoring systems, information safeguards, and technical assessment, reporting and verifying data on drivers and reducing deforestation and forest degradation.

The 2011-2015 objectives sought to move to long-term goals by encouraging Parties to elaborate and implement National REDD+ Strategies which achieve REDD+ readiness, including transformation of land-uses and also performance based payments. The REDD+ strategies also require Parties to undertake an impact assessment and strategic environmental assessments on all economic developmental programmes to reduce forest degradation and deforestation.

Furthermore, REDD+ emphasized the use of protected areas for the protection of forests. This is meant to reduce deforestation and conserve biodiversity. Protected areas also play a critical part in maintaining forest ecosystem services and products. The management of buffer zones in land use is also of vital importance in socio-economic development goals. Consequently, protected areas management also tries to conserve and protect participation, revenue sharing, and eco-tourism.⁵⁴⁸

The REDD+ initiatives also sought to reduce poverty. Poverty increases deforestation, forest degradation and carbon emissions. By increasing incentives to developing countries, a reduction of carbon emissions is achieved. Many poverty stricken communities rely on wood fuel and wood as house building material. Thus, incentives will introduce other forms of fuel and allow communities to use environmentally friendly technology which allows them to re-use their agricultural lands rather than cut down more forest lands.

Furthermore, developing countries were urged to address drivers of deforestation and forest degradation, gender equality, forest governance, land tenure in their national strategies and development plans. They were also required to recognise the effective participation of stakeholders relevant to reducing deforestation and also indigenous communities. This was a step forward from REDD to REDD+, as previously these activities were not included. In addition, these policies and approaches of REDD+ activities are consistent with those of the CBD, to conserve biodiversity and the sustainable use of natural resources.

⁵⁴⁸ Dickson B and Kapos V, 'Biodiversity monitoring for REDD+', 4 (2012), *Current Opinion in Environmental Sustainability*, 717-725, page 717.

Importantly, progress has been made outside the UNFCCC to elaborate more on environmental standards, safeguards for the organisations that advise Parties, funding the framework and development of REDD+. These have included the Forest Carbon Partnership Facility's Strategic Environmental and Social Assessment Framework; the REDD+ Social and Environmental Standards of the Climate, Community and Biodiversity Alliance (CCBA) and CARE International, other independent research institutions and guidance documents for REDD+ programmes. This has been a positive incentive, and has improved forest governance with additional co-benefits.

The climate change regime has been productive in elaborating the functions and issues affecting forest protection. Though the UNFCCC did not focus directly or specifically on this matter, they are programmes such as REDD and REDD+ that are dedicated to reduce deforestation and forest degradation. These programmes are however voluntary to the UNFCCC Parties. The Kyoto Protocol is also important since it came with market incentives that were meant to lure and deter developing countries from deforestation. However, the programmes are not binding and the Kyoto Protocol has not achieved its goal. These issues are discussed below under the section Critical Analysis of international environmental law. Further, the thesis will now look at forests and desertification in the next section.

4. Forests and the Mitigation of Desertification

Trees are well-known for reducing surface water run-off and increasing soil compatibility by root cover.⁵⁴⁹ Trees also reduce flooding by protecting water resources and reducing mud slides. Evapotranspiration also aids in the hydrological cycle by facilitating rainfall. These processes also reduce atmospheric and earth surface temperatures. The UNCCD realised the importance of forests in reducing desertification and mitigating the effects of droughts.

Forest protection will also reduce desertification, thus the UNCCD includes a number of articles related to forest management. Deforestation also is a major cause of land degradation, soil erosion and eventually leading to desertification. The main objective of UNCCD is to reduce and mitigate desertification. The Parties to the UNCCD are required to reduce deforestation and protect their forests. The UNCCD recognises the need to protect natural forests in its Articles. The Thematic Programme Networks 2 and 4 were Sessions which focused on how to protect soil and forests in Asia, Latin America and Africa. The Parties to

⁵⁴⁹ As seen on 36.

the UNCCD are encouraged to adopt strategies and integrated approaches that reduce deforestation and desertification.

The UNCCD encourages its Parties to participate in projects that are sustainable and reduce forest degradation. The Parties are also encouraged to initiate national level action projects and programmes that reduce deforestation and desertification. The instrument also encourages Parties to improve land productivity and sustainable agricultural practices. They are also required to rehabilitate degraded land, which means that Parties must have plans for afforestation and reforestation. In addition, Parties are required to co-operate regionally or internationally with other Parties and reduce land degradation.⁵⁵⁰

The UNCCD expects its Parties to manage land and natural resources in a sustainable way and within the ambit of sustainable development. SFM is also a principle of the Articles of UNCCD and Parties are required to protect their forests nationally and regionally in order to tackle land degradation. The Parties are also required to raise public awareness on the importance of forests in the ecological field and the variety of functions which forest ecosystems provide for the ecology.⁵⁵¹

The Thematic Priorities under the UNCCD state that forests are the first step towards reducing desertification and drought. Furthermore, the sustainable use of forest goods, services and ecosystems have the potential to reduce poverty during times of droughts. This reduces poverty in many rural areas where communities are substantively affected by droughts. The CPF has stated that about two billion hectares of forest land needs to be rehabilitated to reduce desertification.⁵⁵²

The UNCCD defines land degradation in Article 1 (f) as:

⁵⁵⁰ Olsson, L., H. Barbosa, S. Bhadwal, A. Cowie, K. Delusca, D. Flores-Renteria, K. Hermans, E. Jobbagy, W. Kurz, D. Li, D.J. Sonwa, L. Stringer, 2019: Land Degradation. In: *Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems* [P.R. Shukla, J. Skea, E. Calvo Buendia, V. Masson-Delmotte, H.-O. Pörtner, D. C. Roberts, P. Zhai, R. Slade, S. Connors, R. van Diemen, M. Ferrat, E. Haughey, S. Luz, S. Neogi, M. Pathak, J. Petzold, J. Portugal Pereira, P. Vyas, E. Huntley, K. Kissick, M. Belkacemi, J. Malley, (eds.)]. In press. See website on https://www.ipcc.ch/site/assets/uploads/sites/4/2019/11/07_Chapter-4.pdf. Accessed on 16 January 16, 2021.

⁵⁵¹ See website on <https://www.unccd.int/actions/actions-around-world>. Accessed on 16 January 2021.

⁵⁵² PRESS RELEASE, Collaborative Partnership on Forests: International institutions call for increased investments for the arid zone forests. See website on <http://www.fao.org/forestry/27846-0d0f33da95a5984d5cbaca1f4b0962670.pdf>. Accessed on 16 January 2021.

“reduction or loss, in arid, semi-arid and dry sub-humid areas, of the biological or economic productivity and complexity of rainfed cropland, irrigated cropland, or range, pasture, forest and woodlands resulting from land uses or from a process or combination of processes, including processes arising from human activities and habitation patterns, such as:

- *soil erosion caused by wind and/or water;*
- *deterioration of the physical, chemical and biological or economic properties of soil;*
and
- *long-term loss of natural vegetation;”*

The UNCCD in Article 1 (f) recognises the change in activity or use of the land. Forest lands are recognised under this article and are said to also be protected from degradation. However, degradation is not defined in Article (1). It must also be recognised that if forests are degraded or deforested, they then lose their ecosystem functions, services and the products which they provide. The instrument goes further in stating that mitigating steps that can “relate to forests” in Article 1 (d), which state that:

“mitigating the effects of drought” means activities related to the prediction of drought and intended to reduce the vulnerability of society and natural systems to drought as it relates to combating desertification”. These can be stated as deforestation activities that are mainly caused by human-induced land-use changes.

The UNCCD also promotes the prevention of forest degradation through the use of sustainable land and effective forest management practices, and the restoration of forest degraded areas. Parties are required to report on the status of their forest land and cover, this is an important topic for policy-makers who look at the effects or signs of desertification. The Parties are required to introduce science and technology that is environmentally friendly and minimizes forest degradation. They are also required to raise awareness of the effects of deforestation that may lead to desertification. They should also report on the national action plans which they have implemented to reduce desertification and drought. The Performance Review and Assessment of Implementation⁵⁵³ (PRAIS) portal has been created as an important reporting tool which helps Parties to submit their national reports.

⁵⁵³ UNCCD. See website <http://www.unccd.int/en/media-center/Multimedia/VideoGallery/Pages/Performance-review-and-assessment-of-implementation-system-PRAIS.aspx>. Accessed on 17 October 2017.

At the COP-13 (2017) in China⁵⁵⁴, Parties agreed to rehabilitate more land and reduce degradation. They also agreed on the new UNCCD 2018-2030 Strategic Framework which sets out commitments to achieve Land Degradation Neutrality (LDN)⁵⁵⁵ to restore the productivity of degraded land. The COP-12 (2015), in Ankara Conference gave birth to the first global private sector fund which will implement the Sustainable Developmental Goals (SDGs).⁵⁵⁶ This will bring funds from public and private sectors to fund the activities of the UNCCD under the LDN.

In 2012, the UNCCD Secretariat proposed to the world to adopt a Zero Net Land Degradation (ZNLN) by 2030.⁵⁵⁷ It was explained as a global shift in land stewardship, reducing degradation in new areas and restoring land facing early signs of desertification. This appealed to the policy-makers since they were promised more funds under this instrument and programme.

However, the problem was turning a slogan into concrete practical action. This idea was never backed by science and legal integrity, rendering as an effective political diversion. Under scrutiny from ecologists and political scientists, the idea seemed to crumble since it had no valid back-up or evidence for support that they will be ZNLN. Moreover, the fight against desertification is not going well: estimates that about 50 per cent of drylands seen currently as agricultural cultivation are moderately or severely degraded.⁵⁵⁸ It also estimates that about 12 million hectares of productive land becomes barren yearly because of desertification and drought.

5. Forest trees as Endangered Species

Due to deforestation and the international commercialisation of wood trade, many tree species now face extinction and have been listed as vulnerable, threatened with extinction and endangered species in the CITES⁵⁵⁹. CITES only pertains to international trade. It imposes no obligations concerning harvesting or domestic trade. This instrument is one of the largest

⁵⁵⁴ UNCCD COP13, Ordos, China, 2017, Conference of the Parties: Thirteenth session Ordos, China, 6-16 September 2017. See website <http://www2.unccd.int/convention/conference-parties-cop/unccd-cop13-ordos-china>. Accessed 17 October 2017.

⁵⁵⁵ UNCCD, Tapping opportunities for LDN transformative action. See website <http://www2.unccd.int/news-events/tapping-opportunities-ldn-transformative-action>. Accessed 17 October 2017.

⁵⁵⁶ Sustainable Development Goals. See website <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>. Accessed 17 October 2017.

⁵⁵⁷ UNCCD, UNCCD Policy Brief: Zero Net Land Degradation. See website <http://www.unccd.int/en/media-center/MediaNews/Pages/highlightdetail.aspx?HighlightID=110>. Accessed 17 October 2017.

⁵⁵⁸ See website <https://www.iucn.org/resources/issues-briefs/drylands-and-land-degradation>. Accessed 2 February 2019.

⁵⁵⁹ See note 50.

multilateral agreements for the conservation of species and regulates transboundary trade through a reciprocal system of permits and licenses. The CITES is an international instrument that regulates endangered species to reduce over-exploitation and extinction. These species can be flora or fauna. It requires Parties to protect species that are endangered and threatened by extinction.

Approximately 33 000 plant and animal species that are threatened, endangered or facing extinction by international trade are listed in the Appendices of the CITES. Consequently, 28 000 of these are plant species which constitutes about 85 per cent of threatened and endangered species. To trade in these species (domestic trade is not restricted) products, one needs a special permit, license or certificate. In the instrument, species are listed in Appendices subject to different types of trade controls that reduce over-exploitation, this maybe in Appendix I, II and III.

Appendix I of the CITES lists some of the well-known species threatened with extinction. International trade for commercial purposes is prohibited, however, these species can be traded non-commercially only in exceptional circumstances, with prior grant and a written permit.⁵⁶⁰ These species can only be traded for exceptional circumstances, such as scientific research (the point is that international trade cannot occur without an export permit and an import permit, and both can only be issued once certain requirements have been satisfied). In addition, these permits can only be given by the Management Authorities of the country responsible for these species.⁵⁶¹ This permit should only be given if that country is satisfied, the export/import must not be detrimental to the species' existence. These permits are a precautionary and a preventative measure to reduce trading and the over-exploitation of a specie facing extinction.⁵⁶² Thus, the international trading of these species is limited unless legal recourse is sort and a judgment is provided.

Appendix II of the CITES lists species that are not currently at risk of extinction, but may become so if continued trading is not controlled. Trading of these species now requires presentation and further documentation on the specie numbers and its populace. There are also requirements of an export permit or re-export certificate from a party seeking to trade in these species.⁵⁶³ The Parties are required to present an export permit, and it can only be granted if

⁵⁶⁰ Ibid, Article II.

⁵⁶¹ Ibid.

⁵⁶² Ibid, Article III.

⁵⁶³ Ibid, Article II (2) and IV.

the Scientific Authority of the 'owner' State issues a non-detrimental finding. The procedure is intended to ensure that the export of species or their products will not be detrimental for their survival. In principle this is the idea, yes. However, whether trade is non-detrimental in practice is another theoretical story and non-detriment findings are really problematic in some States. The State will look at the information provided on how these species have continued to breed or the population in their respective country (also, there are multiple factors that should be taken into account and this isn't a discretionary matter). The State can also look at the distribution, recent trade information about the species and various ecological factors.

Appendix III of the CITES is for species that are not listed in Appendix I and II.⁵⁶⁴ These are species that are listed by their States that have stricter national legislation than what is required by the CITES. States can list those species and other Parties must regulate the trading of those species. These are species only subject to regulation within the territory of a State which is a Party to the CITES. There is a need for a CITES export permit (importantly, no non-detriment finding is required) when the specie originates from a country that has requested such specie be included on Appendix III. A certificate of origin which is issued by the CITES Management Authority in the exporting or re-exporting country can also be issued.

The well noted enforcement provision in the CITES is Article VIII (1). It requires all Parties to take appropriate action to enforce the provisions of the CITES and reduce or prohibit the trading of specimens. These include the measures on how to penalize trading, in possession, confiscation and return to state of originality. The failure to include penalties in national legislation is a violation of the CITES. Article VIII entails that every Party has an obligation to enact domestic legislation to govern its territory and trade controls. The CITES requires Parties to take appropriate measures, though it does not give uniform provisions on each Party. Each Party must create individual periodic reports on how it has been implementing the instrument. The enforcement mechanism provided by the CITES is based on domestic legislation and enforcement.⁵⁶⁵

The instrument seeks to reduce transboundary trade of threatened species and their derivatives without a permit, license or certificate. This is based on the principle of sustainability. The

⁵⁶⁴ Pallemmaerts M and Bodard K, 'Restricting the import of timber and timber products harvested through illegal logging: A review of relevant provisions of multilateral environmental agreements and precedents in other fields of international law', in Couzens E and Kolari T E (eds), *International Environmental Law-Making and Diplomacy Review*, (2005), Joensuu, University of Joensuu and UNEP, 253-286, page 255.

⁵⁶⁵ See note 50, Article VIII.

process of acquiring certificates and licenses acts a precautionary limitation in that it reduces the amount of people that can be granted such access to trade in these species to sell on the international market. Article IV of the CITES states that the removal of a specimen used for trade will not adversely affect the protection and conservation status of that species. The explicit purpose of CITES – its purpose is simply to attempt to ensure that international trade only occurs to the extent that it is sustainable. It can also mean that a State can officially reduce or prevent the trading of a particular species because it is threatened by extinction.

The legal basis of the CITES sanctions are in Article XIV (1) (a), which expressly gives States the right to strict national and domestic measures regarding trading, possessing, transporting and taking specimens of species that are included in Appendices I to III. Consequently, it is intended to allow states to impose stricter restrictions on trade than are required by the Convention. They are also given the authority to prohibit the removal of such species, such that some tree species cannot be cut down and traded internationally. The Article XIV(1)(a) implicitly states that Parties can impose unilateral economic sanctions by restricting trade or trade bans against those Parties that continue to trade specimens from their country, provided that those sanctions are aligned to the general principles of international law.

Consequently, the species listed in the CITES have been chosen by the Parties to the instrument. Considerable trade still occurs, it just does so within the context of a permitting system. Moreover, the CITES is a treaty with forest implications, it is a binding instrument, thus hard law with firm commitments to its Parties. A number of tree species have been listed under its Appendices, which results in international regulation of trade in the given species. The efforts to reduce illegal logging and international trade in species which are listed under the CITES has also increased among a number of international enforcement bodies.⁵⁶⁶

Countries now exporting timber products need to develop better and current informational bases about their status and dynamics. They would also need to evaluate the potential for the survival and sustaining species harvests by which they can regulate harvesting rates and practices to determine whether to give a permit or not. This would also allow silvicultural

⁵⁶⁶ World Trade Organisation. See website https://www.wto.org/english/tratop_e/tpr_e/tp81_e.htm. TRAFFIC, see website <https://www.traffic.org/what-we-do/projects-and-approaches/promoting-sustainable-trade/sustainable-timber-trade/> and Interpol see INTERPOL website on <https://www.interpol.int/News-and-Events/News/2012/INTERPOL-launches-Project-LEAF-to-combat-illegal-logging-worldwide>. Accessed on 24 February 2019.

practices to allow regrowth and assure regeneration. These measures contribute to the conservation of regional populations and maintain the economic value of forests.

Only Appendix III listing is a unilateral action, and this is done by the exporting state, not the importing state. Listing on Appendix I or II only occurs if supported by a two-third majority of Parties present and voting at a COP. Consumer countries can only import the timber and timber products with a permit, which is original and official. The Parties to the CITES should issue a CITES certificate only for re-exportation when they are satisfied that the wood which is being imported has the required legal and relevant CITES documents.

The CITES could create a favorable outcome on the international arena regarding silvicultural to forests. It opens up the market for other tree species that have never been used as wood and improve entrepreneurial skills in the timber industry, this is done by restricting the already and well-known forest products from the international market. This will minimize extinction of tree species and allow the threatened ones to regrow, reproduce and regenerate. Furthermore, this will reduce deforestation of forest lands where a particular tree species may have thrived pushing timber companies to other territories or even countries. This will also allow for investment, clean and innovative technologies to be used, and increase the information bases for many tree species.

Other incentives have been introduced to deal with the illegal trading of timber and timber products. The USA in 2008 amended the *Lacey Act*⁵⁶⁷ prohibiting the trade of illegal timber and timber products within and outside its borders. The European Union has also developed the Forest Law Enforcement, Governance and Trade Action Plan (FLEGT). It provides measures on how to reduce and exclude illegal timber from the markets. Furthermore, it offers ways to improve supply and increase the trade of legal timber and timber products. It also offers marketing avenues and entrepreneurship to increase the demand for timber and timber products from legal sources.

In addition, the European Union Timber Regulations (EUTR) and Voluntary Partnership Agreements (VPAs) are also action plans to reduce and stop the circulation of timber and timber products harvested illegally in the European Union (EU).⁵⁶⁸ The EUTR only recognises wood with FLEGT licenses and the CITES permits as legally sourced. There is a fairly large

⁵⁶⁷ Lacey Act of 1990, USA. Amended in May 2008.

⁵⁶⁸ See EU Timber Regulation on https://ec.europa.eu/environment/forests/timber_regulation.htm. Accessed on 04 October 2019.

body of academic literature on CITES and its regulation of the international timber trade. Consequently, VPAs are the agreements for trading with countries that only source legal timber and timber products with European countries. Special techniques have been put in place to reduce illegal timber and timber products trading. Many countries use conventional and ultraviolet paint to mark and trace legally sourced timber and timber products. The CITES has great potential to protect many tree species from over and illegal trading. This will also reduce the extent of extinction of tree species. The ITTA tries to manage the trading of wood and timber in a sustainable way and the following section looks at how it has affected this area. However, it would be more useful to highlight weaknesses of the treaty from a forest protection perspective – most notably, that it doesn't directly address harvesting, domestic trade, or other threats (an example being the clearing of forests to make way for other land uses).

6. Forests as Heritage sites

Forests are natural habitats of species; they are interlinked with the conservation of biodiversity. It is fundamental to conserve natural habitats of species for reducing extinction, climate change resilience and adaptation.⁵⁶⁹ The World Heritage Convention⁵⁷⁰ has been adopted and it seeks to identify, protect places and natural resources of cultural and natural heritage with outstanding universal value.⁵⁷¹ The Convention establishes an international co-operation network, and the assistance required to support various States activities in identifying and conserving cultural and natural heritage sites that are of outstanding and universal value to humanity.

In 2006, the criteria selection of areas was updated to state that these areas of significant natural criteria must contain a natural phenomenon of beauty and aesthetic importance.⁵⁷² The natural criteria can also be satisfied if these areas are of on-going ecological and biological processes, and communities of plants and animals. This can also be satisfied if the area contains a significant natural habitat for the conservation of biodiversity, including threatened species that are of outstanding universal value from the scientific and conservational perspectives.

⁵⁶⁹ Wm. C Muffett, 'International protection of Wildlife', in Morrison L F and Wolfrum R (eds), *International, Regional and National Environmental Law*, Kluwer Law International, (Netherlands), (2000), 373-383, page 353-4.

⁵⁷⁰ See note 49.

⁵⁷¹ Bertzky B et al, 'Earth's natural heritage', in Worboys L G et al (eds), *Protected Area Governance and Management*, ANU Press, Canberra, (2015), 43-80, page 45.

⁵⁷² UNESCO, The Criteria for Selection. See website <http://whc.unesco.org/en/criteria/>. Accessed 27 October 2017.

Forests can also be seen as places of cultural and integrity importance.⁵⁷³ Primarily because of the reasons listed and discussed in Chapter 2, forests will qualify and satisfy the cultural and natural selection criteria. The legal status of heritage sites is that they are protected under a list of the United Nations Educational, Scientific and Cultural Organisation (UNESCO) as World Heritage Sites and on the List of Heritage Sites that are in danger if they are threatened by degradation.⁵⁷⁴ The Convention requires States to protect these areas of common concern and as a common duty. The Article 2 of the Convention states that ‘natural heritage’ can be an area with natural features consisting physical and biological groups, which are of outstanding universal value from aesthetic or scientific. The definition goes further in stating that ‘natural heritage’ can be natural sites of conservational uses or natural beauty. Forests are well-known areas of biological groupings which have significant conservational use and value to species.

The Convention requires States to protect these areas with domestic legislation.⁵⁷⁵ The Parties are also required to seek international co-operation, technical support and assistance in protecting these areas.⁵⁷⁶ They are also required to develop scientific and technical research and studies to find the correct operational methods to protect natural heritage sites. If heritage sites are in a particular region or province, that country should delineate, protect and also list these areas by legislation. Thus, there can be no economic development or changing of the biological content of the heritage area. Such areas are protected and de-zoned from further use and are mainly regulated under spatial planning laws. The Convention also requires States to establish and develop national centres for training in the protection of natural heritage sites.⁵⁷⁷ The Parties are also required to take the appropriate steps to protect their areas through technical, administrative and financial measures.⁵⁷⁸

If a natural forest is recognised as a heritage site under the Convention, it will be protected under the List of Heritage Sites. National legislation is also proposed by the Convention for a Party with a heritage site in order to reduce the effects of forest degradation and human induced tampering on this site. The Convention maintains that all sites must be kept in their natural

⁵⁷³ As seen on 24.

⁵⁷⁴ UNESCO, World Heritage List. See website <http://whc.unesco.org/en/list/>. Also see website List of World Heritage in Danger, <http://whc.unesco.org/en/danger/>. Accessed 27 October 2017.

⁵⁷⁵ See note 49, Article 3.

⁵⁷⁶ Ibid, Article 4.

⁵⁷⁷ Ibid, Article 5 (5).

⁵⁷⁸ Ibid, Article 5 (4).

form; this means that these areas will be delineated from all planned ventures or projects that would cause forest degradation and adverse effects to the nature of the forest.

Article 19 states that Parties can request international assistance in protecting their heritage sites. The Convention also established the World Heritage Fund to help in the conservation and protection of these sites.⁵⁷⁹ The Parties are required to submit reports to the General Conference of the United Nations Educational, Scientific and Cultural Organisations and World Heritage Committee. This report is required to articulate the measures taken since the area was proclaimed a heritage site since protected and the issues experienced in this field.⁵⁸⁰ Nevertheless, the Convention since its adoption has been criticised by many environmental and heritage scholars, as detailed below.

7. Forests as Commodities

Timber is a commercial commodity which is valuable in the international trading markets. It is used for making housing materials, paper and furniture. The international community has realised there is a need to regulate the timber trade since forests are being deforested at a faster rate. The ITTA has been adopted to promote expansion, legal harvesting of forests and their products, diversification of international trade, and to promote the sustainable management of timber producing forests by providing a framework for policy development, international co-operation, research and information sharing.⁵⁸¹

The ITTA was meant to balance the consumption of timber with SFM and recognise the benefits of producing wood.⁵⁸² It required Parties to co-operate, promote and develop international trade in timber. The agreement seeks to improve structural settings and expansion of market access for the fair trade of timber. The Parties are required to improve market intelligence for much greater trade transparency. The agreement also seeks to increase the processing of timber in countries that produce timber.⁵⁸³ In 1994 the agreement started to recognise the importance of SFM and the protection of forests. The agreement now required high standards of effective forest protection.⁵⁸⁴ The agreement expanded and diversified the

⁵⁷⁹ Ibid, Article 15.

⁵⁸⁰ Ibid, Article 29.

⁵⁸¹ International Tropical Timber Agreement (Geneva, 1994) (ITTA 1994), Article 1.

⁵⁸² International Tropical Timber Agreement (Geneva, 1983) (ITTA 1983), Article 1.

⁵⁸³ Ibid, Article 1 (e).

⁵⁸⁴ Ibid, Article 1 (c).

supply of timber from protected forests which were sustainably managed.⁵⁸⁵ The agreement in 1994 recognised the needs of indigenous communities in forest protection. It envisaged that their rights should be respected since they use forest resources, ecosystems and products to survive.⁵⁸⁶

The agreement in 2006 is now aimed at the sustainable use of forest resources. This is now integrated with alleviation goals for poor communities that were being affected by illegal logging.⁵⁸⁷ The agreement now requires its Parties to nurture voluntary strategies for forest protection such as forest certification and SFM.⁵⁸⁸ It also recognises the importance and the roles played by indigenous communities in the conservation and protection of forests.⁵⁸⁹ In 2006 the ITTA Conference in Geneva⁵⁹⁰ was upgraded and its mandate renewed. The Parties agreed to other obligations to help with timber trade and SFM. The Parties reaffirmed the duty to trade timber from sustainably managed forests and also appraising the formation of the Bali Partnership Fund which allows for SFM. The Parties were also encouraged to effectively implement secure tenure and cross-sectoral co-operation on all forests in their regions.

The objectives of the ITTA state that it is to promote international trade of timber from sustainably and legally logged forests. The instrument also provides ways for consultation, co-operation and national policy development in world timber trade.⁵⁹¹ The sustainable management of forests must also help to reduce and alleviate poverty in indigenous communities.⁵⁹² This instrument also promotes the structural conditions in international markets (the consumption and production), market access, consumer preferences and conditions that reflect equal and fair prices of timber from sustainably managed forests.⁵⁹³

⁵⁸⁵ Ibid, Article 1 (e).

⁵⁸⁶ Ibid, Article 1 (j).

⁵⁸⁷ See note 53, Article 1 (c), (k) and (n).

⁵⁸⁸ Ibid, Article 1 (o) and (r).

⁵⁸⁹ Ibid.

⁵⁹⁰ United Nations Conference for the Negotiation of a Successor Agreement to the International Tropical Timber Agreement, 1994 Fourth part Geneva, 16- 27 January 2006 Agenda item 7, International Tropical Timber Agreement, 2006. See website http://www.itto.int/direct/topics/topics_pdf_download/topics_id=3363&no=1&disp=inline. Accessed on 18 October 2017.

⁵⁹¹ See note 53, Article 1 (a).

⁵⁹² Ibid, Article 1 (c).

⁵⁹³ Ibid, Article 1 (f).

The Parties are encouraged to co-operate and share information and technology on how forests can be sustainably managed and traded on the international market.⁵⁹⁴ It also encourages Parties in timber trading transparency and the need for better data on market trends on tree species being traded. The Parties are also encouraged to rehabilitate and restore degraded forest lands with respect of the rights and interests of indigenous dependent communities.⁵⁹⁵ The Parties are required to develop national policies focused on sustainable use in the context of timber trading, conservation of timber forests and maintaining the ecological balance.⁵⁹⁶ The framework of the instrument is for Parties to strengthen their capacity in improving forest law enforcement and forest governance. The Parties are encouraged to prevent and reduce illegal logging of timber forests.

The Parties are encouraged to introduce forest certification (voluntary mechanisms) to promote the SFM and assisting other members in their region who also trade in timber.⁵⁹⁷ They are also required to use environmentally clean technology; and allow the transfer of technology, technology co-operation and concessions for technology access in mutually agreed contracts.⁵⁹⁸ The Parties must also encourage the sustainable management of non-timber forest products and other environmental services to achieve SFM.⁵⁹⁹ The Parties are encouraged to recognise the roles played by forest-dependent communities in achieving SFM. They are encouraged to enhance community capacities for SFM.⁶⁰⁰ The Parties are also encouraged to research and identify emerging timber trading and forest relevant issues.⁶⁰¹

The instrument also makes the International Tropical Timber Council⁶⁰² official. Its duties are to take decisions that are necessary for the effective functioning of the Organisation. The council also keeps records of all the Conferences of Parties, sessions and meetings. In Article 15, the instrument recognises that there is a need for co-operation and co-ordination between

⁵⁹⁴ Ibid, Article 1 (g).

⁵⁹⁵ Ibid, Article 1 (j).

⁵⁹⁶ Ibid, Article 1 (m).

⁵⁹⁷ Ibid, Article 1 (n).

⁵⁹⁸ Ibid, Article 1 (p).

⁵⁹⁹ Ibid, Article 1 (q).

⁶⁰⁰ Ibid, Article 1 (r).

⁶⁰¹ Ibid, Article 1 (s).

⁶⁰² ITTA, Council and Committee. See website http://www.itto.int/council_committees/. Also see <http://enb.iisd.org/forestry/itto/ittc47/>. Accessed on 17 October 2017.

the ITTA and other UN organs, agencies, and the United Nations Conference on Trade and Development⁶⁰³ (UNCTAD).

The ITTA also gives powers to the International Tropical Timber Organisation⁶⁰⁴ (ITTO). The ITTO objective strives for international trade of timber from sustainably managed forests. The organization encourages governments, industry and indigenous communities to conserve and manage forests and make their forest products valuable. It is also involved in making the trading of timber more transparent and accessible on the international market. It encourages the harvesting of timber without damaging forests to ensure that these are able to provide more products and services. The organization has introduced themes on SFM, forest law enforcement, restoration, sustainable use and conservation of ecosystems. It also encourages Parties to reduce illegal logging, introduce planning measures and forest harvesting indicators.

Furthermore, the organization's economic information and market intelligence is concerned with the efficiency of the flow of timber from producers and consumers; assisting Parties in understanding the growth of timber trading, forest goods and services. This programme works on trade marketing data, access, forest certification, ecosystem services, forest law enforcement, marketing of timber and non-timber products. In addition, the organization's forest industry programme is meant to assist States to develop efficient and value-adding forest specific industries. This allows them to increase the employment and the export timber earnings. The organisation also includes working to add value to timber, the efficiency in processing, utilisation, prevent illegal logging and its effects, and timber marketing.

The organisation is also involved in the capacity building of government departments, industries, non-government and local organisations that are involved in the conservation of forests. In addition, it is involved with boosting the knowledge and capacity of agencies, institutions, provides training for and assistance to communities. It recognises the mitigation of climate change through various international environmental instruments. The organisation recognises the ecosystem services of forests, the effects of land-use change and deforestation. It recognises the REDD+ initiatives and its effective programme Reducing Deforestation and Forest Degradation and Enhancing Environmental Services (REDDES). This programme is

⁶⁰³ UNCTAD. See website <http://unctad.org/en/Pages/Home.aspx>. Accessed 17 October 2017.

⁶⁰⁴ ITTA, ITTO. See website http://www.itto.int/at_work/. Accessed 17 October 2017.

also aimed at enhancing environmental services, improving livelihoods of communities through sustainable forest and land-use management.⁶⁰⁵

The organisation has also set up collaboration programmes with CITES and the CBD. The ITTO-CITES initiative is on implement programmes on species that have been listed. This is to make sure the trading of the CITES-listed species is consistent with the concepts of SFM and conservation. The ITTO-CBD collaboration aims to reduce the loss of biodiversity due to timber harvesting. In 2011, the CBD and ITTO secretariat signed a Memorandum of Understanding in which they agreed to jointly conserve and manage forests and biodiversity as an aligned effort. The ITTO Secretariat agreed to implement and support CBD programmes.⁶⁰⁶

This Joint Collaborative Initiative on Tropical Forest Biodiversity⁶⁰⁷ is meant to enhance the conservation of biodiversity in the tropics and also directly engage in the participation of indigenous stakeholders, by addressing deforestation and forest degradation. The Parties are encouraged to reduce loss of biodiversity by using the CBD Programme of Work on Forest Biodiversity and focusing specifically on the objectives of the Strategic Plan for Biodiversity 2011-2020 and the ITTO Action Plan.

The Initiative is to enhance the local capacity for the conservation biodiversity in production forests, restore, rehabilitate of forest degraded lands, improving conservation, proper management of protected areas, safeguarding forest biodiversity in forest interventions, encouraging REDD+ projects and alleviate poverty. The objectives are to be achieved by promoting SFM, biodiversity protection, protection against invasive species, forest monitoring, enhancing the value of forests and reducing the effects of land use on forests. In addition, the Thematic Programmes of the ITTO aim to reduce corruption, insufficient data, ineffective enforcement capacity, flawed policies, insufficient legal frameworks and poor marketing conditions for wood. This instrument has been a success in that it managed to provide the Bali Action Fund for use by public and private sectors. The instrument managed to focus on two

⁶⁰⁵ Global Environment Facility (GEF), report of the Global Environment Facility to the Fourteenth session of the Conference of the Parties to the United Nations Convention to Combat Desertification, See website on http://www.thegef.org/sites/default/files/documents/gef_report_unccd_cop14_en.pdf. Accessed on 16 January 2021.

⁶⁰⁶ ITTO/CBD Collaborative Initiative for Tropical Forest Biodiversity. See website on <https://www.itto.int/cbd/>. Accessed on 16 January 2021.

⁶⁰⁷ ITTA, ITTO, ITTO/CBD Collaborative Initiative for Tropical Forest Biodiversity. See website <http://www.itto.int/cbd/>. Accessed on 17 October 2017.

different fields which are difficult to engage with and co-operate (environmental and trade). It managed to also call on many members for ratification.

8. Other Efforts

8.1 From Millennium Development Goals (MDGs) to Sustainable Development Goals (SDGs)

These initiatives are classified as soft law (voluntary and non-binding) or initiatives that states can implement to protect their forests. They are voluntary meaning that states have no obligation to implement. Moreover, they provide clarity on forest protection initiatives and agendas. They are important since they can be adopted without countries signing to any international laws. They also try to form a recognised global goal on the international arena – sometimes out of an environmental urgency. In terms of forest protection, these initiatives have become important since there is no international instrument. They offer states with ways to coordinate and cooperate in their regions. They also offer ways to make national environmental laws more effective and efficient – by implementing programmes and concepts they voluntarily support. Importantly, they are other initiatives that have stemmed from international instruments as the United Nations try to explain or add on certain literature that is missing or confusing.

There are many people who depend on forest products and services as seen in Chapter 2. Forests employ formal and various informal users across the world. Forests also alleviate poverty and serve as safety nets for poor rural communities. The United Nations recognise that deforestation has impact on poverty, namely the limitation on the provision of water and food. Many poor communities cannot afford to purchase their necessary dietary requirements, so they supplement by bushmeat and gathering fruits and leaves or roots. Deforestation also reduces the chances of establishing and maintaining an overall sustainable environment.

These are initiatives that have been put forward to try and conserve forests and reduce forest degradation. The MDGs requires States in Goal 1 to have a clear and common goal in reducing poverty. Goal 7A of the MDGs requires countries to integrate the principle of sustainable development into their national policies to reduce environmental degradation. This goal realises that forests are safety nets for the poor who harvest products. It also requires countries to increase afforestation and reforestation programmes to rehabilitate degraded forests. It also

encourages States to increase the protected forests and expand if possible, and reduce the net loss of forests.⁶⁰⁸

Furthermore, Goal 7B encourages countries to reduce the loss of biodiversity and must also reduce the rate of deforestation. Inter-sectoral co-ordination is important so that sound decisions can be taken on land-use management and social development, providing the equal balance of socio-economic and environmental aspects to achieve sustainable use of natural resources. Nevertheless, these goals were substituted by Sustainable Development Goals⁶⁰⁹ (SDGs) from 2015 to 2030.

Goal 7.2.1 of SDGs requires States to use renewable clean energy to mitigate climate change. Goal 8.3 also requires Parties to take steps to develop policies for decent work for indigenous communities that live near forests. The collection of waste is vital to reduce pollution and environmental degradation. Achieving Goal 12 requires nations to recognise sustainable consumption and production. This must be accompanied by integrated plans for sustainable business that is environmentally friendly.

Goal 12.2 states that by 2030 Parties should have achieved the sustainable management of natural resources and their efficient use. Goal 12.4.1 also requires States to develop national policies that are environmentally friendly, recognising the international multilateral environmental agreements. The Parties are required to report data and information that relates to hazardous waste. There is a need to integrate economic growth into natural resources policy action plans to achieve sustainable development.

Goal 13 also requires States to reduce and mitigate climate change. This allows actions such as forest conservation to reduce carbon emissions from deforestation. States are also required to enhance their carbon sinks and reservoirs. The States are also required by Goal 13.1 to strengthen their resilience and adaptive capacity when it comes to climate related hazards. They are required to develop national policies that integrate climate change measures. Goal 13.3 requires States to educate, raise awareness, and strengthen their institutional capacity in order to mitigate climate change, adaptation and reducing the effects. The developing countries in Goal 13A are also required to implement the Green Climate Fund (GCF) for mitigation actions,

⁶⁰⁸ FAO. 2016. State of the World's Forests 2016. Forests and agriculture: land-use challenges and opportunities. Rome. See website <http://www.fao.org/3/a-i5588e.pdf>. Accessed on 16 January 2021.

⁶⁰⁹ United Nations. See website <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>. Accessed on 17 October 2017.

providing funds and finances. In terms of Goal 13B, least developed countries and small islands are encouraged to promote actions and mechanisms for effective climate change-related adaptation and planning. They are also required to realise human rights by focusing primarily on the equality of women, youth and indigenous marginalised communities.

Furthermore, Goal 15.1 states that by 2020 countries must ensure that all ecosystems have been sustainably managed, in particular forests, taking recognition of obligations under international environmental agreements. Goal 15.2 requires States to promote the sustainable management of all types of forests. They are also encouraged to prevent deforestation, halt forest degradation, increase afforestation, restoration, rehabilitation and reforestation globally. In Goal 15.5, States are required to reduce the loss of biodiversity, the loss of their natural habitats and enhance the benefits of sustainable development.

The States are required in Goal 15.6 to promote fair and equitable sharing of specie benefits from using genetic resources and the appropriate access to resources agreed internationally. Goal 15.7 requires States to take action against the trading and trafficking of protected species. They are also required to reduce and prevent the introduction of invasive species, by adopting national measures by 2020. Goal 15.8 requires States to destroy these invasive species before they can cause environmental degradation.

States are also required by Goal 15.9 to integrate ecosystem and biodiversity values into their national action plans, development projects and poverty alleviation programmes. This goal is also recognised under Target 2 of the Aichi Biodiversity Targets (Strategic Plan for Biodiversity 2011-2020). States are required to mobilise and increase funds for financial resources to conserve and sustainably use biological diversity and ecosystems. Goal 15.B requires States to mobilise finances for SFM and provide incentives for forest management, conservation and reforestation.

8.2 The United Nations Forum on Forests (UNFF)

In 2000, the United Nations Economic and Social Council (ECOSOC) established the United Nations Forum on Forests (UNFF)⁶¹⁰. The main objective of the UNFF is to encourage the sustainable conservation and management of all types of forests. This is based on the Rio Declaration, the Forest Principles Chapter 11 of Agenda 21, and the decision of the IPF/IFF

⁶¹⁰ United Nations Forum on Forests. See website <http://www.un.org/esa/forests/index.html>. Accessed on 19 October 2017.

Processes, and other international policies. The UNFF has universal membership and comprises of all the Members of the United Nations and international specialised agencies. They are also required to strengthen their national policies and international political will for forest protection.⁶¹¹

The main functions of the UNFF include the implementation of environmental forest related agreements, explaining SFM, fostering co-operation, strengthen commitments to conserve and protect forests, co-ordinating forest issues and provide education, public awareness and training governments on how to address forest issues. The UNFF was established to create dialogue among governments to solve forest issues holistically.⁶¹²

The UNFF also assess the progress of forest programmes, monitors the projects, and reports on the progress of its functions and objectives. The UNFF was made to create a permanent forum with some level of political authority. The UNFF is influential in trying to reiterate and create the political will in forest protection in many countries. It also creates a sense of accountability amongst citizens on forest issues.⁶¹³

The UNFF Secretariat has a range of activities that raise SFM activities. They also write keynotes at Conferences and information production which include policy briefs, publications, fact sheets and presentations. They also produce films, art, press releases, news and photography. The Secretariat is also responsible for many logistic preparations, servicing meetings, is also the Secretariat of the CPF and facilitates on UNFF sessional activities.⁶¹⁴

The United Nations has also established the Intergovernmental Panel on Forests (IPF) which is meant to implement the Forest Principles and Chapter 11 of Agenda 21; the successor is the Intergovernmental Forum on Forests (IFF). The IFF tries to address deforestation and reduction programmes, sustainable use of all types of forests, and trade in forest products. The IFF also focuses in fostering traditional knowledge, financial assistance and technology transfer.

At the UNFF-6 in New York (2006), the States shared the Global Forest Objectives in which they agreed to focus on rehabilitation of forest land, prevent forest degradation, restoration, afforestation, reforestation, enhancing forest benefits, SFM, recognising indigenous people

⁶¹¹ United Nations Forum on Forests. See website <https://www.un.org/esa/forests/forum/about-unff/index.html>. Accessed on 19 October 2017.

⁶¹² Ibid.

⁶¹³ Ibid.

⁶¹⁴ See website <https://www.un.org/esa/forests/forum/unffs/index.html>. Accessed on 19 October 2017.

who depend on natural forests, increase protected areas and mobilise resources for forest protection. At the UNFF-7 in 2007 in New York, States wanted to enhance the co-operation, policy programme co-ordination and guidance to the CPF, and agreed to the Non-Legally Binding Instrument on All Types of Forests (NLBI). The States decided to look for ways to improve funding and emerging innovative approaches for forest conservation. The States also stated that the SFM is an ever evolving concept and that it is particularly dependent on adequate resources. These can be financial, capacity building and environmentally sound technology.⁶¹⁵

The UNFF-8 in 2009 focused more on developmental issues and how land-use change has affected forest and forest protection programmes. The States looked at ways and means to implement SFM. The UNFF-10 members were then encouraged to report on their national plans and the Global Objectives on Forests. At the UNFF-11, in 2015, the members reviewed the effectiveness of the International Arrangement on Forests (IAF). The main objects of the IAF is to promote the implementation of SFM, increase forest contributions post-2015, enhance co-ordination and synergies of forest issues, foster international co-operation, strengthen forest governance frameworks and implementation, strengthen political commitments to achieve SFM, and cooperation of synergies related to forest and forest agreements.⁶¹⁶

The UNFF-12 in May 2017, adopted the resolutions of the Working Group of the Forum. This featured the UN Strategic Plan for Forests 2017-2030 and the Quadrennial Programme of Work of the Forum for 2017-2020. The Strategic Plan provides a global framework for national action to sustainably manage all types of forests, prevent forest degradation and deforestation. There are six Global Forest Goals and 26 Targets that have to be achieved by 2030, of which some are universal and some voluntary. The first goal is to reverse the loss of forest cover through SFM and forest protection. The second is to enhance the socio-economic and ecological benefits of forests. The third goal is to increase the protection of forests through protected areas. The fourth goal is to increase resources, technology, co-operation and partnership for the implementation of SFM. The fifth goal is to promote government frameworks to use the Non-Legally Binding Instrument on All Types of Forests (NLBI) (Forest Instrument) and other

⁶¹⁵ See website on <https://www.un.org/esa/forests/forum/previous-sessions/unff-6/index.html>. ccessed 16 January 2021.

⁶¹⁶ See website on <https://www.un.org/esa/forests/documents/international-arrangement-on-forests/index.html#:~:text=The%20International%20Arrangement%20on%20Forests,and%20the%20UNFF%20Trust%20Fund>. Accessed 16 January 2021.

national action plans. The last Global Forest Goals is enhancing co-ordination on forest issues through all sections of the UN Systems and CPF, and other relevant sectors and stakeholders.

The CPF is linked to the UNCCD as a policy forum and partnership on all types of natural forests. It has the capacity to facilitate the United Nations Forum on Forests (UNFF) process. In particular it implements proposals for actions, which are related to agreed actions on forests, usually the Intergovernmental Forum on Forests (IFF) and the International Panel on Forests (IPF) which have been integrated.⁶¹⁷

However, the NLBI has been entangled into a political fight between the global North and South. This is where they start to differ in terms of what forest protection concepts, programmes and initiatives should be provided. The problem has come in two phases; recognition of international laws and permanent sovereignty, and the form of instrument required for forest protection. Mainly, if it takes permanent sovereignty developing countries will have a huge problem with a forest protection instrument.

They also support the Aichi Biodiversity Targets, the Paris Agreement, UNFCCC, the IPF and other international instruments, goals, processes and commitments that relate to forests. The UNFF-12 also linked the CPF member organisations with the key contributions of forests. They linked this to the SDGs 1, 2, 3, 5, 9, 14 and 17.⁶¹⁸ The UNFF-12 have put priorities to enhance the contributions of natural forests to achieve SDGs 1, 2, 3, 5, 9, 14 and 17.

8.3 Non-legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of all types of forests (NLBI)

However, the Economic and Social Council⁶¹⁹ of the UN in 2000 made Resolution 2000/35⁶²⁰ which established the United Nations Forum on Forests. It is a subsidiary body with functions

⁶¹⁷ Thang Hooi Chiew, Annex 1 keynote paper: Implementation of the IPF/IFF proposals for action at the national level. See website <http://www.fao.org/3/J2251E/j2251e05.htm>. Accessed 16 January 2021.

⁶¹⁸ Sustainable Development Goals, 17 Goals to Transform the World. See website <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>. Accessed on 17 October 2017.

⁶¹⁹ United Nations Department of Economic and Social Council. See website on <https://www.un.org/ecosoc/en/>. Accessed on 11 November 2018.

⁶²⁰ Resolutions and Decisions of the United Nations Department of Economic and Social Council. Report on the fourth session of the Intergovernmental Forum on Forests, page 1-3. See website on https://www.un.org/esa/forests/wp-content/uploads/2013/09/2000_35_E.pdf. Accessed on 11 November 2018.

of managing the sustainable development of all types of forests and strengthening political commitments based on the Rio Declaration, the Forest Principles⁶²¹, Chapter 11 of Agenda 21 and the outcomes of the IPF/IFF Processes.⁶²² The UNFFF has universal membership and all Member States of the UN are welcome and the specialized agencies.

The objective of the UNFF is to encourage sustainable forest management in all forests and strengthen international political will to protect forests. Its main functions have evolved over the years and now include fostering international co-operation, strengthening institutions, and preserving commitments to protect forests. It also educates different individuals and corporations on how to foster and enhance co-operation and co-ordination on forest protection issues. Sessions held have developed new standards, principles and rules.⁶²³ The UNFF has become a permanent forum with a higher level of political authority and is well-recognized at an international level.⁶²⁴

Notable Sessions held under the UNFF include

- The UNFF 8 in 2008, focused on Forests in a changing environment: Means of implementation.
- The UNFF 9 in 2009, focused on Forest for people, livelihoods and poverty eradication: International Year of Forests.
- The UNFF 10 in 2013, focused on Forests and the economic development.
- The UNFF 11 in 2015, focused on Review and future direction.
- The UNFF 12 in 2017, focused on enhanced co-operation, co-ordination and engagement on forest-related issues.
- The UNFF 13 in 2018, focused on means of implementation of the Sustainable forest management.
- The UNFF 14 in 2019 (May), will focus on the implementation of the UN strategic plan for forests 2017-2030.

⁶²¹ See website on <http://www.un.org/documents/ga/conf151/aconf15126-3annex3.htm>. Accessed on 11 November 2018.

⁶²² Department of Economic and Social Affairs, Forests, UN Forum on Forests. See website on <https://www.un.org/esa/forests/forum/index.html>. Accessed on 11 November 2018.

⁶²³ Ibid. See website on <https://www.un.org/esa/forests/forum/previous-sessions/unff-7/index.html>. Accessed on 11 November 2018.

⁶²⁴ Davenport S and Wood P, 'Finding the way forward for the international arrangement on forests UNFF-5, -6 and -7', (2006) 15 (3), *RECIEL*, 316-326, page 317.

The UNFF also encourages States to create national policies, laws and regulations for forest protection. The UN has also established the International Panel on Forests (IPF) to implement the Forest Principles. Furthermore, under its successor the IFF, it now focuses on deforestation reduction projects and programmes; enhancing and fostering local community traditional knowledge; financial assistance; technology transfer; promotion of conservation and sustainable trade; and the sustainable development of all types of forests.

The Collaborative Partnership on Forests (CPF) supports the UNFF on its functions. These institutions co-operate and co-ordinate on forest issues. It also provides an opportunity for comprehensive strategic approach in addressing sustainable forest management.⁶²⁵ The UNFF has allowed for high level forest experts' participation and transparency in climate change, biodiversity and desertification conferences. It has raised awareness on the functions of forests, effects of deforestation and forest protection. This has had a good influential role in regional discussions and national participation in international and regional conferences. However, the UNFF and the IPF institutions should be strengthened with funding and expert staff since it has produced important and innovative decisions during its Sessions.

During the Rio Earth Summit in 1992, the participating States developed the Forest Principles to the Non-Legally Binding Authoritative Statement of Principles.⁶²⁶ This was a global consensus for the management, conservation and sustainable use of all types of forests. During the UNFF-7, (New York, 2007) the States agreed to a Non-Legally Binding Instrument on All Types of Forests (NLBI) (Forest Instrument) and it was adopted by the United Nations General Assembly. The objective of the NLBI is to strengthen the sustainable use of all types of forests; enhance the contributions of forests; achieve global objectives on forests; enhance the contributions and valuation of forests; achieve agreed developmental forest goals; alleviation of poverty; provide forest governance framework for national action programmes; enhance international co-operation; and strengthen political commitment at all governmental levels to achieve sustainable development.⁶²⁷

⁶²⁵ Report of the secretary General, Forests and climate change United Nations Economic and Social Council, United Nations Forum on Forests, 8th Session, Item 5 (a) of the Provisional Agenda, New York, United States of America, (2009), paragraph 34.

⁶²⁶ See note 72.

⁶²⁷ Wildburger C, 'Overview of international policy instruments related to forests and their goals and tools', in Rayner J, Buck A and Katila P (eds), *Embracing complexity: Meeting the challenges of international forest governance*. A global assessment report. Prepared by the Global Forest Expert Panel on the International Forest Regime IUFRO World Series, Volume 28, (2010). Vienna, 1-172, pages 155.

This instrument was focused on promoting SFM, restoration, rehabilitation, afforestation, reforestation, prevention of degradation and enhances forest protection. Furthermore, the instrument focused on enhancing socio-economic and environmental forest community needs. It also put emphasis on enhancing protected areas to reduce forest degradation and deforestation. The instrument has advantages in its soft law form which many States can use for their forest protection programmes and projects. It is a compact instrument with various forest principles and concepts.⁶²⁸ In addition, it is specific as it explicitly links its forest obligations with other existing international environmental instruments. The instrument provides an overarching forest policy framework on how to achieve SFM.⁶²⁹

The Member States of the United Nations agreed on a series of measures to strengthen the technical and capacity requirements, forest sector investment, stakeholder participation to reduce deforestation and forest degradation within the framework of the National Forest Programmes (NFPs). They also focused on monitoring and implementation policies to support States who undertook forest programmes and projects to prevent forest loss consistent with international instruments. It also emphasised supporting technical and institutional policy in the national and international arena.⁶³⁰

The States were also encouraged by the principles of the instrument to enhance international co-operation, financial support, technology transfer, raising awareness and education. The Global Objectives (1) focused on reducing deforestation, (2) enhancing forest benefits, (3) increasing protected areas, and (4) assist in SFM and mobilise resources and funds to implement SFM. The national policies and measures that have been included in the instrument include to develop national forest programmes, enhance the seven principles of SFM, promote EIA and other management tools, promote efficient production and also processing of forest products, create and enable investment, develop financial strategies to plan and achieve SFM, encourage recognition of forest products including goods and services, implement ways to implement co-operation and cross-sectoral policy and forest conservation programmes,

⁶²⁸ Kunzman K, 'The Non-Legally Binding Instrument on Sustainable management of All Types of Forests-Towards a legal regime for Sustainable Forest Management?', Volume 9, Number 8, (2008), *German Law Journal*, 981-1006, page 1005.

⁶²⁹ Food and Agriculture Organisation, A guide to monitoring and evaluation of the Non-legally Binding Instrument on all types of forests (NLBI), (2011), 1-29, page 4.

⁶³⁰ See website on <http://www.fao.org/3/a0970e/a0970e03.htm>. Accessed 16 January 2021.

integrate forest programmes nationally, analyse the causes of and also address threats to forests, promote the benefits of forests and promote active participation of forest groups.⁶³¹

The NLBI aims to strengthen global forest governance foundations from the institutions, policies, decision making, and regulatory frameworks, compliance and policy implementation and enforcement of forest policies internationally and nationally. The Forest Instrument also serves as an influencer, enhancing co-ordination of forest policies and concepts to conserve and manage forests.

The NLBI provides a clear focus on protecting forests and its goals are valid in reaching SFM. It is comprehensive, coherent and it is an overarching forest policy framework. The instrument provided national actions that must be implemented to reduce deforestation and promoted international co-operation. It also fostered co-operation with other international environmental instruments. The CPF supports the UNFF and co-operates on all types of forest issues. It provides opportunities on strategic approaches to address issues of SFM. These issues include reduction of forest degradation and deforestation, enhancing SFM, fostering co-operation and co-ordination.⁶³²

8.4 The Bonn Challenge

The Bonn Challenge, a global endeavour geared towards the rehabilitation of 150 million hectares of deteriorated forest land by 2020 and an additional 200 million hectares by 2030 was launched in 2011. The Bonn Challenge was initiated by the German government with the support of the International Union for The Conservation of Nature⁶³³ (IUCN) during a ministerial event held in Bonn, Germany. In 2014 the target was reviewed and extended during a UN Climate Summit through the New York Declaration⁶³⁴ on Forests, requesting

⁶³¹ A Guide to Monitoring and Evaluation of the Non-legally Binding Instrument on all Types of Forests (NLBI), September 2011, page 2. See website <http://www.fao.org/3/mc364e/mc364e00.pdf>. Accessed 16 January 2021.

⁶³² Developing effective forest policy a guide, Food And Agriculture organization of the United Nations Rome, (2010), FAO Forestry Paper 161. See website <http://www.fao.org/3/i1679e/i1679e00.pdf>. Accessed on 16 January 2021.

⁶³³ See website <https://www.iucn.org/>. Accessed on January 19, 2021.

⁶³⁴ New York Declaration on Forests Declaration and Action Agenda, UN Climate Summit, Catalyzing Action (2014), *“The associated voluntary Action Agenda (section 2) serves as a guide to governments, companies, and organizations regarding the diverse set of actions that can achieve these transformational goals. It is not meant to be comprehensive. “This includes commodity traders calling for public policies to eliminate deforestation, a pledge by indigenous peoples to protect hundreds of millions of hectares of tropical forests, new commitments from forest country governments to reduce deforestation or to restore degraded lands, new bilateral and multilateral programs to pay countries for reduced deforestation over the next six years and new procurement policies for several of the largest forest commodity importer governments”.* See website on

governments and organisations to pledge their support in this renewed target. To date 74 countries, organisations and regions have pledged their support in restoring over 210 million hectares of forests by 2020, which far exceeded the projected 150 million hectares of land, as it is a recognisable global goal of importance.⁶³⁵

The Bonn Challenge is not solely about forest regeneration at the expense of all else, it is rather a tool of assistance with regards to the execution of important national objectives such as food and water security, and achieving holistic rural development. This in turn also helps users positively contribute towards biodiversity, climate change and land restoration, which benefits the citizenry and economy. In terms of the Forest Landscape Restoration (FLR) approach, the restoration of forest biomes in line with the 2020 goal will create approximately US\$84 billion in yearly benefits which provide income opportunities for persons living within those biomes i.e. the rural community.⁶³⁶ This figure has trade related benefits for the local communities through increased crop yields, better pastoral habits and trade in sustainable forest products. It is projected that achieving the 2030 goal would increase the figure to US\$170 billion annually as well as the environmental benefit of reducing up to 1.7 gigatonnes of carbon from the atmosphere annually.⁶³⁷

The Bonn Challenge creates a centralised database for all initiatives relating to restoration of degraded and deforested forests globally, to ensure standardisation in the work done on forest landscape restoration. This is why although established first, Global Partnership on Forest Landscape Restoration (GPFLR)⁶³⁸, works directly with the Bonn Challenge through fostering global political support for restoration with its members. Furthermore, the GPFLR assists the Bonn Challenge with the provision of policy and technical support in the implementation of its commitments to pledge countries.⁶³⁹ One such GPFLR member assisting on the ground is the IUCN's Forest Landscape Restoration Regional Hubs in Kigali, Yaoundé, Bangkok, San Jose, Quito, Suva and Washington DC. In addition, the IUCN partnered with UNEP and FAO to create multi-country initiatives known as the High-level Forest Landscape Restoration

https://www.nydfglobalplatform.org/wp-content/uploads/2017/10/NYDF_Declaration.pdf. Accessed on 19 January 2021.

⁶³⁵ The Bonn Challenge, See website on <https://www.iucn.org/theme/forests/our-work/forest-landscape-restoration/bonn-challenge>. Accessed 19 January 2021.

⁶³⁶ Dave, R., Saint-Laurent, C., Moraes, M., Simonit, S., Raes, L., Karangwa, C. (2017) Bonn Challenge Barometer of Progress: Spotlight Report 2017. Gland, Switzerland: IUCN, 36pp, page 8. See website on <https://portals.iucn.org/library/sites/library/files/documents/2017-060.pdf>. Accessed 19 January 2021.

⁶³⁷ See note 635.

⁶³⁸ See website on <http://www.forestlandscaperestoration.org/>. Accessed on 13 January 2021.

⁶³⁹ Ibid.

Initiative, whose purpose is to provide models for collaboration and galvanise implementation of policies.⁶⁴⁰ Such Bonn Challenge inspired initiatives have encouraged the creation of more high-level “home grown” country specific processes through political will within member countries and their regions such as (Africa) AFR100, (Europe, the Caucasus and Central Asia) ECCA30 and (Latin America and the Caribbean) Initiative20x20.

Despite all these pledges and initiatives made to the Bonn Challenge for the restoration of forests, targets have been achieved or are on track. The forest fires of 2019 and 2020 have set back multiple accomplishments, especially with Spain, Australia, Brazil and USA.

With the work undertaken by the pledges and initiatives from member organisations, the IUCN notes that 71.11 million hectares were being restored by 2018. Commendably, the US surpassed its pledge through silviculture practices by restoring 17 million hectares of forest land as of June 2019. In addition, El Salvador reported restoration of more than 120,000 hectares of forest land as of 2014, through diverse range of interventions embracing a focus on key biodiverse areas, agroforestry and protected lands.

A Bonn Challenge database website for sharing and reporting on the protocol was created, this was piloted by Brazil, El Salvador, the Mexican state of Quintana Roo, Rwanda and the United States of America who provided detailed reports on the protocol. These reports are fed into the Barometer of Restoration Success which tracks country specific implementation progress. These include the quantity and quality of jobs created through land cultivation and forest restoration, enrichment and/or expansion of biodiverse regions through interventions, allocation and use of funds for the planned programmes as well as government enacted policies.

Tracking the success of the abovementioned five countries through their submitted country reports on the Barometer of Restoration Success, shows that they collectively brought 27.835 million out of 30.7 million hectares of forest land under restoration as of 2018 – thus merely ten per cent shy of their collective pledge goal. Due to the forest restoration programme implemented, a total of 354,000 jobs were created, generating an investment of about US\$235 per hectare of land restored. The greatest accomplishment from the forest restoration efforts is that about 1.379 billion tons of carbon was sequestered from the earth’s atmosphere by these restored forests.

⁶⁴⁰ See note 635.

The Barometer’s reporting protocol played a big part in the successes of these countries as it helped them better anticipate problems during planning phases, thus ultimately becoming better equipped at solving them. Radhika Dave, IUCN’s senior programming officer stated that “*the Barometer fills a key gap in reporting on progress against commitments and has brought countries to the table to openly share data and information on their efforts, flag implementation hurdles, and identify ways forward to achieve their targets*”.⁶⁴¹ This was confirmed by the USA forest service who used the system, Shira Yoffe their senior policy advisor stated the following that “*the Barometer was a catalyst for us to take a more robust look at our restoration reporting, helping us identify strengths and weaknesses in our approach*”.⁶⁴² In addition to the Barometer’s usefulness for detailed reports, it has been seen through reporting that even the use of the more ‘rapid application’ yields positive results. Thirteen countries, including Cameroon, Guatemala, India, and Kenya, have used this rapid application which resulted in the restoration of 43.7 million hectares of land totalling 56 per cent of their Bonn Challenge pledge commitments.

Due to the reporting success of these 19 users of the Barometer, there are 38 country/regional pledges that have voiced their interest in using the Barometer to track their success as well as assist in policy implementation. However, this does not negate the success of those not using the Barometer for tracking purposes. A closer look at their biodiversity, climate change and desertification, and other international (such as the SDGs) reports, it can be gauged how much work they have done in line with their pledges. According to Radhika Dave, the demand from the remaining pledgees is not only overwhelming but also highlights the different ways in which the Barometer can be used more efficiently, particularly in the provision of technical support to its users. This includes in the form of online resources on how to use the Barometer, personal capacity-development exercises, and identifying other ways to provide real-time assistance for its users.

The Barometer has created better lines of communication on climate change and forestry policies between sectors, ministries and other stakeholders who would not normally communicate, as they realise they all have a common goal through the use of the protocol. It is not only about assisting those who use the Barometer, it is also necessary to provide a

⁶⁴¹ See website on <https://www.iucn.org/news/forests/201907/report-captures-achievement-us-bonn-challenge-pledge-restoration-progress-19-countries>. Accessed 13 January 2021.

⁶⁴² See website on <https://www.iucn.org/news/forests/201907/report-captures-achievement-us-bonn-challenge-pledge-restoration-progress-19-countries>. Accessed 13 January 2021.

demonstrable and realistic database of all the forest and landscape restoration processes globally, and for learning or finding out about the different methods used during the process taken by the pledges. The Bonn Challenge is not a new global commitment but rather a practical means of realizing many existing international commitments, including the CBD Aichi Target 15, the UNFCCC REDD+ goal, and the Rio+20 land degradation neutrality goal. It is seen as an implementation vehicle for national priorities such as water and food security, and rural development, while contributing to the achievement of international climate change, biodiversity and land degradation commitments.

9. Criticism of the international environmental instruments

The COPs meetings held by the CBD have shown that the international community has recognised the importance of forest functions and the need for forest protection. Most of the decisions that have been agreed by the COPs of the CBD are seen as so-called ‘soft law’ because they are not binding. They cannot force any national actions on Parties to protect their forests. Thus, even if States do not comply with these decisions there is no action that can be taken against them or sanctions.⁶⁴³

The CBD COP meetings and its framework are well dominated by paper and texts without action on the ground. Mostly, it has been because the actions of the CBD and the UN do not provide for actions and enforcement to take when countries do not comply with actions stated in treaties. The difference is that a specific binding instrument once signed provides for penalties for Parties that continue losing forests and measures that can be taken against such Parties, however lacking teeth to do so.

The use of ‘sustainable use’ terminology in the CBD is problematic. Many States have continued to lose their forest lands, therefore advocating for forest protection and prevention of forest protection seems reasonable. This is because sustainable use allows socio-economic use of forests that can lead to further loss of forests. For sustainable use to be implemented; there is a need for people on the ground that will do the research to monitor and evaluate if there is a balance of use and conservation. This requires experts and finance in those areas that will be affected by deforestation.

⁶⁴³ Elena Laura Álvarez Ortega, ‘The attribution of international responsibility to a State for conduct of private individuals within the territory of another State’. *Indret Revista para el análisis del derecho*. Barcelona, Enero (2015), page 1-4. See website on https://indret.com/wp-content/themes/indret/pdf/1116_es.pdf. Accessed on 16 January 2021.

Furthermore, many of the CBD objectives and activities were never for forests specifically, but for termed biological resources in the wider sense and scale. The protection of forests has just become a side step for the CBD to accomplish its goals of biodiversity conservation. The meetings that have spoken about forest protection seem to be disjointed and filled with gaps without sufficient analysis or emphasis on forest protection. Most of the literature states precisely that forests should be conserved and managed, but never for forest protection.

There are no penalties to enforce sanctions on Parties that do not comply and continue with deforestation activities.⁶⁴⁴ The many provisions that attempt to include examination of reports of the national strategies to conserve biodiversity are not being followed by many Parties, but the CBD has no provision of what can be done to these Parties.⁶⁴⁵ A look at the action plans being submitted by Parties shows the national actions have not been followed up to the required standard, but the CBD has no enforcement and compliance mechanisms to hold these Parties responsible.⁶⁴⁶

The definition provided by ‘biological resources’ seems to need a further explanation on how forests are included in the CBD. On the face of it, one will have to read further and rely on interpretation or semantics to come up with an explanation. Forest protection seems wide and never deals with the issues of land-use change which are the proximate causes of deforestation directly. Proper review and analysis is required as well as reading of the Thematic Programmes and COPs Conferences or Meetings to determine if the forests are actually being protected in the CBD. This is because a stand-alone binding instrument would have been direct on the issues and recognise the multi-functions of forests and activities that cause deforestation. This cannot be expected of the CBD since it deals with the wider definition of all biodiversity.

The CBD was seen as a critical pillar of environmental instruments with further instruments that could have come from its objectives.⁶⁴⁷ It has failed to produce any further protocols. In its normative state, the CBD was seen as the convention where other instruments would originate from. However, it has on this purpose died a still birth. It has failed to live up to these

⁶⁴⁴ Perrings C, ‘The governance of international environmental public goods’, in Brousseau E *et al* (eds), *Global environmental commons: Analytic and political challenges in building mechanisms*, 1st (ed), (2012), 54-79, page 70.

⁶⁴⁵ Ibid.

⁶⁴⁶ Ibid.

⁶⁴⁷ Sishuta B and Doyle A, ‘South Africa: Control of Biodiversity in the context of biopiracy’, in Akpan W and Moyo P (eds), *Revisiting environmental and natural resource questions in Sub-Saharan Africa*, Cambridge Scholars Publishing, United Kingdom, (2017), 57-74, page 62.

expectations, because it lacks the innovativeness and creativity to recognise future environmental problems such as deforestation, land-use management and spatial planning programmes. It has however produced the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the CBD.⁶⁴⁸

Natural forests are ecosystems that should be recognised on their own. The CBD should have provided for an alternative to make a protocol from its objectives. This is because most of the species that have been realised as ‘biological resources’ live or are forests. Since the introduction of climate change instruments, there has been a need to have a forest protection instrument because of the functions performed by forest ecosystems. It must be stated that the species should be protected in their natural habitats, which on land is mainly in forests with the highest biodiversity; this is also to offer ecosystem resilience, adaptation and reduce species extinction. This is their habitats in which they are adapted and naturally live. Importantly, a stand-alone binding instrument would deal with the activities that increase deforestation and forest degradation. The many gaps that are left by the CBD can only be covered by a stand-alone instrument.⁶⁴⁹

Moreover, the Forest Principles put emphasis on national sovereignty, this provided for an ineffectual escape clause for Parties to choose how to neglect their national policies. These Principles gave governments a way to compromise, and they can be rendered weak since a government can choose to abide by its national sovereignty. The Principles could have made it clear that forest protection issues need to be strategically integrated and co-operated into land-use management and eco-social development. They also have an unclear operational link with the UNCCD, CITES or UNFCCC, which leaves them without a standard framework on how they function and can be applied. It can be said that these Principles are written but are not operational and binding on Parties. Since 1992 there is nothing new with regard to these Principles, there has been meetings but they were never developed further. However, in their form and status, Forest Principles can help make a forest protection instrument in the future, it might be a possibility.

⁶⁴⁸ Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity, Nagoya, Japan, 2010 Supplementary agreement to the CBD. See website here <https://www.cbd.int/abs/about/>. Accessed on the 4 October 2019.

⁶⁴⁹ Financing flows and needs to implement the Non-Legally Binding Instrument on all types of forests prepared for the Advisory Group on Finance of the Collaborative Partnership on Forests with the support of the Program on Forests (PROFOR) of the World Bank. See website on <https://www.cbd.int/financial/interdevinno/g-interdevforest-unff.pdf>. Accessed 16 January 2021.

One of the major failures of the CBD lies in Article 15 where it clearly recognises the need to respect Party sovereignty.⁶⁵⁰ This clearly recognises trees and other natural resources as inherent state resources managed by national policy rather than as a part of the common heritage or global common for species. The CBD confirms this under international law that states have an inherent right to their sovereignty and the use of their natural resources.⁶⁵¹ This means that they can use such as they wish since it is a resource at their disposal, without any instrument encouraging them to comply with any obligations. The instrument gives the Parties power on how they can use their resources.⁶⁵²

The CBD can easily be placed under binding hard-law instruments. However, on the discussion of hard-versus-soft law commitments, the CBD can be said to be a ‘soft-law instrument’. This is because its obligations can be seen as broad and Parties have not accepted many commitments. There has not been much monitoring, reporting, assessing and enforcement on the ground and it is questionable whether it has effectively conserved biological resources at a global level.⁶⁵³

In addition, since 1992 Parties have not developed more binding commitments under the CBD except expanding and developing the Articles provided in the Convention.⁶⁵⁴ There are no effective, consistent compliance and enforcement measures for any of these Parties. The substantive oversight of the CBD bodies on national strategies implemented by Parties has been weak and lacking force and compliancy. These environmental instruments are inadequate in terms of the obligations, institutions, context and the effects they want to implement for forest protection. The efforts that have been put forward are insufficient to cover forest protection. As already pointed out, these instruments their area of specialty was never forest protection, but conservation of biological resources.

Further than the insufficiencies and inadequacies in the forest regime, there are now two major problems facing the forest regime which are fragmentation of principles and a mass of legal

⁶⁵⁰ Ikechi Mgbeoji, *Implications of Biopiracy for Biological and Cultural Diversity. Global Biopiracy: Patents, Plants and Indigenous Knowledge*, Vancouver, BC, UBC Press, (2006), page 76.

⁶⁵¹ See note 40, Article 3.

⁶⁵² See website on https://www.cbd.int/youth/doc/cbd_in_a_nutshell.pdf. Accessed on 16 January 2021.

⁶⁵³ Coad L et al, (2015), ‘Measuring impact of protected area management interventions: current and future use of the Global Database of Protected Area Management Effectiveness’. *Phil. Trans. R*, page 1-3.

⁶⁵⁴ Pereira R, ‘The Cartagena Protocol on the transboundary movement of living modified organisms: The regulation of trade in transgenic organisms under international and European environmental law’, in Benedict Q M (ed), *Transgenic Insects: Techniques and Applications*, (2014), 346-354, page 354.

instruments which are non-binding to States to protect their forests.⁶⁵⁵ There is also a lack of implementation of these soft law principles, thus there is a need to raise public awareness and capacity building amongst countries and organisations. This mass of instruments (although advocating for co-ordination and co-operation on many of their programmes) have gaps which needs to be integrated by one instrument.

Many developing countries in the 1990s complained about the huge financial requirements needed to start forest protection projects.⁶⁵⁶ They have requested a ‘non-legally binding instrument on all types of forests’ instead of a ‘forest convention’, of which the efficacy of the non-binding instrument is questionable. The existing forest regime currently includes about forty international organisations and approximately twenty international forest related agreements.⁶⁵⁷

As above, during the Rio Declaration developing countries refused to meet the requirements for a forest instrument choosing to side with their sovereignty. This was mainly because of some of the broad themes discussed and proposed at these negotiations. Many developing countries regard socio-economic interests in forest exploitation as reducing the incentives for policy co-ordination. Furthermore, Non-Governmental Organisations (NGOs) have refused to protect forests and have advocated for States to refuse because their main aim is to reduce the use of fossil fuels. However, the climate change regime has since provided the necessary pressure, and laid the issue open and urgent. The message has been that if forests are not protected, this will impact on mitigation of climate change, desertification and biodiversity conservation. The climate change regime has raised awareness on the importance of forest functions which has been mainly under-valued and under-appreciated.⁶⁵⁸

The World Heritage Convention was one of the earliest instruments (1972) which leaned to environmental protection. However, the World Heritage Convention had to be developed further in order to be sufficient and adequate to cover forest protection. Like many other instruments, the recognition of the importance of forest ecosystems is always in the articles and

⁶⁵⁵ Harro van Asselt, ‘Managing the fragmentation of international climate law’, in Hollo J E, Kulovesi K and Mehling M (eds), *Ius Gentium: Comparative perspectives on Law and Justice*, Volume 21, (2013), Springer, 329-358, page 334-335.

⁶⁵⁶ FAO: Part 2 Forests, economic development and the environment. See website on <http://www.fao.org/3/X6953E/X6953E02.htm>. (See footnote 8 in text). Accessed March 3, 2020.

⁶⁵⁷ Braatz S, ‘International forest governance: International forest policy, legal and institutional framework’. See website on <http://www.fao.org/3/XII/1053-C5.htm>. Accessed on 16 January 2021.

⁶⁵⁸ Keenan J R, ‘Climate change impacts and adaptation in forest management: A review’, volume 72, (2015), *Annals of Forest Science*, 145–167, page 145-7.

obligations, but like others it falls short. These instruments never recognise the ecosystem approach (an important resort in forest protection) and nature of forests, and their interdependency as an ecosystem. Since conception, the Convention has needed to collaborate more with other environmental instruments adopted thereafter. It further did not enhance the linkage between forest landscapes and human induced land-use changes. These instruments need to identify the activities that have caused deforestation and propose how these can be regulated to protect forests. This is one of the main issues to reduce deforestation from human induced land-use changes. Furthermore, there is a need to recognise the needs of indigenous communities in this Convention who depend on forests products or services.⁶⁵⁹

The international community has voiced that the Convention's goals are unclear, ambiguous, and there is a lack of a theoretical framework on the many overlapping extensions of what is the definition and is heritage.⁶⁶⁰ Since 1972, there has been a lack of attention on the theoretical framework of what constitutes heritage sites which has resulted in confusion. This has been mainly due to lack of research and innovativeness in this area as it is an unknown field in environmental protection. This has resulted in this instrument lacking systematic obligations and other concepts to cater for environmental issues which are currently of common use. Given that there was never an instrumental framework with indicators on the state of conservation of forests, it is difficult to develop reliable measures of assessment of how well forests are being protected under the instrument and as heritage sites. Thus, the effectiveness of the Convention is unknown and Parties can simply ignore its obligations.⁶⁶¹

The selection criteria have also been well attacked by developing countries since they see the criteria as a subversive attempt to reduce sovereignty rights to govern the use of their resources. The listing of heritage sites can also cause problems for small countries as the listed places are given elusive media attention and this can increase the influx of tourists.⁶⁶² This can lead to small countries failing to control the tourists in these areas or lead to environmental

⁶⁵⁹ See website on <https://sustainableforestproducts.org/>. Accessed 16 January 2021.

⁶⁶⁰ Hua S, 'World Heritage Classification and related issues-A case study of the "Convention concerning the protection of the World Cultural and Natural Heritage"', 2 (2010), *Procedia Social and Behavioural Sciences*, 6954-6961, page 6954.

⁶⁶¹ Whitehorn R P *et al*, 'Mainstreaming biodiversity: A review of national strategies', Volume 235, July 2019, *Biological Conservation*, pages 157-163.

⁶⁶² Jones E T, Yang Y and Yamamoto K, 'Assessing the recreational value of world heritage site inscription: A longitudinal travel cost analysis of Mount Fuji climbers', 60 (2017), *Tourism Management*, 67-78, page 67.

degradation.⁶⁶³ Many countries have refused to include their sites in the List because tourism in cultural and ecological areas upsets the balance necessary for forest protection.⁶⁶⁴

In addition, listing a site is expensive for many developing countries. Many of the listed sites are mainly in North America and Europe which can be said to be a cultural bias against the Southern Hemisphere. Many forests are in developing countries in the Southern Hemisphere. The World Heritage Convention recognised the need to protect forests under protected sites. It can be said that the protected areas approach and the landscape approach were recognised mainly by the CBD more than this instrument, to protect forests to some extent the World Heritage Convention required to recognise the CBD and foster co-ordination and co-operation. The World Heritage Convention is appreciated because it recognised forest protection, but in its form it is neither adequate nor sufficient to protect forests. There is a need for further development in the Convention to protect forests. Within the framework of its Articles a protocol for forest protection would be welcomed which reflected similar initiatives by other instruments. However, the instrument has been important and successful in the protection of historical buildings, cathedrals, artefacts and monuments.⁶⁶⁵

Furthermore, the UNFCCC has been criticised for failing to reduce land-use changes in forest areas so that it can retain its obligation to stabilize emissions from GHGs.⁶⁶⁶ Land-use practices affect the daily lives of other species; the supply of raw materials has overtaken the need to protect forest ecosystems and services resulting in the need for more land. Land-use change has easily affected forest lands without concrete alternatives to minimise deforestation and forest degradation.⁶⁶⁷ Reforestation and afforestation are clear opportunities to maintain carbon sinks and reservoirs. However, the UNFCCC mandate is to stabilize emissions from the atmosphere but does not make it a mandate to achieve these goals.⁶⁶⁸ The countries ratifying the UNFCCC are given an option to be part of the reduction requirements through afforestation

⁶⁶³ Ibid.

⁶⁶⁴ Barrere C, 'Cultural heritage: From official to informal', 7 (2016), *City, Culture and Society*, 87-94, page 88.

⁶⁶⁵ Luigi Petti *et al*, 'Cultural Heritage and Sustainable Development Targets: A Possible Harmonisation? Insights from the European Perspective', (12) (2020), *Sustainability*, page 926-950.

⁶⁶⁶ Krug A H J, 'Accounting of GHG emissions and removals from forest management: A long road from Kyoto to Paris', (2018) 13 (1), *Carbon Balance Manage*, 1-11, page 2.

⁶⁶⁷ Ibid.

⁶⁶⁸ Streck C and Scholz M S, 'The role of forests in global climate change: Whence we come and where we go', 82 (5) (2006), *International Affairs*, 861-879, page 861.

and reforestation that generates carbon credits; they can choose whether they want to be a part of the global goal to stabilize emissions from GHGs or not.⁶⁶⁹

The UNFCCC and the Kyoto Protocol recognises that in order to reduce emissions from GHGs natural forests are important and deforestation has to be reduced or prevented. However, the UNFCCC does not have the legal enforcement to ensure countries protect their forests. The UNFCCC has passed the baton to its protocols to set mandatory GHG emission targets under Article 17. The UNFCCC has allowed other Protocols and Accords to be made from its objectives and programmes.⁶⁷⁰

The Kyoto Protocol has advocated for reforestation and afforestation under its LULUCF programmes not precisely forest protection. However, the growth of trees takes time and afforestation of lands can lead to invasion by alien species, thus more should have been to do with forest protection. Most trees in ‘artificial forests’ used in afforestation projects are not resilient to climatic changes as already the standing forests. Forest plantations can be susceptible to climate conditions, diseases or wild fires. Natural forests are unique in that there is a wide variety of trees in one forest without any human induced hand-picking - they are tree species that have adapted those areas over a long period of time. This is unique and important for biodiversity conservation.⁶⁷¹

Natural forests are interdependent ecosystems, they provide ecosystem services and also rely on other ecosystems. Man-made plantations are not natural ecosystems and they do not have specie variance and might not function properly with other ecosystems and species. They tend to be monoculture depending on species chosen by people (handpicked) and fast-growing. Alien invasive tree species are usually prone to diseases and pests, this reduces genetic diversity, as explained above. In addition, the afforestation and reforestation programmes under

⁶⁶⁹ Ibid.

⁶⁷⁰ Congressional Research Service. The United Nations Framework Convention on Climate Change, the Kyoto Protocol, and the Paris Agreement: A Summary, January 29, 2020. See website on <https://fas.org/sgp/crs/misc/R46204.pdf>. Accessed on 16 January 2021.

⁶⁷¹ Assessing biodiversity in LULUCF-CDM projects: Towards synergizing UNFCCC and CBD. See website on <https://www.cifor.org/knowledge/publication/1638/>. Accessed on 16 January 2021.

Article 3(3) results in an unbalanced emission systems and leakage which Article 3 (4) needed to fix and provide more guidance to the Parties.⁶⁷²

The Kyoto Protocol incentives are said to enhance the biomass stored in forests only when specific management actions are implemented. These systems are limited and will not secure sustainable forest management or sustainable use of forests.⁶⁷³ This also does not take into account the locality of the projects and the accounting on many specific situations. Harvested wood products are not accounted for, only the forest areas carbon pools are included in the accounting for emissions in the Protocol.⁶⁷⁴

Moreover, many of the rules of the Protocol are complex to review for the next commitment periods, thus broader actions to reduce emissions should be rewarded. The Kyoto Protocol has also imposed moderate targets on developed country Parties to reduce emissions.⁶⁷⁵ In short, developed countries will take these actions to reduce emissions as slowly as they can or will leave the mandate to developing countries who will complain that they lack finance and staff with expertise.⁶⁷⁶

The inter-annual variability fluctuations of carbon in the terrestrial pools and atmosphere are not recognised by the Protocol since it uses a single year for the base period. The values from a one year period can be very high or lower than the problem characterised. The five year commitment period makes this problem magnify. The problem could have been solved by monitoring areas for a long period of time. A base period of ten years could have captured inter-annual variability and provided realistic presentation of GHG emissions and removal in a given area.⁶⁷⁷

⁶⁷² United Nations Framework Convention on Climate Change Subsidiary Body for Scientific and Technological Advice. Thirteenth session, Lyon, 11-15 September 2000. See website on <https://unfccc.int/resource/docs/2000/sbsta/misc06.htm>. Accessed on 16 January 2021.

⁶⁷³ See note 666.

⁶⁷⁴ Atsushi Sato & Yukihiro Nojiri, 'Assessing the contribution of harvested wood products under greenhouse gas estimation: Accounting under the Paris Agreement and the potential for double-counting among the choice of approaches', Volume 14, Article number: 15, (2019), *Carbon Balance and Management*, 2-19, page 2-4.

⁶⁷⁵ See note 666, page 3.

⁶⁷⁶ Eni-ibukun T, 'Climate Justice: The Clean Development Mechanism as a case study', *Ius Gentium: Comparative perspectives on Law and Justice*, Volume 21, (2013), Springer, 225-256, page 242.

⁶⁷⁷ Collins, M., R. Knutti, J. Arblaster, J.-L. Dufresne, T. Fichefet, P. Friedlingstein, X. Gao, W.J. Gutowski, T. Johns, G. Krinner, M. Shongwe, C. Tebaldi, A.J. Weaver and M. Wehner, 2013: Long-term Climate Change: Projections, Commitments and Irreversibility. In: *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Stocker,

The Kyoto Protocol has limited itself from addressing global emissions in many countries; this is because not all recognised emitters are included in those articles with reduction commitments.⁶⁷⁸ Many non-Annex-I Parties (developing countries) do not have to face emission targets since they do not have legally binding emissions reductions targets. The United States (a big emitter) did not ratify the UNFCCC therefore the Protocol applies to a third of global well-known emitters. The emission target limits set by the Protocol are too generous since the climatic changes will still persist if other countries choose not to even play a part.⁶⁷⁹ There is a need to tighten participation and compliance so that those countries who have signed the Protocol can always perform and the instruments can be enforced.

The negotiations to include more forest projects (excluding reforestation and afforestation) failed to materialise during the negotiations; and Parties failed to agree on how forests could be included in climate change instruments. In 1997, many negotiators (unlike today) underestimated the role played by forests in climate change mitigation. During this period, advanced scientific knowledge was still limited and the negotiators did not have the best of well-informed researchers in this field. As above, some NGOs believed that fossil fuel is the rightful cause of climate change and efforts must be put to reduce and minimise the use of them. Thus, the reference of forest projects in the Protocol is limited to accounting rules only in its projects.⁶⁸⁰

Furthermore, the Protocol does not address the issue of forest protection in Tropical countries, which should be given more emphasizes since the recent forests in the South American Amazons. These countries are restricted in many opportunities, projects and programmes under the CDM. It did not include all and the full LULUCF-related land-use changes in carbon sinks and stocks. It failed to provide an incentive framework for rewarding forest protection and conservation, SFM and afforestation.⁶⁸¹ The creation of LULUCF also divided the negotiators and NGOs. Many NGOs saw this as a considerable project that could encourage sustainable land-use practices. However, it was argued that LULUCF was being limited to afforestation

T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)). Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. See website on https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_Chapter12_FINAL.pdf. Accessed on 16 January 2021.

⁶⁷⁸ See note 666, page 4.

⁶⁷⁹ Ibid.

⁶⁸⁰ Hohne N *et al*, 'The rules for land use, land use change and forestry under the Kyoto Protocol—lessons learned for the future climate negotiations', 10 (2007), *Environmental Science & Policy*, 353–369, page 353-5.

⁶⁸¹ See note 666, page 6.

and reforestation projects. They argued that giving credits to countries for sinks would allow them to use cost-efficient measures for compensation which would let them off for using fossil fuels, this many countries saw as generating even more emissions.

The carbon sinks in developing countries are used to meet only one per cent of their countries' Protocol obligation. Instead of agreeing on the protection of the existing carbon sinks (forests, which would reduce deforestation), the decision was declared non-eligible under the CDM project category. This was the one of the most important issues under the LULUCF and has rendered the regulatory framework of the Kyoto Protocol extremely cumbersome.⁶⁸²

In addition, critics of the CDM were afraid that these plantations referred in the Protocol as afforestation and reforestation projects could drive local people off their lands leading to deforestation elsewhere and afforestation or reforestation on their agricultural lands. Consequently, scientific complexity and insufficient data are major challenges under the CDM and the monitoring of further projects under the LULUCF has made it more difficult. Many researchers had to be stationed in different parts of the country to collect data on one single country to prevent leakages (monitor and evaluation programmes). The Kyoto Protocol fails in its LULUCF projects in addressing the deforestation and forest degradation which is a source of GHGs emissions in developing countries, they have no legally binding obligation to partake these actions.⁶⁸³

Mainly, it has been the short-sightedness of the programme, lack of funds and trained personnel. It should also be noted that the Protocol requires an undertaking from Annex-I countries to reduce emissions. Developing countries are not given any obligation to reduce emissions in their countries caused by deforestation.⁶⁸⁴ This can be seen as devastating for forest protection and climate change mitigation since most of the forests are located in developing countries in the Southern Hemisphere, as explained above. These countries have abundance of biodiversity and rich natural forests which are being lost because they are not protected.

⁶⁸² Schlamadinger B *et al*, 'A synopsis of Land Use, Land-Use Change and Forestry (LULUCF) under the Kyoto Protocol and Marrakech Accords', (2007) 10, *Environmental Science Policy*, 271–82, pages 280-2.

⁶⁸³ *Ibid*, page 273-5.

⁶⁸⁴ Sagemuller I, 'Forest sinks under the United Nations Framework Convention on Climate Change and the Kyoto Protocol: Opportunity or Risk for Biodiversity?', 31 (2006), *Columbia Journal of Environmental Law*, 189-242, page 208.

The CDM has its own critics; it reduces the morale of developed countries in trying to reduce emissions by allowing developing countries to do it for them.⁶⁸⁵ Furthermore, there is a problem of additionality; if developing countries had plans in their NDPs to reduce emissions; there is no need to award a developed country with carbon credits. For example, if Spain partnered with South Africa to buy-off credits through reducing carbon emissions but it turns out South Africa had already integrated plans in its National Development Plan to reduce emissions. There is no need to give Spain the credits since South Africa was already doing this but seen in the Articles it might mean Spain would get credits and never meet its goals to reduce emissions. This actually reduces the efforts of the Spanish government to reduce the use of fossil fuels and deforestation that increase carbon emissions. The programmes to reduce emission can be a double edged sword, prone to work well if implemented correctly and effectively, however they can easily be abused by other Parties.

The omission of ‘forest protection’ under Article 3(3) means that this was not part of the emission reduction projects inclusion of afforestation and reforestation projects.⁶⁸⁶ This could mean that countries can continue with deforestation but meanwhile the Protocol supports afforestation and reforestation projects. Countries could have been advised or required to take the necessary measures to protect their forests and prevent deforestation at all costs. Forest protection is important for managing the health of all forest ecosystems and not mere carbon sinks and reservoirs. The Marrakesh Accords are not sufficient because they do not focus adequately on forest protection, perhaps because this issue is separate to climate change. The main issue here is that these instruments recognise forests ecosystems and functions in a mono-functional view, thus unable to reduce deforestation or advocate for sustainable land-use changes that cause deforestation and forest degradation.

In the Protocol, (Article 6) mentions that projects and programmes can be developed in any sector. This can be interpreted as including forest conservation. However, the complication is that Article 3(3) states that these activities need to be measured as ‘a verifiable change in emissions stock’. It is unclear whether how much forest protection can produce these wanted positive changes in verifiable stocks since these activities can protect stock that already exists.

⁶⁸⁵ Schwatz J, “Whose woods these are I think I know’. How Kyoto may change who controls biodiversity’, 14 (2006), *New York University Environmental Law Journal*, 421-480, page 426.

⁶⁸⁶ Aguirre J G, ‘Why cutting down trees is part of the problem, but planting trees isn’t always part of the solution: How conceptualizing forests as sinks can work against Kyoto’, 11 (2009), *Oregon Review of International Law*, 205-224, page 208.

Furthermore, the Protocol bases its concept on reducing emissions and many old trees release more carbon dioxide than sequester. This has led other developing countries to continue with a perverse incentive way of harvesting old trees. This has also affected mainly the conservation of biodiversity since many species prefer and rely on old trees as habitats.

The Protocol does not explicitly refer to the protection of biodiversity. The Protocol makes a few non-explicit sections on environmental protection in a general sense. In its Article 2 (1) (a) (ii), the Protocol states that Annex I Parties should take into consideration other relevant international environmental agreements especially when protecting and enhancing sinks. This is likely aimed at the CBD which is recognised as the instrument that covers conservation of biodiversity. However, the conservation of biodiversity is done in a soft manner by Article 2 (1) (a) (ii) which does not explicitly state the work and wording of the CBD. The Protocol gives Parties the duty to promote SFM practices, reforestation and afforestation. However, this is not supported throughout its frameworks and leaves the decision to the Parties. The SFM practices are regarded as contentious and difficult to handle. These unresolved issues are left at the disposal of the Parties without further help and explanation from the Protocol itself.

The LULUCF activities are limited in scope and some of the activities prescribed by the Kyoto Protocol were to be defined later on. The Protocol does not include penalties for Parties who do not fulfill or fail to meet the carbon reduction targets. It has failed to realise that forests are ecosystems that provide many services; they are a multi-function ecosystems not a mono-function ecosystem. This has undermined the other functions of forest ecosystems and has set improper forest conservation projects and programmes. Since it is an ecosystem protection, measures should be well balanced realizing the other functions of forests that might be impeded by one aspect of a conservational programme.⁶⁸⁷

The decision taken by the Parties of the Protocol are not binding and they reflect more a ‘soft law’ nature than the required ‘hard law’ for forest protection. Since the Protocol was made, it has retained a dinosaur-like nature as it has not evolved and no recent programmes or innovation projects have been added. The USA did not even ratify this Protocol and it is one of the biggest users of timber, wood and other forest productions. This has rendered the Protocol inept, failing to raise funds, researchers and innovative environmentally friendly

⁶⁸⁷ Scotland E, *Environmental principles and the evolution of environmental law*, Bloomsburg Publishing (UK), (2017), page 27.

technology. The Protocol remains highly ambitious to the USA and unfair to developed countries that are required to commit most of the Protocols funds in order to fund programmes in developing countries.

Nevertheless, it can be said that one advantage of the LULUCF going into the future is that the current structure has been agreed and developed upon in the Kyoto Protocol. The monitoring and reporting systems under the LULUCF in terms of the Protocol are already operational and to move away from this will be expensive and time consuming.⁶⁸⁸ The current structure definitely has problems that can be addressed in the next commitments. Other than that, the LULUCF is promising if its framework and articles can be made more concrete for forest protection. Thus, this framework can be transposed to a new instrument that can be then be agreed upon.

Consequently, REDD was adopted under the UNFCCC, but no treaty or formal agreement was ever made or negotiated. The decisions and discussions that are held under REDD are not binding and have lesser status in the international arena. The international community agreed but there was no consensus proposal on the design of the REDD system. REDD remains a country-driven pilot project rather than a collective unified international plan.⁶⁸⁹ The REDD projects that are recognised have different definitions of forests and also methods of financing the scales of implementation. This has caused scholarly confusion and a lack of clarity on the main objectives of REDD.⁶⁹⁰ For the negotiators, it was important to have consistency on the main issues and the key unanswered questions. REDD remains mono-functional with deeper analysis of drivers of deforestation lacking and required.

The REDD+ is an important policy approach and has a vital framework for mitigation of climate change and the recognition of forests. However, there was never a formal agreement to make REDD+ into an instrument. The REDD+ lacks the international standardization and support required to make it a binding instrument. It also has methodological difficulties because of the expanded scope of REDD. This means it is difficult for it to meet the climate change safeguards and mitigation projects. These initiatives lack international oversight with complexity problems in reporting. The most problematic part is that REDD in its early narrative

⁶⁸⁸ See note 682, page 282.

⁶⁸⁹ Massarella K *et al*, 'REDD+, hype, hope and disappointment: The dynamics of expectations in conservation and development pilot projects', (2018) 109, *World Development*, 375–385, page 376.

⁶⁹⁰ Lund F J *et al*, 'Promising Change, Delivering Continuity: REDD+ as Conservation Fad', Volume 89, January 2017, *World Development*, 124-139, page 124.

was reported as an ‘international hard law’ with the intention to address climate change, biodiversity conservation and forest protection. It also did not develop this too and has turned out into something completely different, as explained it is now a country-driven approach.

Since REDD, projects have turned out to be more of national approach, and indigenous communities have protested against the REDD projects. In many developing countries, the governments do not respect constitutional rights which could lead to these people being removed from their lands in favor of conservation projects in order to gain REDD funds. It is likely also that the communities will never participate in decision making, in the design and implementation of REDD policies. These policies have been assessed as highly unequal by the participating NGOs in the fact that they do not recognise the indigenous people’s rights.

As already pointed out, the REDD projects have turned into a national approach; many developing countries have never reduced their deforestation. They have complained that they lack the funds and researchers who will conduct a thorough action plan and collect information on forest lands. They also state that they lack the expert capacity to monitor their own forests. This has been seen by developed countries as a greedy complaint to gain financial incentives without any forest protection being undertaken on site.

This has subsequently turned into a misdirected focus and accountability. Firstly, it has led negotiators to stray from discussing its main objective which was about reducing deforestation and forest degradation for the mitigation of climate change. Secondly, policy-makers are now focused on a different path and allow the misunderstanding of the objectives of REDD to further abandon their original theme. This has resulted in a weak forest protection framework with financial challenging issues decapitating discussions and negotiations being held yearly.

The problem this has caused in international environmental law discourse is treaty fatigue (will be explained in the following Chapter). This becomes a psychological barrier for international policy-makers who cannot argue to promote for a new instrument with States because of the already available information that REDD+ was meant to perform certain functions but it has failed to live up to the hard law expectations.⁶⁹¹ The current REDD programmes have failed to recognise and internalise many of the forest ecosystem services since it has remained mono-functional on forest ecosystem services. This has led to the undervaluation of land by environmental economics.

⁶⁹¹ Ibid.

The REDD+ is becoming a discord, with multi-purpose, multi-level, multi-projects and multi-initiative programmes. There are now many multi-spheres of decision-making and various organisations. This has created contested interests and claims which have also become multi-implemented actions being run by many people of different vested interests. This has cascaded down, and ahead of policy processes and other State driven decisions in many different regions, locations and forest ecosystems. The new institutions in REDD+ has not resulted in any binding commitments that could address forest protection. The forest legal regime is based on mainly soft law. It has approximately over forty international organisations and over twenty cross sector international agreements that try to address forests protection; this has made the international forest regime complex. The main consensus is that this regime has been largely ineffective.

Furthermore, the REDD+ initiatives can only function in an already functional and effective national environmental legal system. The REDD+ is an important element in the realisation of the value of forests and forest ecosystems. It also promotes the sustainable and economically efficient use of forests. However, over regulation and lack of transparency will always hinder this since governments will always fight with small communities or tribes that own land; and different levels of government can also fight hampering the implementation of the REDD+ initiatives.⁶⁹²

However, the climate change regime negotiated under the UNFCCC carries a significant weight in international environmental law than that of the forest protection or even that of the biodiversity regime. The Kyoto Protocol has been negotiated under the UNFCCC with binding commitments on some Parties and has a framework of a binding international law treaty form. This Protocol and together with REDD+ incentives have generated the much needed bureaucracy and framework to implement and monitor the ecosystem service market. This functioning market has carried its own momentum in the mitigation of climate change regime and raised funds which can be used for co-benefits.

There are legitimate effectiveness concerns in the Kyoto Protocol commitments, compliance and in its mechanisms. International effort in the climate change regime is more effective than the forest regime soft-law approach on the international legal regime. As a result, many

⁶⁹² Ibid, page 124-6.

frustrated with the forest regime have started to look at the climate change regime for more forest protection. Importantly, forest protection proponents have applauded the recent efforts in the climate change regime especially in the REDD+ incentives and Paris Agreement⁶⁹³ to invoke co-benefits that can result in successful implementation of forest protection laws, programmes and projects. However, the REDD+ now functions in its governance form which is a particular framing problem in the climate change regime since the UNFCCC had already done that. This has resulted in problems of multiplicity, confusion and inconsistency in the climate change regime.

The REDD+ mechanism has become a voluntary mechanism which is country-driven with limited UNFCCC oversight.⁶⁹⁴ The REDD+ has limited obligations except for national policy approaches that countries might need to implement. It is not an instrument; in fact one could argue that they are ideas and strategies of high profiled officials on a nice letter-head. These decisions are not binding and have no status in international environmental law; they are an ingredient in a recipe book which might add nothing to the actual meal. The Parties of the UNFCCC are encouraged to conserve sinks without the incentives detailing how this can be achieved. Instead, it has pointed to some unclear programmes which Parties might want to add to their national policies.

As shown in this section, the international legal climate regime contains numerous instruments, projects, programmes and initiatives with provisions that relate to forest conservation and management. However, none has referred to forest protection or attempts to do so. This has been done by general commitments which are non-binding and non-compulsory. There are no feedback or compliance mechanisms for forest protection, therefore the continuation of deforestation and land-use change of forest lands.

Furthermore, the REDD+ expressed the much needed use of technology compliances, however it is difficult to measure or quantify carbon emissions from deforestation and forest degradation. The causes of forest degradation and deforestation are complex and they need permanent monitoring and solutions that will effectively change the course of land-use

⁶⁹³ See note 55. United Nations Climate Change Paris Agreement 2015. See website https://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf. Accessed on 26 October 2017.

⁶⁹⁴ See note 690.

management. This is not provided in the scheme of the REDD+ and undermines the integrity of the policy approaches to reduce deforestation.

In addition, the REDD+ incentives seems to have created a moral hazard in which developed countries are allowed to escape reducing their own carbon emissions and buying them from developing countries. REDD+ offsets are a by-pass to pollute the environment more than the developing country from whom they buy the offsets.⁶⁹⁵ The global atmospheric cycle does not matter which region a country is from or continent, everyone should be focusing on playing their own part in reducing emissions and protecting carbon sinks and reservoirs.

A perverse notion has been put forward on how developing countries can gain financial incentives from forest carbon sinks. It is clear that if a developed country buys carbon offsets from a developing country; that country's economy might become stagnant and never develop in terms of infrastructure and technology. The international carbon trade system has been questioned by developing countries.⁶⁹⁶ They have criticised these incentives and accused developed countries of trying to control their economies and reduce their economic development.

Whilst Parties are required to reduce deforestation, SFM, afforestation and reforestation, the regime does not give concrete limitations to LULUCF activities that cause deforestation. It further does not list unsustainable practices that lead to deforestation. Thus, without a minimum standard of common measures, it is difficult to reduce deforestation and make forest protection effective. There is no way of even limiting unsustainable practices that affect the environment adversely. Without a binding forest protection instrument with standards, forests depend on individual project participants in different regions.⁶⁹⁷

The climate change regime had however picked an important tool of impact assessment, as this is able to identify projects that have adverse potential effects on the environment. However, it falls short because performances of impact assessment are not mandatory and depends on the States in question. The determination of the criteria, specifics and procedures is left in the hands of the participants. There are no feedback mechanisms or proper monitoring and evaluation to ensure notification if the impact assessment process has been performed, nor are there

⁶⁹⁵ Ibid, page 127.

⁶⁹⁶ See Bankobeza S, Mrema M E and Ramakrishna K, 'International environmental diplomacy and negotiations', in Kuokkanen T *et al* (eds), *International environmental law-making and diplomacy: Insights and Overviews*, (2016), 83-96.

⁶⁹⁷ See website on <http://www.fao.org/3/mi749e/mi749e.pdf>. Accessed on 16 January 2021.

mechanisms or penalties (enforcement mechanisms) for those who do not complete an impact assessment process at all.

Moreover, reporting and monitoring is important in environmental law since it is one of the only way policy makers can see whether the correct procedures and administrative standards have been followed. Reporting and monitoring is one of the bases in international law that can be used to adopt improved regulations and procedures to effectively protect forests. They are also assisting in revealing forest protection concerns. However, no evaluations, indicators and monitors have been put in place to assess the loss of other species who habitat in forests when forests are deforested or degraded. They are no framework body or measures put in place to govern the accuracy of reporting on the LULUCF activities. In short, they are major deficits on the reporting, monitoring and evaluation obligations under the climate change regime to ensure and improve the effectiveness of forest protection on the international arena, especially on accounting for forest biodiversity loss across all continents.

As stated above, the introduction of forest projects results in natural forests land being deforested for forest plantations. This issue was never concretely dealt with correctly in the climate change regime. The Parties of the UNFCCC chose to account for leakage before calculating the expected issuance of their credits. The prior assessment is not usually effective in terms of accounting for GHGs. This is because leakage might not usually be foreseeable prior to the issuance of those credits. Moreover, prior accounting cannot deter effects after the credits are granted. If the deficiencies are not addressed in the international legal climate change regime, this can have devastating consequences.⁶⁹⁸ They are synergies between biodiversity and climate change that need co-operation for forest protection. However, with these weaknesses there is a need for a regime which protects forests to solve these gaps that have been created in the climate change regime.

The REDD+ is not designed to also protect other forest ecosystem services.⁶⁹⁹ It is a positive strategy which can have its own minor rewards and that must be affirmed. Since there is no current agreement on REDD+, it should not be expected to do a job it was not designed for.

The Paris Agreement has certain differences to the Kyoto Protocol as the Protocol set out different goals for Annex-1 and non-Annex-1 countries. The Paris Agreement does not seem

⁶⁹⁸ See Ponting C, *A green history of the world: The environment and the collapse of great civilisations*, New York: Penguin Books, (1991), pages 128-140, 194-212 and 222.

⁶⁹⁹ See note 690, page 129.

to follow this scope as it requires every Party to reduce and submit reduction carbon emission plans. The Paris Agreement also allows countries to set out their own voluntary targets.⁷⁰⁰ It remains to be seen whether the targets of the Paris Agreement will be legally binding or seek a political solution to allow Parties to ratify the Agreement first. However, on paper it seems that there are no legally binding obligations to Parties in this Agreement. This executive structure of the Agreement leads scholars to point out that this Agreement will never develop into treaty because of the lack of legally binding obligations and targets.⁷⁰¹ However, currently there is a global common drive to develop methods to mitigate and adapt climate change, and it has gained prominence.

The Agreement advocates for global de-carbonization, yet the issue of fossil fuel was never dealt within its Articles. There is no common framework in the Agreement for reporting of commitments, targets and the efforts taken by the Parties under Article 4 and 13.⁷⁰² The Agreement passes the duty to report and review these targets to the governing international laws. However, if the UNFCCC has already failed to mitigate climate change and global warming, the Paris Agreement faces a definite uphill. The Agreement will continue to face opposition from developing countries who will continue to contest for their natural resource governance sovereignty.

Furthermore, Article 28 of the Agreement allows Parties at any particular time to withdraw from the Agreement with a written note to the Depository. This has led to the United States of America withdrawing from the Agreement. Many developed and industrialised countries have complained that the Agreement is too ambitious since many of them will not meet the pledges made under the Agreement. Furthermore, this Agreement was loosely framed so that it could

⁷⁰⁰ See note 55. The Paris Agreement is a bottom up structure agreement that seeks consensus on the part of States. These Parties have voluntary actions to reduce the GHG emissions. Unlike the Kyoto Protocol which has legally binding force, the Paris Agreement seeks to foster coordination, integration and cooperation which are voluntary actions without targets to reduce emissions.

⁷⁰¹ Viola E, 'The structure limits of the Paris Agreement and the need of a global coalition for deep de-carbonisation', in Wilhite H and Hansen A (eds), *Will the Paris Agreement save the world?: An analysis and critique of the governance roadmap set out in COP-21*, Oslo Academy of Global Governance Working Paper, 1 (2016), 47-56, page 55-6.

⁷⁰² Torvanger A, 'A core reporting framework to strengthen implementation of the Paris Agreement', in Wilhite H and Hansen A (eds), *Will the Paris Agreement save the world?: An analysis and critique of the governance roadmap set out in COP-21*, Oslo Academy of Global Governance Working Paper, 1 (2016), 33-40, page 39.

allow the major carbon emitters to agree.⁷⁰³ The emission reductions agreed by Parties are still insufficient to reduce the emissions already in the atmosphere and to mitigate climate change.

As discussed above, it is still too soon for the judgement to be passed on whether the Paris Agreement will pave the way for a forest protection instrument or whether its Articles will be sufficient for forest protection. In short, the Agreement is still vested in the interests of climate change regime, thus it cannot be anticipated in the future that it will lay the foundations of forest protection.

In addition, the desertification regime and the UNCCD also remain mono-functional with issues relating to the forest protection being ignored. In this instrument, forests are seen as agents that can reduce land degradation for reducing desertification and land degradation. It again falls short of making an instrument for forest protection. It is not an adequate instrument for forest protection since its framework is for mitigation and reducing desertification and droughts. The instrument is relevant for forest protection since it started debate and recognised an important function of forests. The UNCCD recognises the need to reduce land degradation to reduce desertification and droughts. However, this instrument is not adequate and sufficient since it never recognised forests as standing ecosystems with various functions. Its framework was not designed to cater for the needs of forest protection.

In addition, the CITES have undertaken needed oversight, allowing countries to implement domestic and international regulation of trade of tree species. However, CITES remains a narrow instrument targeting only specific species which are now under threat or endangered and being regionally or internationally sold. It fails to address the multiple and complex drivers of deforestation and forest degradation. The purpose of forest protection instruments should be to protect all tree species not only threatened, endangered and facing extinction tree species.

The CITES treaty was designed to reduce international trade in threatened or endangered species, not the sustainable extractive use of species. These two concepts are different and CITES tried to sell a product which it does not have in its framework. A country can still cut down trees and sell timber domestically. It is rather concerned with intervention mechanisms to control international trade and which species are being traded than facilitating sustainable

⁷⁰³ Hansen A, 'Analysing and critiquing COP-21: The problems and potentials of the Paris Agreement', in Wilhite H and Hansen A (eds), *Will the Paris Agreement save the world?: An analysis and critique of the governance roadmap set out in COP-21*, Oslo Academy of Global Governance Working Paper, 1 (2016), 65-70, page 67.

trade. The effects of international trade on the majority of species listed in the CITES is unknown since monitoring in these instrument is cumbersome and highly ineffective. There is an absence of accurate biological and trade information, and also collection of data per location to list these species. Much effort has been made to list the species which are definitely facing extinction or endangered, but less effort has been made in sustainably managing them. This usually requires much extensive funding and expert personnel, not many States can afford this expense.

Furthermore, it is a country's prerogative to list the species that are facing threats. Species listed in the Appendices can only be traded if the requirements of CITES are satisfied, which is the Scientific Authority from the States of export that trading in this specie will not be detrimental to their survival. This provision is open to abuse and any interpretation in the most perverse of ways. Countries may or not list these species depending on political will, need for finance, and how they value their natural resources. The problem with Article IV is that it gives developing countries powers which they could potentially abuse. There are no safeguards to non-performance in this manner; it is a vague and ambiguous Article that allows a certain manoeuvre in the most unsustainable use of tree species. This is already happening in Congo, Papua New Guinea and Brazil, such an Article gives countries with huge tracks of forests too much power. With the level of deforestation such fears are well-grounded and there is a need to reduce this abuse of authority and power that leads to unrampant deforestation.

Consequently, a country can list species which is required by another State as a diplomatic ploy. This specimen can be required in the pharmaceutical or agricultural sector for biotechnological engineering, but due to historical, political and colonisation relationships a developing country can ban the trade of a specimen. To make matters worse, Article XIV allows Parties to use stricter trade conditions on another State trying to import a specimen. There is surely much emphasis and power being given to States in these articles without purpose or direction. It will be astonishingly a miracle, for a Party who has led her species to be endangered to start taking actions after the recognition that they are endangered. Although certain developed States do take action to enable the species to revive in numbers, but the overall majority of developing States are struggling to revive numbers of some species. The most species that have been revived in numbers from extinction, have been removed from the safekeeping of these States and kept in developed countries in protected areas so that they can retain the numbers. In short, the desired conservation targets in CITES may not be considered by the Parties if they are given the discretion to choose which species to list.

The incentives provided have not helped much to control illegal logging. This is usually because political leaders in developing countries can be bribed and lack the political will to protect natural forests. This can be solved by building stronger institutions, changing the personnel on contracts to increase transparency, establish anti-corruption units and funding investigations. In addition, this CITES system is based on certifying tree species from sustainable well-kept forests and national documentation of which both can be falsified by government officials.⁷⁰⁴

Furthermore, trade bans do not normally work. The effectiveness of trade bans is influenced by costs of enforcement and conservation budgets. Trade bans are effective on countries with different financial investments in species protection or conservation. These trade bans can be counterproductive to sustainable use and species conservation. Moreover, trade bans can affect the economic aspects of indigenous communities who rely on selling these species and their products.⁷⁰⁵

The species that are listed under Appendix I are critically threatened with extinction, therefore they are excluded from commercial use and trading. Many of these species are in developing countries which lack good governance. This has resulted in the ineffective implementation of the Article IV. In short, without political will from developing countries Article IV and XIV have limited power and functionality. Thus, the legal obligations given in CITES have limited power and capacity to make sure international trading of species is sustainable. In this sense, sustainable use of these species could have been improved by fostering the support of the local communities. Community support is usually maximized by giving indigenous people ownership rights. This can be done by building effective incentive structures and tenure rights which prevent communities from seeking other alternative land-use strategies.

Moreover, instead of advocating for the trade restrictions, the CITES should have improved trade controls and trade opportunities. This is most likely to help in the effective development of specie incentive-driven protection and conservation strategies. There is a need for strategic co-operation with the legal arms and framework of the CBD which advocates for sustainable use of biodiversity. This is because for CITES alone as a single instrument, it will be difficult to reduce the trading of important species with major use in the pharmaceutical industry. The

⁷⁰⁴ Eskew A E *et al*, 'The CITES Trade Database is not a "global snapshot" of legal wildlife trade: Response to Can *et al.*, 2019', 18 (2019), *Global Ecology and Conservation*, 1-3, page 1-2.

⁷⁰⁵ Webera S D *et al*, 'Unexpected and undesired conservation outcomes of wildlife trade bans—An emerging problem for stakeholders?', Volume 3, January 2015, *Global Ecology and Conservation*, pages 389-400.

CBD through its arms, framework and COPs has now identified clear goals for and to promote sustainable use of biological resources.

As above, the theme of the CITES is narrowly targeting particular tree species which are threatened by international trade. This relatively addresses a few species and does not address the multiplicity and complex drivers of deforestation which threaten the survival of timber species which continue to be harvested.⁷⁰⁶ Despite, a number of treaties addressing biodiversity conservation and protection, the international regime governing forests has remained limited and with non-existent legal force.

The problematic features of CITES is that it lists one specie after another and forest protection advocates for the protection forests in their entirety. This is because forests are much more than just few species, they are far broader, complex and an ecosystem.⁷⁰⁷ In addition, the implementation of this instrument is difficult to measure since trading is conducted internationally and data needs to be collected from various institutions including airports, train or bus stations to regions and countries.⁷⁰⁸ The practical matter of this is that specie data collectors will have to walk an entire forest looking for one or several tree species (imagine the length and breadth of the Amazon or the Central African forests) to review if that tree species is now endangered or threatened by extinction.

Furthermore, specifically for forest protection there is a need to deal with the drivers of deforestation and forest degradation. Deforestation and illegal logging are usually a national problem. Many people in developing countries cut down trees for firewood, charcoal, building material and agricultural lands than international trading in timber. Trading can also be on a more domestic scale where one province can trade with another. This cannot be protected or reduced under CITES and it results in continued failure. In essence, it is a treaty which is difficult to use with other treaties since its principles seem to stand-out on their own. It is in a way relating more to the World Trade Organisation and their policies than it is to its counterparts in international environmental law. This compounds the issue of treaty

⁷⁰⁶ Wiersema A, 'Climate change, forests, and international law: REDD's descent into irrelevance', 47 (2014), *Vanderbilt Journal of Transnational law*, 1-66, page 10.

⁷⁰⁷ Ibid.

⁷⁰⁸ Foster S, Wiswedel S and Vincent A, 'Opportunities and challenges for analysis of wildlife trade using CITES data – seahorses as a case study', Volume 26, Issue1, (2016), *Aquatic Conservation: Marine and Freshwater Ecosystems*, 154-172, page 154.

fragmentation in international environmental law. For the reasons given above, it can be said that CITES falls short in forest protection.

The ITTA aims to make the trading of timber sustainable, legal and legitimate.⁷⁰⁹ The instrument focuses precisely on timber as a commodity rather than as a forest ecosystem that provides products and timber are some of these. The ITTA focuses precisely on making timber a viable commodity in a well-structured, governed and controlled international market. The instrument should have put forward a stricter forest certification or license and permit system to reduce the number of companies who can harvest timber. This would have reduced the number of companies that can harvest forests. The objective of the instrument since 1983 has been to recognise the trading of timber legally and set the feed programmes to increase the harvesting of timber.

In Article 2 (2) of the 2006 Agreement, the instrument fails to define what is SFM and refers the Parties to the definition that will be provided in the Organizations' (ITTO) policy documents and technical guidelines. For these reasons, many regions do not treat the ITTA as an instrument with an environmental component, rather an effective timber trading instrument. The ITTA is viewed as a commodity agreement rather than a forest protection instrument. The ITTA should put forward stronger commitments with the CITES since it lists species that can be threatened by extinction usually such species are timber species. In Article 30, the instrument recognises that in exceptional circumstances a Party can be relieved of its obligations, by a special vote in Article 12. That means Parties can vote each other out of the obligations of the ITTA so that they can escape from compliance. Furthermore, it must be stated that the instrument is mainly for Tropical Forests. Thus, its achievements have been uneven and restricted to one region and type of forest. Since the instrument was promulgated, it has never produced documents showing that there is an improvement in the world timber industry in the Tropics which is related to its efforts since 1983.

In many developing countries, timber is a basic commodity and minimising the use of it will require strong and binding enforcement such as that conferred by binding instruments.⁷¹⁰ The developing countries want to sell their timber because there are no economic incentives in this

⁷⁰⁹ Cashore B, Leipold S and Cerutti O P, 'Global Governance Approaches to Addressing Illegal Logging: Uptake and Lessons Learnt', in Daniela Kleinschmit *et al*, (eds), *Illegal Logging and Related Timber Trade – Dimensions, Drivers, Impacts and Responses. A Global Scientific Rapid Response Assessment Report*. IUFRO World Series Volume 35, (2016), Vienna, 1-148, pages 119-22.

⁷¹⁰ See Chasek S P and Downie L D, *Global environment politics*, Boulder: Westview Press, (2013), pages 131-151.

instrument to attract them to comply with the instrument, and they have also refused to abide by the obligations; lack of political will to enact domestic policies; and lack proper monitoring and reporting.⁷¹¹ In many tropical countries, the issue of land tenure is not yet resolved. Thus, logging will continue to take place depending on cultural lands or who was the first to claim ownership of the forest land. However, the ITTA has managed to change the practices of logging of timber trade, providing the necessary rules and sustainable innovation ways that should be followed.

However, the NLBI is not a legally binding instrument and has not fully achieved anything yet. The instrument has no specific performance indicators which are provided for nations that take forest action plan or projects. There were no adequate resources that were put forward to achieve and support the implementation of NLBI programmes. This instrument is also relatively unknown with many developing countries lacking the necessary political will to implement its non-binding obligations and programmes, simply they have no duty. This has resulted in a weak instrument internationally with a number of countries lacking the specific resources to implement it.

In addition, environmental activists around the world are seeking a stand-alone binding instrument for forest protection. The NLBI is a poor consolation goal since it was never improved.⁷¹² The instrument is not desirable since it does not reflect on state responsibility on how to achieve SFM. Though this instrument argues and encourages States to put resources and funds to achieve SFM, it does not have itself a framework to gather funds for forest protection programmes and projects. This further deepens the problems of fragmentation and fatigue in the forest governance framework.⁷¹³

In addition, the European Union in 2013 in Geneva made its own Forest Instrument⁷¹⁴ that is still not binding at the 4th International Negotiating Committee. The instrument was made but was never formally adopted. This was an all-rounder instrument providing the necessary framework for forest governance, probably a best option to be looked after in the future in the EU and above all. It provided principles and objectives for forests in Europe to be sustainably

⁷¹¹ Ibid.

⁷¹² Davenport S D and Wood P, 'Finding the Way Forward for the International Arrangement on Forests: UNFF-5, -6 and -7', (2006) 15 (3), *Review of European, Comparative and International Environmental Law, (RECIEL)*, 316-326, page 324-5.

⁷¹³ Schneider W T, 'A non-legally binding instrument as an alternative to a forest convention', (4) (2006), *Work Report of the Institute for World Forestry*, 1-12, page 12.

⁷¹⁴ See note on 626.

managed. This is a welcome incentive since it narrowed down the problems facing this sector, and provides co-ordination amongst the fragmented instruments. This drafted instrument recognises forest resources, functions and health. It also co-operates with the CBD in trying to conserve forest biodiversity. It recognises the ecological and socio-economic functions of forests, and puts forward ways of monitoring and reporting on the status of forests and also SFM programmes.⁷¹⁵ This draft instrument encouraged European countries to protect their forests with national actions and programmes.

However, the drafted instrument never gained many followers and was never developed further. There was poor marketing and advertisement from the people who were trying to sell their ideas under this draft instrument. The main issue in the forest sector is that large natural forests are mainly in the Southern Hemisphere and it is those countries that need to be encouraged to ratify and agree on the forest instrument, and such has never been conceived.

Despite the number of international environmental law instruments that conserve biodiversity, the legal regime and governance framework of forest protection remains limited and non-existent because many of the instruments do not focus solely on forest protection. The sector remains much with soft laws which are non-binding and cannot be enforced. There is therefore a need to transpose these principles that have been filled in soft documents into a stand-alone binding instrument. It must be said that most of the foundation and groundwork has already been done by other instruments, though to an extent some sections are insufficient and inadequate. Such as the functional use of the SFM, ecosystem approach, market approaches for forest projects, and a binding obligation specifically for forest protection. However, forest protection remains fragmented in many different pieces or obligations of various instruments. There is a need to harmonise and unify the CBD so that it can focus on the issues of forest protection but this can only be done by a protocol or another instrument signed after it.⁷¹⁶

In short, these instruments fail to realise the 'nature and essence of forests', as ecosystems that provide various functions and products. Thus, these instruments above have failed to implement the ecosystem approach and SFM to protect forests, without a stand-alone

⁷¹⁵ Mushkat R, *International environmental law and Asian values: Legal norms and cultural influences*, UBC Press, Toronto, (2004), page 32.

⁷¹⁶ Oguamanam, Chidi, 'Biodiversity', (2012), in Alam, Bhuiyan, Chowdhury and Techera (eds), *Routledge Handbook of International Environmental Law*. Routledge, 2012, Available at SSRN: <https://ssrn.com/abstract=2296250>, page 224-6.

instrument they are insufficient and inadequate to protect forests. This will be discussed further in the next Chapters.

10. Recommendations

These international instruments, although they are useful and have set important obligations on forest protection, remain fragmented. They are important as they have set out global principles and concepts for environmental protection. The climate change regime seems to be growing to a greater extent and has been accepted as a global goal at the moment under the UNFCCC. Forests have been left to play a part in the fringes of this regime. This regime has been important in recognising the importance of environmental protection. It has also kept the topic of environmental protection at the apex of the international agenda and arena.

Furthermore, biodiversity conservation has also played an important role in recognising different principles under the CBD. The precautionary approach and the ecosystem approach have been embraced positively on the international arena, as well as the goal of a sustainable environment. However, the CBD has always seemed as if it was an instrument for everything but not specifically for anything. It is one of the first global instruments to be promulgated in the international arena and its successes have been substantial. In the matter of forests, this regime recognises important principles and concepts. Its focus is rather broad and not specifically for forest protection. This is not a weakness on its own account, but this instrument was never for forests specifically. It is for principles that are important to biodiversity conservation and management. Positively, some of these principles and concepts have been adopted into the forest regime.

The desertification regime is rather limited to its own field. It does recognise forest protection, but only as a role it seems to play in reducing desertification. Many of these instruments from the UNFCCC, CBD to the UNCCD recognise the importance of forests. They also set out important principles and concepts to manage forests. However, these instruments are not per se for forest protection and they do not elaborate on how forest protection can be achieved. They do not make forest protection a global goal or effort such as this thesis is seeking. They value the functions of forests, a part they play to enhance their regimes and obligations to their Parties.

Nonetheless, at the international level it has always seemed that the global efforts have been half-done and left to the efforts of the Parties. The focus in these instruments is not on forests,

however forests play an important part in environmental issues, and thus should be recognised for their functions. Forests are interdependent ecosystems, they perform functions that can help the climate change, conservation of biodiversity and desertification regime. The natural environment is the foundation of understanding and meeting our global goals. It seems forests are carbon sinks and habitats for biodiversity. The global goal should be fixed on maintaining and protecting these natural resources.

In the matter of legal science, another alternative has to be found. Although not the best of options, forest governance can play an important role if strengthened, global efforts are cooperated and coordinated. The recognition of forest governance must start to play an important part in forest protection. That is, states need to enact laws to enhance forest protection, public awareness and participation, access to adequate and quality information, access to justice, legal trade and forest certification. Importantly, human rights law will play a substantive part in forest protection. The recognition of property rights will help protect some of the forests that are threatened.

The tenure rights in any given country must be clarified on forest protection. Forests can be owned by a community, public (which is government) and private (which can be corporations and individual owners). If governments respect the rights of these communities, forests can be managed in a less chaotic fashion as has been witnessed. The respect of property rights in the world will play an important part in forest protection. At the centre of forest protection, forest communities and indigenous people should be recognised since traditionally they have played a critical part in sustainable forest management.

Furthermore, there is a need to form alliances with the private sector. Investors, consortiums, corporations and entrepreneurs can help achieve this goal. The Montreal Process⁷¹⁷ has set out Criteria and Indicators for the conservation and sustainable management of boreal and temperate forests. Its main goal was SFM and enhanced forest valuation on the international arena.

In 2015, the goals were amended to encompass common understanding and the components of SFM at state's individual level to recognise sustainability. The states have since agreed on seven criteria which are the maintenance of productive capacity of forest ecosystems;

⁷¹⁷ Montreal Process Working Group on Criteria and Indicators for the Conservation and Sustainable Management of Temperate and Boreal Forests, Geneva, Switzerland, 1994.

conservation of biological diversity; maintenance of forest ecosystem health and vitality; conservation and maintenance of soil and water resources; maintenance of forest contribution to global carbon cycles; maintenance and enhancement of long-term multiple socio-economic benefits to meet the needs of societies; and legal, institutional and economic framework for forest conservation and sustainable management; and fifty-four indicators. It is important to recognise that the criteria respect forests as an interdependent ecosystem that provides various functions, they advocate for forest protection. It also includes processes of consulting with forest managers and users, private industry, policy experts and the international scientific community. The strategic action plan is to enhance policy-makers with the criteria and indicators; strengthen the capacity to monitor, access and report on forest trends; enhance the progress of SFM; collaboration and cooperation; build capacity; enhance communication; and enhance the effectiveness and efficiency that relates to SFM.

Importantly, the SFM idea has been influential on future SFM suggestions with many forest agreements recognising this concept under the United Nations Conference on Environment and Development. This has also influenced the Helsinki Process which set out criteria and indicators for the EU temperate and boreal forests and the Tarapoto Process for the Amazonian countries. The Montreal Process has helped states to develop and improve on SFM, as well as sustainable present and future needs in terms of socio-economical and environmental benefits.

Furthermore, the New York Declaration⁷¹⁸ on forests has played an important part in setting out principles to halt global deforestation. It is a voluntary and non-binding international declaration that has attracted over 200 endorsers. This is an important initiative since it takes the global economic governance and tries to unify it with deforestation and forest degradation trends. The Declaration tries to counter-balance neo-liberal governance by deforestation incentives to reduce deforestation and forest degradation. Many national governments, corporations, sub-national governments, NGOs, and groups representing indigenous groups have endorsed the declaration. These endorsers are committed to meeting the ten goals that have been set out under the declaration. The declaration has roots with the SDGs and Paris Agreement. There are complimentary efforts set out in the Bonn Challenge agreed in 2011, to restore degraded land by 2020 and with the Aichi Targets which focused on reducing loss of natural habitats. The declaration has set out to end deforestation by 2030, supporting the private

⁷¹⁸ The New York Declaration on Forests, endorsed United Nations Climate Summit in September 2014.

sector to eliminate deforestation from their supply chains of agri-commodities, and providing financial support for emission reduction related to deforestation and forest degradation.

These soft laws are important as alternatives that can enhance forest governance globally. It is important to recognise that forest protection will need multiple efforts from several key players and sectors. The New York Declaration is of key importance in that it recognises the role of the private sector in reducing deforestation. Many companies use paper and containers made from wood, furniture and other items. If companies play a part in forest certification under the FSC and manage to sell to people wood and timber or products thereof, sustainable forest management can be achieved. The private sector will also play an important part in shaping public awareness and participation. This is usually through marketing and advertising of materials and items from sustainably managed forests. In addition, these corporations have a strong financial power and can play important roles in creating economic incentives for forest managers and communities who actually are involved in forest protection. In the same vein, these corporations are the ones involved in illegal logging and corruption, this incorporating them to form a global supply chain will achieve more to SFM.

The Bonn Alliance was launched at the COP23 climate change event as a build up to the Vancouver Declaration⁷¹⁹ to support the development of scientific methodologies which support forest certification and climate benefits. It brings together regional countries, ecosystems and economies to collaborate on a common goal and challenges to enhance forest restoration, management and protection. It is a platform that has been established to enhance political will and ambition to restore forest degraded lands. It is also a vehicle for food and water security and rural development. These goals are important to the global South in order to help them contribute to the global goals of combating climate change, conservation of biodiversity, and reducing land degradation. This will help to build global political support, providing policy and technical support to all countries.

These goals have also been supported by NGOs who are contributing internationally in environmental protection such as the IUCN, UNEP and FAO. They also assist in the implementation and provision of models for cooperation, coordination and collaboration. There are also regional efforts that have gained momentum such as the Africa, Eastern Europe and Latin America, and international initiatives such as the FAO FLR Mechanism and CBD Forest

⁷¹⁹ From the report of Habitat: United Nations Conference on Human Settlements, Vancouver, Canada, 31 May to 11 June 1976 HABITAT: United Nations Conference on Human Settlements.

Ecosystem Restoration Initiative. These efforts also contribute and support the Bonn Challenge.

These are some of the alternatives that can be used to shape forest regime and protection since there is no stand-alone instrument. The New York Declaration is important as it plays a part in creating a new path of including the private sector into the forest protection initiatives.⁷²⁰ States must look at these cooperation initiatives with the private sector to consolidate forest protection from a consumer-corporation standpoint. That is, making efforts to enable corporations to reduce timber and wood products from their supply chain. These efforts can be through the use of forest certification which makes it easier for corporations in any state to buy and use sustainably harvested and managed timber and wood products.

Furthermore, effective and efficient policies that make the communication and media open for advertising will be important for corporations to advertise their goods that have been harvested from forests which are being sustainably managed. For the private sector to make an effective impact, states need to cooperate and coordinate with them to enhance efforts. There is also a need to build capacities and synergies between socio-ecological and economic issues. States must help each other to fulfil the SDGs such as education, sanitation, poverty and access to information and justice. These goals can help environmental efforts through synergies under the umbrella of economic efforts.

Many of these corporations have interests in timber and wood products and therefore efforts to make the system transparent will help reduce illegal logging and the trading of uncertified timber and wood products. In addition, by making the private sector play a major role in forest protection initiatives will also help in marketing sustainable forest programmes. Many corporations, indigenous people, NGOs, states and subnational governments⁷²¹ are showing an increased interest in forest protection – efforts by FSC to capture have proved to be an important milestone in capturing efforts to sell and advertise forest certification, sustainable wood and timber products.

11. Analysis

⁷²⁰ See website <https://www.undp.org/content/undp/en/home/news-centre/news/2017/new-york-declaration-on-forests-global-platform-launched.html>. Accessed on 19 January 2021.

⁷²¹ Ibid.

As explained above, the regime of climate change has brought many positives for forest protection. It does have its own weaknesses since it was never meant to deal with the specific issue of forest protection under the UNFCCC. The conservation of biodiversity and desertification also brought important structures, institutions, incentives, conservation programmes and ways of raising the much needed resources to fight deforestation and forest degradation under the CBD. The CITES and ITTA have also brought important structures in international, regional and national co-operation and co-ordination in trying to reduce the trading of threatened tree species. These efforts by these instruments have all been important and significant in the forest sector.

However, these instruments have become highly divisive, mounting to fragmentation and treaty fatigue. The instruments have been produced without any clear focus on the issue of forest protection; again it is understandable since they are not specifically for the issue at hand. The field of forest protection has become entangled with institutions and working bodies, which all are failing to protect forests. The efforts that had been put in the early 1990s have since settled down to nothing. Furthermore, due to the lack of specificity of the issues, that is an emergency issue of consistency to try and draw back the main issues of forest protection.

As above, the lessons learnt from fragmentation and the historical context of the forest sector in the international arena can provide new options for forest protection. The recent efforts are appreciative of the environmental issues currently faced. The NLBI, the European Forest Instrument and Paris Agreement show that policy-makers are opening up to new options. This gives great hope that a stand-alone binding forest instrument could well be agreed to in the future. The new instrument will co-ordinate, integrate and co-operate with the environmental instruments already produced including their institutions.

Nevertheless, due to this stalled global agreement, there is a need to look at other measures for forest protection. In many States and regions there is a need for co-ordination and co-operation to integrate efforts for forest protection. The immediate alternative is to fund the UNFF with resources so that it can educate (communities, organisations and farmers), build capacity, assist, advocate, and provide solutions on the need for forest protection. The UNFF can also advocate for the NLBI to be a recognised instrument that can be developed further in the future.

Importantly, a long-term solution is to develop a specific forest binding instrument. This approach will integrate the climate change mitigation and adaptation regime, spatial planning, biodiversity conservation and reducing desertification. There is a need to find ways to

incorporate strategic integrated land-use approaches that looks at holistic ways to reduce deforestation and forest degradation. Furthermore, the use of zoning and land regulations can also be included to reduce forest loss.⁷²² The different ways in which forests are being lost through land-use changes must be regulated, this integration approach must aim to achieve SFM to satisfy the goals for forest protection.

As above, forests are multi-functional and there is a need to protect them as they continue to be lost and other species that live in forests cannot live without these forest ecosystems. The mission to recognise forest conservation on the climate change agenda has been fruitful and has created institutions that are helpful. However, the time of developing forest principles on the climate agenda has since finished. The time has come for sustainable forest protection, the use of smart incentives in the green sector. There is a need for a holistic approach that tears down sectorial boundaries which continue to blind us to find clearer solutions to forest protection.

Apart from the conclusion, international co-ordination efforts have been poor. A scholarly opinion that in view of this situation, policy-makers should embrace this complexity; re-design mechanisms, principles or concepts; and allow additions that might fill the gaps of the already pre-existing mix of these international instruments and ‘soft laws’.⁷²³ The scholar goes further in stating that this might solve the problems of fragmentation, treaty fatigue, integration, co-operation and co-ordination.⁷²⁴ It is already time that scholarly good suggestions like this one were followed by whatever institutions, this is an excellent suggestion from Howlett and it would require the efforts of the UNFF.

Forest policy-makers can achieve effective and efficient gains by integrating the already existing policies, filling gaps and solving contradictions. This should allow for modification, policy components or use of different regimes, coherence and consistency in new forest governance strategies. The forest sector should be integrated with the pre-existing policy mix which includes objectives, mechanisms, programmes, principles and goals to provide and

⁷²² Rechtschaffen C and Gauna E, *Environmental justice, law, policy and regulation*, Carolina Academic Press, USA, (2002), page 27.

⁷²³ Howlett M, ‘Overcoming the challenges to integration: Embracing complexity in forest policy design through multi-level governance’, in Rayner J, Buck A and Katila P (eds), *Embracing complexity: Meeting the challenges of international forest governance, A global assessment report*, Prepared by the Global Forest Expert Panel on the International Forest Regime IUFRO World Series, (2010) 28, Vienna 1-172, pages 93.

⁷²⁴ Ibid.

produce a new (ideally current) mix. This could help avoid fatigue and fragmentation; also counter over-productiveness from the already existing international instruments; and thus enhance sustainability, effectiveness, compliance and determinancy in the forest protection regime.

Furthermore, Spain, South Africa and Australia have introduced plans to protect more land through the use of protected areas and effective use of regulations to improve land-use management and spatial planning as will be seen in the next chapters. These national collective efforts are effective if integrated with community support and private sector or NGOs.⁷²⁵ To improve a global collective effort, the UNFF could select regional forest champions, individuals who are highly motivated and have vast knowledge and experience in forest protection. These forest champions will advocate for forest protection in regional blocks and offer contact points for use of traditional knowledge, integrating local communities and public awareness. The UNFF efforts to also strengthen the rule of law in countries with vast patches of forest area can also reduce deforestation. There is a need for help and support of all these successful efforts which these countries have made and a commitment to collective global efforts to protect forests.

Moreover, efforts such as in Vietnam and India have been focused on increasing the number of forest rangers and implementing effective enforcement and compliance measures. These countries have also negotiated further with the European Union for a Voluntary Partnership Agreement (VPA). This has been aimed at market instruments to reduce illegal logging, promote timber trading from forest certificate holders, and the improvement of forest governance.

In addition, research programmes can help with innovative ideas and bridging environmental policies. This is likely to integrate national development plans and the initiative of research programmes that can help the purpose of SFM. However, research on forest protection has been mainly on a comparative analysis basis; global research efforts with effective co-ordination and integrative planning could help improve this regime. Furthermore, there is a need for co-operation and initiatives amongst international organisations by assessing outputs and results of research programmes, providing innovative solutions and information focusing on

⁷²⁵ Humphreys D, 'Redefining the Issues: NGO Influence on International Forest Negotiations', Volume 4, Issue 2, May 2004, *Global Environmental Politics*, 51-74, page 51-5.

putting research into practice. The participation of UNFF and regional blocks in extraction, research, management and decision-making within the relevant user groups can be an important contribution to the success of forest protection.

Research groups and institutions need to support and foster the respect and recognition of traditional knowledge from local communities, this will also recognise their human and tenure rights.⁷²⁶ Since successful efforts have been on national levels, including local communities in forest protection programmes will support effective enforcement and compliance efforts.⁷²⁷ This will make it easy to foster public awareness and poverty alleviation programmes. In addition, countries should be offered more help and support in protecting forests through the work of the UNFF. These efforts of collaboration, support, exchange in knowledge and technology should be facilitated through the UNFF.⁷²⁸ More support might also gain the compliance of developing countries who have lost confidence and could facilitate their participation in international environmental institutions and policies. In short, the UNFF should be strengthened as it has a major role to play in forest protection.

In addition, there is a need to add value to the NLBI so that it addresses forest issues that have not been covered by the CBD, the UNCCD, the UNFCCC, the CITES and the Kyoto Protocol. The concept of SFM should be developed further by definition and setting out clear indicators with clarity. There is also a need to elevate by centering and aligning it more on the conversation of forest protection so that it is integrated with other environmental themes such as climate change mitigation and adaptation, biodiversity conservation and desertification. The UNFF should focus its main efforts and resources in co-ordination and cross-sectoral efforts of the NLBI with other international instruments. The agriculture, transport and mining sectors, and also urban development have been identified as major sectors which cause deforestation and forest degradation. This would help in adapting these sectors that cause deforestation and reducing their effects on deforestation and rather promote forest regeneration. This could help in monitoring and evaluating these sectors and anticipate how they cause the rate of deforestation to increase.

⁷²⁶ Arnold M E J, 'Forests and People: 25 years of community forestry', *Food and Agriculture Organization of the United Nations Rome*, (2001), page 7.

⁷²⁷ Porter-Bolland L *et al*, 'Community managed forests and forest protected areas: An assessment of their conservation effectiveness across the tropics', (2012) 268, *Forest Ecology and Management*, 6–17, page 7.

⁷²⁸ Wang F *et al*, 'Combating desertification in China: Past, present and future', (2013) 31, *Land Use Policy*, 311-313, page 313.

A scholarly opinion states that the already recognised command and control regulations should also be integrated effectively into forest governance, this starts with the work of the UNFF as this would strengthen the forest governance regime.⁷²⁹ This should also allow for flexibility, integration and public participation in forest protection programmes. There is also a need for higher level recognition of land-use management and spatial planning as these regulations have been successful at national levels. Spain, South Africa and Australia have been using protected areas in their forest protection plans and this has worked effectively and successfully. These efforts are at state level. There is thus a need for more recognition, clarity and also inclusion of these mechanisms in negotiations and conferences. Community management of forest protected areas have been successful in these States. There has been sharing of efforts from local governments, NGOs, private corporations and local communities. The use of zoning regulations in land-use management has shown that protected areas can be used effectively to enforce environmental laws and reduce deforestation or forest degradation.

Currently, there is a need to continue using the instruments that relate and touch on forest protection. The UNFF should be strengthened at regional levels to support States in the implementation of forest protection principles and concepts. There is also a need to initiate conferences and programmes that will uplift the political will of developing countries (primarily in the Southern Hemisphere) to protect their forests and enter forest protection negotiations. Given the success of some States in promulgating legislation, there is a need to foster collective and collaborative efforts to reduce deforestation and forest degradation in other States and regions.

Furthermore, for forest governance to be effective, there is a need to engage with all players and sectors. Effective forest protection requires compliance and the co-operation of all parties as each group has a role to perform and contribution to make – this includes NGOs, local communities, politicians and business leaders. Each of these groups has a role to play. A binding commitment ideally serves to develop principles, but can be burdened by Parties that are looking only for their self interests – thus more public awareness efforts are needed to

⁷²⁹ Kaeser A, Bernasconi J and Zimmerman W, 'Governance approaches in Swiss forest biodiversity policy: Do they really work?', (2013) 36, *Forest Policy and Economics*, 6-13, page 6.

counter this with a majority global support through the work of COPs and forest protection advocates within the arms of the UN.

Forest principles and concepts already exist at the international level, however it is a collection of an unco-ordinated instruments and principles with gaps needing to be filled. Since 1992 the biggest problem in forest protection has been the lack of the rule of law in conflict regions with extensive forest areas (Democratic Republic of Congo, Brazil and Colombia). The Congo has been affected by tribal conflicts with Colombia stressed with drug wars and land ownership issues. However, Brazil has been affected by socio-economic issues, how to balance the needs of the economy whilst recognising forest protection. For example how to balance the timber industry, miners, farmers and environmental protection all seeking claims in the Brazilian Amazon. There has been also a lack of identity and recognition in the environmental laws that have been promulgated on a global scale to protect forests caused by total disregard and a lack of implementation of national forest laws. This does not mean or negate the further need of law, but it can mean there is a need for better application and implementation of existing national and international instruments as these three countries have done.

The effectiveness of law depends on the content of the law and other external factors (economic, political and social factors), weak institutions and disregard of the importance of rule of law have added further harm to struggling systems. A binding instrument might ideally bring a strong framework structure, reinforcing and better commitments and compliance mechanisms to the forest protection regime, however effective use of 'soft law' can be equally as productive and help forest protection if used and applied effectively. Moreover, effective implementation of environmental law requires extensive political, economic and social support. However, international environmental law is natured by the content (which is both procedural and substantive development of legislation and policy) and a collective effort. Allocation of funds and well trained experienced staff will also play a part in reducing deforestation and forest degradation.

In addition, forest protection is an unpopular topic at the international level. This is because although forests have a global significance, they also have a fundamental local significance that transcends political and social cultures, a reason why developing countries seem to reject the notion of common heritage when it comes to forest protection. Resolving international, regional and national interests at an international level seems to be difficult. However, evidence

suggests that developing countries are making efforts to reduce deforestation and achieve SFM through community programmes and projects. Forest protection in local community areas will also require better reporting and verification, enhanced implementation of sustainable forest management criteria, and indicators as part of the way forward.

Moreover, there is also lack of clarity around sustainable forest management and the ecosystem approach from the CBD. The concepts have been co-opted on the international arena in less thoughtful ways. This has been done without proper consideration of their definitions, meanings and results. The sustainable forest management and the ecosystem approaches have been diffused on national levels, degenerated from the UN to national levels and in Europe from the EU institutions, this has meant that these interwoven concepts have unfolded in parallel processes of development and progression. Although they differ in scope, the two approaches have similar principles for forest protection, but are now rendered ineffective, unproductive and inefficient. However, sustainable forest management is a voluntarily international concept, whereas the former has become a binding legal obligation. Ideally, a binding forest instrument can make sustainable forest management a binding obligation as it is a vital concept for forest protection. This could make the ecosystem approach more recognisable in the forest protection regime, these efforts should now be left for more improvements by the UNFF.

International law is lax in its protection of the environment and more specifically forests, and this should not come as no surprise. Under the guise of respecting sovereignty, international bodies are wary to interfere with other governments. Although organisations may all be in agreement that forests need urgent protection and on the devastating effects of deforestation on the world's population, that agreement won't necessarily translate to the creation of hard rules to punish those who allow for and perpetuate the abuse and misuse of forests.

It is important to protect forests at a global level because the effects of deforestation are not boundary specific, the environment doesn't subscribe to territorial boundaries, only human beings are "bound" by borders. Treaties are a weak attempt at global protection of forests because of their reliance on States not only to being signatories to them, but also the requirement that States domesticate the laws before they can be in force. The USA is the most recent example of how the opt-in mechanism of treaties can sometimes fail forests and humans, President Trump not only opted-out of the Paris Agreement but, because of him, protection of

the Amazon is even more of a challenge because of policies that value capital over humans - even in neighbouring countries. Ecocide is a crime against humanity and needs to be treated as such at a global level, and the prosecutorial body need not be limited by a country being a signatory because the harm is not localised.

Due to the fact that international bodies are a product of powerful governments and organisations with money, it was and still is difficult to fully protect the environment in any form of document, this can be seen in the influence which oil producing countries had in drafting the Roman Statute. Conversations about ecocide were common-place in the international sphere because of the catastrophic events of World War II and other practices that harmed the environment thus threatening humanity. However negotiating a way to criminalise harm on the environment was challenging, considering how mining itself was harmful but a “necessary” resource for human development.

The crime of ecocide needs its own strong, fearless and independent body, which insists on prosecution to start on a local level before being moved to the international body, this is so as to grant access to the citizens immediately impacted by the harm. This needs to be a set of rules that are uniform with accompanying punishment, again this is because we seek to protect those who cannot speak for themselves.

Forests and inhabitants need us to fight for their rights in a rigorous manner than when we fight for human rights because of how distinctly important they are for human survival and how without them there are no humans to speak of. The motivation is for a higher level of law making than that of fundamental human rights. This is a huge problem that will be seen in the thesis and explained further as this is a bigger issue which needs more substance. In allowing deforestation for the benefit of human greed, we take away vital resources from humans who live in and rely on the resources that come from these forests for their survival. Thus by not protecting forests, we are simultaneously condemning ourselves and not protecting the rights to a safe environment, health, protection from poverty, home, culture and much more. An example of this is that due to the need to have more land for pine trees, in August 2019 the dire effects of deforestation in the Philippines had a negative impact on neighbouring countries through air pollution from the burning trees and decreased number of “lungs” to absorb the smoke – to the extent that people could not even go outside or see clearly.

Chapter 6: Obstacles restricting the international binding instrument

1. Introduction

The forest protection issue has been on the agendas of many COPs and other environmental conferences internationally. However, there is no binding instrument on the table which means there are serious issues that need to be resolved first before an agreement can be met. There are many obstacles that hinder the good governance of forests globally. Forest protection has faced issues mainly the effects of poverty, corruption, historical burdens, sovereignty, and donor and treaty fatigue. Furthermore, lack of trained staff, governance capabilities, inadequate natural solutions on forest protection, inhospitable policies which constrain institutional provisions, and governance arrangements that encourage inefficient forest protection are undoubtedly the most prominent issues and obstacles in developing countries.⁷³⁰

However, global assistance has also been stifled by the need to bind developing countries to constraining obligations that seek to make any use of forest lands illegal. Forest services and products are seen as informal sources of income and providing short-term revenue. This issue has been pertinent mainly due to the short-sightedness of governments for forest valuations. In China and the United States of America for example (as provided in Chapter 2), the rubber, wood and timber industry is worth billions in revenue. The reason has been always that the building of infrastructure is a long-term proficient plan that will produce sustained long-term incomes; this has worked against forest valuation and protection. These views on forests, especially on valuation, has been to the detriment of forest protection. These obstacles have inhibited the resilient efforts of many academics and some countries to develop and implement a specific binding instrument for forest protection.

2. Poverty and National Economic Goals

Precisely, poverty allows for the misuse and overexploitation of people and natural forests. Poverty strains conservation programmes for many developing countries' governments.⁷³¹

⁷³⁰ Agrawal A *et al*, 'Economic Contributions of Forests', Background Paper 1, United Nations Forum on Forests, 10th Session 8-19 April 2013, Istanbul, Turkey 1-132, page 107.

⁷³¹ Churchill A S and Smyth R, 'Ethnic Diversity and Poverty', (2017) 95, *World Development*, 285–302, page 285.

Many communities require social services and welfare, this leads to governments abandoning many conservation programmes.

Communities affected by poverty can also destroy forests for agricultural lands using unsustainable methods of crop production.⁷³² This is done by informal subsistence farmers who use unsustainable methods to destroy forests such as starting forest fires for fertilizer from the ash, dried leaves and charcoal.⁷³³ They also harvest forest products using unsustainable means which eventually leads to forest degradation.⁷³⁴ This obstacle is mainly faced in the developing countries where wood is seen as a cheap building (also energy⁷³⁵) material and forests are deforested for crop lands and rearing of farm animals. In addition, the use of agricultural lands in the Southern Hemisphere is important to certain tribes. This has resulted in national parks and forest lands being invaded by communities of indigenous inhabitants who claimed the land and started the process of deforestation for the cultivation of crops and rearing of animals.⁷³⁶ These indigenous communities only have their lands to plant crops and rear domestic animals.⁷³⁷

Importantly, poverty can be seen to affect forest protection in three ways. Firstly, the local indigenous people in developing countries exploit forest products and services to earn income or to supplement resources in times of droughts. This is done by harvesting fruits, bush-meat hunting and making furniture in the form of baskets or chairs for selling in nearby cities and towns, thus causing confusion over forest ownership and protection.⁷³⁸ Secondly, poverty in governments causes an increase in corruption and selling of forest lands to private companies

⁷³² Tanner M A and Johnston L A, 'The Impact of Rural Electric Access on Deforestation Rates', (2017) 94, *World Development*, 174–185, page 175.

⁷³³ Byerleea D, Stevenson J and Villoria N, 'Does intensification slow crop land expansion or encourage deforestation?', (2014) 3, *Global Food Security*, 92–98, page 92. See also Zulu C L and Richardson B R, 'Charcoal, livelihoods, and poverty reduction: Evidence from sub-Saharan Africa', (2013) 17, *Energy for Sustainable Development*, 127–137.

⁷³⁴ Pieter C J and Moonen J C P *et al*, 'Actor-based identification of deforestation drivers paves the road to effective REDD+ in DR Congo', (2016) 58, *Land Use Policy*, 123–132, page 123.

⁷³⁵ González-Eguino M, 'Energy poverty: An overview', (2015) 47, *Renewable and Sustainable Energy Reviews*, 377–385, page 379.

⁷³⁶ Baye G T, 'Poverty, peasantry and agriculture in Ethiopia', (2017) 15, *Annals of Agrarian Science*, 420-430, page 420.

⁷³⁷ Miranda J J *et al*, 'Effects of Protected Areas on Forest Cover Change and Local Communities: Evidence from the Peruvian Amazon?', (2016) 78, *World Development*, 288–307, page 290.

⁷³⁸ Samndong A R *et al*, 'Institutional analysis of causes of deforestation in REDD+ pilot sites in the Equateur province: Implication for REDD+ in the Democratic Republic of Congo', (2018) 76, *Land Use Policy*, 664–674, page 667.

which rapidly degrade the forest lands.⁷³⁹ This has been illustrated in reports of the Brazil Amazon, the Democratic Republic of Congo and the Central African Republic where substantial tracts of forest lands have been sold, and extensive degradation and deforestation has already occurred.⁷⁴⁰

In the same vein, governments use the taxes or profits to supplement their economies and, thus again the valuation of natural forests is hugely misplaced by this narrative.⁷⁴¹ As these governments gain income and revenue from taxes, they lose the political will to enact national legislation or implement developmental plans for forest protection.⁷⁴² This has resulted in many such developing countries acting negatively in international conferences or refusing to compromise on their National Development Plans and Strategies. This is equally true in developed countries. Developing countries which have tried to effect forest protection are affected by understaffing and lack of experience or expertise in forest protection programmes and projects. The challenges are exacerbated by the lack of scientific technology and finance to monitor forest areas. In addition, if forest rangers are not paid sufficiently, this can result in their illegal selling of forest lands.

The development and use of drones and scientific data especially Geographic Information System Mapping Technology (GIS) is important for the protection of forest lands. Moreover, there is a serious need for integrating methods and the use of indigenous knowledge to reduce deforestation.⁷⁴³ These can start from a local leader of a local indigenous people to police officials to the broader spectrum of government officials.

Thirdly, forest lands in Africa are being used by liberation political parties for political reasons and vote gains.⁷⁴⁴ The South African, Central African Republican, Namibian, Democratic

⁷³⁹ Tegegne T Y *et al*, 'Evolution of drivers of deforestation and forest degradation in the Congo Basin forests: Exploring possible policy options to address forest loss', (2016) 51, *Land Use Policy*, 312–324, page 313. See also Hassan A S, Zaman K and Gul S, 'The Relationship between Growth Inequality-Poverty Triangle and Environmental Degradation: Unveiling the Reality', (2015) 10, *Arab Economics and Business Journal*, pages 57–71.

⁷⁴⁰ Kidd M, 'Forest Issues in Africa', in Couzens E and Kolari T E (eds), *International Environmental Law-Making and Diplomacy Review*, (2005), Joensuu, University of Joensuu and UNEP, 189-212, page 209.

⁷⁴¹ Cuaresma C J and Heger M, 'Deforestation and economic development: Evidence from national borders', Volume 84, May 2019, *Land Use Policy*, 347-353, pages 347-9.

⁷⁴² Royer B M, 'Halting neo-tropical deforestation: Do the forest principles have what it takes?', (1996) 6, *Duke Environmental Law and Policy Forum*, 105- 156, page 121.

⁷⁴³ Newton P and Benzeev R, 'The role of zero-deforestation commitments in protecting and enhancing rural livelihoods', (2018) 32, *Current Opinion in Environmental Sustainability*, 126–133, page 126.

⁷⁴⁴ Mutimukuru T, Nyirenda R and Matose F, 'Learning amongst ourselves: Adaptive forest management through social learning in Zimbabwe', in Colfer C J P (ed), *The equitable forest: Diversity, community and resource management*, (2005), Washington, DC, Resources for the Future and CIFOR, 186-206, page 186.

Republic of Congo, Cameroonian and Zimbabwean liberation parties had lost much of its votes to new political parties in the late 1990s, but by early 2000s they had devised plans to redistribute the land amongst the black voting populous (vote buying) to gain more votes. This has seen such countries' landscapes change dramatically; there has been severe loss of wildlife and forest lands in the post-colonial era of Southern Hemisphere countries.⁷⁴⁵ Importantly, redistribution of land in Africa for agriculture and historical reparations is a positive step, however the programmes are often ill-planned and the land usually ends in the wrong hands of people who are not even interested in agriculture. The result is a loss of forest lands or the destruction of forest lands, which can be avoided by proper land use spatial mapping and planning, as will be presented in the following Chapters.

Furthermore, this can result in land conflicts in many local indigenous communities. Such armed conflicts can result in wrecked communities and displaces who seek refuge in forests or other neighboring countries.⁷⁴⁶ This malignant poverty scenario causes the local indigenous communities to fight for every natural resource available. Consequently, the issue of poverty causes extensive problems in government institutions.⁷⁴⁷ Many governments in Africa feel they should not remove these tribes in forests, because they will have to provide income generating options which will strain such developing economies. In addition, it has been the use of political games that has most severely affected forest protection. This has been the misuse of power and the issue of seeking gains in stagnant economies.⁷⁴⁸

Nevertheless, efforts that seek to alleviate poverty should be elevated and other actions that seek to educate many of these tribes into using the economy sustainably must be reinforced. The Global Environment Facility (GEF)⁷⁴⁹ also seeks to fund programmes that reduce deforestation as a climate change mitigation solution. In addition, donor funds can be distributed to these tribes to buy certain tools they need for cultivation and fertilizers, instead

⁷⁴⁵ Hlambela S and Kozanayi W, 'Decentralized natural resources management in the Chiredzi district of Zimbabwe: Voices from the ground', in Colfer C J P and Capistrano D (eds), *The politics of decentralization: Forests, power and people*, (2005), London, UK, Earthscan, 255-268, page 255.

⁷⁴⁶ Eitman J D, 'Maintaining sovereignty and the tropical rainforests: The promise of debt-for-nature swaps', 24 (2001), *Environ Environmental Law and Policy Journal*, 30-47, page 36. See also Sovacool K B, 'The political economy of energy poverty: A review of key challenges', (2012) 16, *Energy for Sustainable Development*, 272-282, page 272-3.

⁷⁴⁷ Amin A *et al*, 'Neighborhood effects in the Brazilian Amazônia: Protected areas and deforestation', (2019) 93, *Journal of Environmental Economics and Management*, 272-288, page 273.

⁷⁴⁸ Navot D, 'Real Politics and the Concept of Political Corruption', (2015) 14 (4), *Political Studies Review*, 544-554, page 544. See also Khana R S and Khan R S, 'Assessing poverty-deforestation links: Evidence from Swat, Pakistan', (2009) 68, *Ecological Economics*, 2607-2618, page 2607.

⁷⁴⁹ See website <https://www.thegef.org/>. Accessed on the 17 December 2018.

of burning and cutting down natural forests. Importantly, a wage labour limit can be employed to reduce corruption from forest rangers, and bank credits for the tribes to buy seeds and other inputs can provide the best outcome for forest protection in developing countries.⁷⁵⁰

The issue of tribes fighting can be solved by adapting land tenure security and ownership strategies that can reduce conflicts and the establishment of traditional courts to resolve land security and ownership issues. The increase of public participation and community involvement in conservation strategies can also provide positive answers and alternatives in the protection of forests, and the engagement of the private sector to help the rural small-holder farmers can also be a solution to reducing deforestation.⁷⁵¹ For the better part, education is vital for the protection of forests and the provision of funds and ownership will safeguard more forest lands.⁷⁵² It is critically important to engage with rural communities and define and develop understanding of what constitutes illegal activities in terms of forest protection.⁷⁵³ For example, many inhabitants would never put the collection of wood or cutting down a tree as an illegal activity, as these are seen as customary practices even in protected areas.

3. Corruption

Without a binding instrument, forest governance remains weak and is prone to corruption. Corruption affects forest protection in many countries. Corruption is the abuse of public power for private and personal gain.⁷⁵⁴ In forest protection, corruption is the illegal acquisition of forest products and resources. It hampers the effectiveness of forest protection policies, increases illegal logging, forest licence manipulations and decreases forest product revenues.

Corruption leads to the overexploitation and deforestation of natural forests. It is an extensive problem in many governmental institutions around the world. The gap left without a forest

⁷⁵⁰ Fisher B and Christopher T, 'Poverty and biodiversity: Measuring the overlap of human poverty and the biodiversity hotspots', (2007) 63, *Ecological Economics*, 93 – 101, page 93.

⁷⁵¹ Ojha R H *et al*, 'Delocalizing Communities: Changing Forms of Community Engagement in Natural Resources Governance', (2016) 87, *World Development*, 274–290, page 274.

⁷⁵² Ma B *et al*, 'Conservation, ecotourism, poverty, and income inequality – A case study of nature reserves in Qinling, China', (2019) 115, *World Development*, 236–244, page 242.

⁷⁵³ Balsdon M E, 'Poverty and the management of natural resources: A model of shifting cultivation', (2007) 18, *Structural Change and Economic Dynamics*, 333–347, page 334.

⁷⁵⁴ Corruption is also an act or effect of giving or receiving a thing of value, so that the other person do or omit to do something, in violation of a formal or implicit rule about what that person ought to do or omit to do, to the benefit of the person who gives the thing of value or a third party. See website on <https://www.oxfordlearnersdictionaries.com/definition/english/corruption?q=corruption>. Accessed 06 February 2020.

instrument has meant that corrupt politicians have gained immensely from illegal trading and logging of natural forests. This has meant that they are now refusing to recognise any form of international obligation that supports forest protection. It is now prevalent at many ministerial levels of governments, with ministers receiving bribes for the allocation of timber concession licenses. The local forestry officials also accept payments to release arrested illegal loggers or turn a blind eye to timber harvesting in protected forests.

Corruption also allows private timber companies to increase their permitted logging boundaries. Furthermore, if the legal system and institutions are so weak, the forestry companies can secure illicit profits above their legal taxed earnings from fraudulent practices. This can be as a result of under reporting of legally harvested timber, transfer pricing and capturing of rental institutions which would usually fall under the State.⁷⁵⁵

Corruption has become an institutionalized system of society with interactions which is forged from State authority.⁷⁵⁶ It is moulded around the local social power systems of social capital formations. Corruption puts selective pressures on natural forests, while by-passing others.⁷⁵⁷ Today, corruption has become a system of normalised rules that are transformed from legal doctrines and authority, cemented around existing inequalities, and also patterned through co-operation and trust.⁷⁵⁸ This demoralises government, public perception and further weakens policy formulation and implementation.⁷⁵⁹ After all, corruption corrodes legitimacy and community expectations.⁷⁶⁰ Corruption is now intertwined with illegal trade and logging, and

⁷⁵⁵ Legal Timber: Verification and Governance in the Forest Sector, <https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/3472.pdf>. See website on 16 January 2021.

⁷⁵⁶ Haas F and Ottmann M, 'Profits from Peace: The Political Economy of Power-Sharing and Corruption', 2017 99, *World Development*, 60–74, page 60-1.

⁷⁵⁷ Meehan F and Tacconi L, 'A framework to assess the impacts of corruption on forests and prioritize responses', (2017) 60, *Land Use Policy*, 113–122, page 113-4.

⁷⁵⁸ Robbins P, 'The rotten institution: Corruption in natural resource management', (2000) 19, *Political Geography*, 423–443, page 433.

⁷⁵⁹ Muñoz F S and Cueto C L, 'What has happened in Spain? The real estate bubble, corruption and housing development: A view from the local level', (2017) 85, *Geoforum*, 206–213, page 206-7.

⁷⁶⁰ Graycar A, 'Corruption: Classification and analysis', (2015) 34, *Policy and Society*, 87–96, page 87.

is the main cause of such activities.⁷⁶¹ Furthermore, bribery in developing countries has undermined international and domestic government policies.⁷⁶²

Political corruption is when officials abuse their public office for financial or private gain.⁷⁶³ This usually happens when government officials are poorly paid which increases the chances of bribery, particularly if the office bearer controls valuable natural resources such as timber. Political corruption can be caused and influenced by poor checks and balances in different government agencies, weak institutions, nepotism and also political patronage.⁷⁶⁴ As it is likely that developing countries rely heavily on the exploitation of natural resources, corruption usually has corrosive effects on developing countries.⁷⁶⁵ In the same vein, corruption is a huge threat to sustainable development.⁷⁶⁶ It reduces the effectiveness of forest protection programmes.⁷⁶⁷ Since forests are confined in developing countries, they are highly vulnerable.⁷⁶⁸ Political instability in many of these countries means that they are vulnerable to corruption and thus in the forestry sector to illegal logging.⁷⁶⁹

There are mainly two forms of corruption, namely collusive and non-collusive corruption. Non-collusive corruption is usually when an official demands to be paid a bribe for a legal activity behind the procurement or administrative rules, for example the form of obtaining a legal permit for logging. In collusive corruption, the bribe is usually being coerced by a government official, and the bribe's cost is in addition to normal official costs which are levied by the government (these can be taxes, export fees or royalties). Consequently, it is non-collusive

⁷⁶¹ Amacher G S, 'Corruption: A challenge for economists interested in forest policy design', (2006) 12, *Journal of Forest Economics*, 85-89, page 86.

⁷⁶² See also Silvestre S B *et al*, 'Challenges for sustainable supply chain management: When stakeholder collaboration becomes conducive to corruption', (2018) 194, *Journal of Cleaner Production*, 766-776, page 766-7.

⁷⁶³ Beekman G, Bulte E and Nillesen E, 'Corruption, investments and contributions to public goods: Experimental evidence from rural Liberia', (2014) 115, *Journal of Public Economics*, 37-47, page 37.

⁷⁶⁴ Tegegne T Y *et al*, 'Evolution of drivers of deforestation and forest degradation in the Congo Basin forests: Exploring possible policy options to address forest loss', (2016) 51, *Land Use Policy*, 312-324, page 313.

⁷⁶⁵ Lee J, Jusup M and Iwasa Y, 'Games of corruption in preventing the overuse of common-pool resources', (2017) 428, *Journal of Theoretical Biology*, 76-86, page 76-7.

⁷⁶⁶ Amacher S G, Ollikainen M and Koskela E, 'Corruption and forest concessions', (2012) 63, *Journal of Environmental Economics and Management*, 92-104, page 92-3.

⁷⁶⁷ Lehne J *et al*, 'Building connections: Political corruption and road construction in India', (2018) 131, *Journal of Development Economics*, 62-78, page 62-3.

⁷⁶⁸ Galinato I G and Galinato P S, 'The short-run and long-run effects of corruption control and political stability on forest cover', (2013) 89, *Ecological Economics*, 153-161, page 153-4.

⁷⁶⁹ Barbier B E, Damania R and Leonard D, 'Corruption, trade and resource conversion', (2005) 50, *Journal of Environmental Economics and Management*, 276-299, pages 276-8.

corruption that increases the normal prices of forest resources and products exploitation for the private sector.⁷⁷⁰

In addition, collusive corruption occurs in events when the briber and the official collude to steal or rob the government of its revenues. The bribe is the important factor since it is essentially an insurance policy taken to avoid paying the necessary penalties for the illegal activity.⁷⁷¹ Collusive corruption usually reduces the natural costs of forest use, and thus tends to promote deforestation and overexploitation.⁷⁷² Non-collusive corruption usually happens in centralised governments that control the harvesting of timber.⁷⁷³ The taking of bribes by the central government helps them maintain a stronghold on political power.⁷⁷⁴ However, collusive corruption is more prone to decentralised governments and usually thrives on weak and fragmented governments.⁷⁷⁵ This usually stimulates a looting mentality in States with weak institutions.⁷⁷⁶ In short, bribery is seen as a door opener for illegal logging, over-exploitation of forest resources and at large deforestation and forest degradation.⁷⁷⁷

The misuse of office for private gains is a huge problem in many countries. It is estimated that worldwide bribery involves some United States Dollars 1 trillion annually, which is a 3 per cent of the global income.⁷⁷⁸ The World Bank Institute recognises that about 25 per cent of

⁷⁷⁰ J Smith, K. Obidzinski, Subarudi and I. Suramenggala, 'Illegal logging, collusive corruption and fragmented governments in Kalimantan, Indonesia', Vol. 5, No. 3, *The International Forestry Review*, Special Issue: Illegal Logging (September 2003), pages 293-302.

⁷⁷¹ The government official might turn a blind eye to logging outside the contractual stipulated areas, exporting timber products without paying the taxes or permits.

⁷⁷² Schulze K, Malek Z and Verburg H P, 'Towards better mapping of forest management patterns: A global allocation approach', (2019) 432, *Forest Ecology and Management*, 776–785, page 776-7.

⁷⁷³ Robbins P, 'The rotten institution: Corruption in natural resource management', (2000) 19, *Political Geography*, 423–443, page 431.

⁷⁷⁴ Kolstad I and Søreide T, 'Corruption in natural resource management: Implications for policy makers', (2009) 34, *Resources Policy*, 214–226, page 214-5. See also Mohammed J A, Inouea M and Shivakoti G, 'Moving forward in collaborative forest management: Role of external actors for sustainable forest socio-ecological systems', (2017) 74, *Forest Policy and Economics*, 13–19, page 13-4.

⁷⁷⁵ Sundstrom A, 'Understanding illegality and corruption in forest governance', (2016) 181, *Journal of Environmental Management*, 779-790, page 780.

⁷⁷⁶ Laurance F W, 'The perils of payoff: Corruption as a threat to global biodiversity', (2004) 19 (8), *TRENDS in Ecology and Evolution*, 399-401, page 400.

⁷⁷⁷ See note 772, page 779.

⁷⁷⁸ Rose-Ackerman S, 'The Challenge of Poor Governance and Corruption', in Lomborg B (ed), *Global Crises, Global Solutions: First Edition*, Copenhagen Consensus (2004) project, Cambridge University Press, page 2. See website <https://www.copenhagenconsensus.com/sites/default/files/cp-corruptionfinished.pdf>. Accessed on 17 December 2018.

Africa's GDP is lost due to corruption in natural resources annually.⁷⁷⁹ Corruption is usually a problem of weak governance and results in the underdevelopment of States. The level of corruption has increased in the forestry sector, because it is amenable to capture and intervention by policy-makers.⁷⁸⁰ It is now agreed by some authors that corruption has genuine costs to society, because of distortions rather than the mere thought of "greasing the wheels".⁷⁸¹

In addition, finances in the forest sector that are usually set aside for climate change mitigation and adaptation programmes are usually used with limited capacity since the forest sector does not have financial governance, thus such funds are often used and administered with low levels of external accountability and transparency.⁷⁸² In other cases, there is just poor accounting and weak financial oversight which results in funds intended for the forest sector ending up somewhere.⁷⁸³ These funds are usually channelled to fund political activities and campaigns; whilst most of the funds can be used to cover up other budget priorities in the forest sector. Thus, corruption is seen as incompatible with sustainable development in the forest sector given the socio-economic and environmental damages.⁷⁸⁴

The issue of corruption seems to have embedded itself within many governmental institutions. This has affected and impeded the effective implementation of forest protection. Since corruption and underhand dealings have some gains to the ruling elite class, developing countries do not want to bind themselves to international treaties. An environmental instrument makes it difficult for the selling of timber products on the international market. Corruption, illegal logging and trading in illegal forest products are highly profitable business in many developing countries. International organisation and groups such as Wildlife Trade Monitoring

⁷⁷⁹ Sequeira S, 'Advances in measuring corruption in the field', in Serra, D and Wantchekon L (eds), *New Advances in Experimental Research on Corruption. Research in Experimental Economics*, (2012) 15, Emerald, Bingley, United Kingdom, 145–176, page 145.

⁷⁸⁰ Olken and Pande, 'Corruption in Developing Countries', (2012) 4, *Annual Review of Economics*, 479-509, page 502.

⁷⁸¹ See Faccio M, 'Politically connected firms', (2006) (96) (1), *American Economic Review*, 369-386, page 369-75.

⁷⁸² See Rosenbaum and Lindsay, 'An overview of national forest funds: Current approaches and future opportunities', (2001), 14-25. National Forest Funds. See website www.fao.org/3/a-bb048e.pdf. Accessed on the 17 December 2018.

⁷⁸³ Barr A and Serra D, 'Corruption and culture: An experimental analysis', (2010) 94, *Journal of Public Economics*, 862–869, page 862-3.

⁷⁸⁴ Bandiera O, Prat A and Valletti T, 'Active and passive waste in government spending: Evidence from a policy experiment', (2009) 99, *American Economic Review*, 1278–308, page 1278.

Network (TRAFFIC)⁷⁸⁵ and Interpol make it difficult to trade once a country has signed the CITES. Moreover, this has led countries who trade in these forest products abandoning all negotiations that could result in the development of a forest instrument. It is a lucrative business for many governmental officials around the world who have gained back-hand wealth from corruption.

Illegal logging is defined as a timber harvesting activity which is inconsistent with the laws of a given country.⁷⁸⁶ The activities can be illegal logging in protected areas or obtaining a license or concession illegally. Illegal logging usually occurs when the forest harvester breaks the concession or license contract. For instance, this can be illegal logging of an area stipulated in the contract, but only cutting the trees with the greater value to the harvester. The harvester can also use unlawful techniques to cut down trees. There are other activities that are considered illegal but are yet to be considered illegal logging; these can be ‘girdling’ or the process of ‘ring-barking’. These processes kill trees so that they can be legally logged. The crimes in forests have also included other sectors such as transport, international or internal trade and industrial processing. In the near future there is a need to recognise various crimes as environmental crimes, these may include illegal occupation of forest areas, arson in forests, illegal tax and accounting practices, and transfer pricing. This could help minimise corruption, deforestation and the illegal trade in forest products and resources.

Corruption is detrimental to forest protection since many governmental officials remain for five years in their positions until the next election.⁷⁸⁷ By the time they move on, they would have signed all timber licenses to the highest bidders. The government officials in Africa continue to take bribes or abuse their offices for private gains.⁷⁸⁸ In addition, forest rangers who usually monitor the logging activities of different companies are usually paid to keep quiet

⁷⁸⁵ TRAFFIC Organisation. See website on <https://www.traffic.org>. Accessed on 17 December 2018.

⁷⁸⁶ Tacconi L, Cerutti PO, Leopold S, Rodrigues RJ, Savaresi A, To PX & Weng X, (2016), ‘Defining Illegal Forest Activities and Illegal Logging Kleinschmit’, D (Editor), Mansourian S (Editor), Wildburger C (Editor) & Purret A (Editor). *International Union of Forest Research Organizations (IUFRO)*. IUFRO World Series, 35. Austria: International Union of Forest Research Organizations (IUFRO). See website on <http://www.iufro.org/publications/article/2016/12/03/world-series-vol-35-illegal-logging-and-related-timber-trade-dimensions-drivers-impacts-and/>, page 23-35.

⁷⁸⁷ See Ferraz C and Finan F, ‘Electoral accountability and corruption: Evidence from the audit reports of local governments’, (2011) 101, *American Economic Review*, 1274–1311, page 1274-6.

⁷⁸⁸ See note 776, page 399.

about illegal trading.⁷⁸⁹ This has led to the loss of vast forest lands in developing countries such as Brazil and Colombia. In the Southern American Amazon, as in Nigeria and Central Republic of Africa, a number of mafia gangs live in these forests which make it difficult for monitoring and evaluations.

The critical role of forests as part in climate change mitigation is also affected by corruption.⁷⁹⁰ Corruption reduces the success of emissions trading schemes, directly by minimising the reliability and effectiveness of greenhouse gas markets. The implementation of the prestigious cap-and-trade system has been shadowed by corruption in both developing and developed countries. Corruption has also performed a major role in the publication of unapproved scientific results, manipulations of greenhouse markets and speculations that are anti-systemic to the mitigation of climate change.

Importantly, under the REDD there is a payment for reducing emissions system. The World Bank and the Forest Carbon Partnership Facility⁷⁹¹ (FCPF) have established mechanisms to reduce deforestation by paying out countries using such principles for forest protection, and also reducing carbon emissions from deforestation. However, through recent developments, there are countries that have never taken such actions to reduce deforestation and yet which are seeking these claims.⁷⁹² This has seriously jeopardised the REDD programmes and mechanisms, and it has become difficult to access donor funds from the Climate Green Fund, to the point that donors have started to point out that they want to use the fund as a bank for a ‘win-win situation’.

⁷⁸⁹ See Didia D O, ‘Democracy, political instability and tropical deforestation’, (1997) 7, *Global Environmental Change*, page 63–76. See also Geist H J and Lambin E F, ‘Proximate causes and underlying driving forces of tropical deforestation’, (2002) 52, *Bioscience*, 143–150, page 143-7.

⁷⁹⁰ Galinato I G and Galinat P S, ‘The short-run and long-run effects of corruption control and political stability on forest cover’, 89 (2013), *Ecological Economics*, 153-161, page 153.

⁷⁹¹ Forest Carbon Partnership Organisation. See website on <https://www.forestcarbonpartnership.org/about-fcpf-0>. Accessed on 17 December, 2018. “*The Forest Carbon Partnership Facility is a global partnership of governments, businesses, civil society, and Indigenous Peoples focused on reducing emissions from deforestation and forest degradation, forest carbon stock conservation, the sustainable management of forests, and the enhancement of forest carbon stocks in developing countries (activities commonly referred to as REDD+)*”.

⁷⁹² Sheng J *et al*, ‘Effects of corruption on performance: Evidence from the UN-REDD Programme’, (2016) 59, *Land Use Policy*, 344-350, pages 344.

The situation has been deteriorating, because of the “carbon cowboys” who simply advertise and market their expertise looking for rents.⁷⁹³ They have been trading with REDD credits even though no legal baseline and databases exist to value these credits.⁷⁹⁴ These situations have also been recognised in Asia, especially in the Philippines where corruption is undermining the national forest framework. The REDD programmes are a source of corruption in the forestry sector, and have resulted in the illegal acquisition of forest products and resources. The transaction costs in the environmental programmes, verification, reporting, costs of implementing measures, have gone up due to corruption and are now being deemed as illegal projects by indigenous people, and this has damaged the REDD programme effectiveness.⁷⁹⁵ The rent-seeking politician’s means that the transactions may double and investors can turn their backs on forest protection programmes and projects.⁷⁹⁶

There is a risk of failure of REDD+ projects, and others that might emerge in the future, because of corruption.⁷⁹⁷ Corruption in the REDD+ projects needs to be taken seriously as it might continue and infiltrate the climate change framework. The issue with REDD+ projects is that they involve money being donated or sent to developing countries where forest programmes have been initiated, however such funds which are transferred to developing countries to start forest protection funds can be embezzled. This has happened in Uganda and was reported by a scholar⁷⁹⁸ in 2012, and included infrastructure that was never built and training “ghost employees”, those were never there in the first place. Instead, the funds had been pocketed by government officials.⁷⁹⁹ Furthermore, funds seemed to disappear when transferred from one ministry to another in cases discovered in Tanzania and Kenya.⁸⁰⁰

⁷⁹³ Chris Lang in Australia, Papua New Guinea, 4 January 2010. Recent videos about carbon cowboys and REDD in Papua New Guinea. See website on <https://redd-monitor.org/2010/01/04/recent-videos-about-carbon-cowboys-and-redd-in-papua-new-guinea/>. Accessed on 17 December 2018. See also Pascoe S, ‘Interrogating scale in the REDD+ assemblage in Papua New Guinea’, (2018) 96, *Geoforum*, pages 87-96.

⁷⁹⁴ Lederer M, ‘REDD+ governance’, (2012) 3 (1), *Wiley Interdisciplinary Reviews: Climate Change*, 107–113.

⁷⁹⁵ Karky and Skutsch, ‘The cost of carbon abatement through community forest management in Nepal Himalaya’, (2010) 69 (3), *Ecological Economics*, 666-672, page 666.

⁷⁹⁶ See note 792, page 345. See also Myers N *et al*, ‘Biodiversity hotspots for conservation priorities’, (2000) 403, *Nature*, 853–858.

⁷⁹⁷ Van Kooten C G, ‘Forest carbon offsets and carbon emissions trading: Problems of contracting’, (2017) 75, *Forest Policy and Economics*, 83–88, page 85-6.

⁷⁹⁸ Cavanagh C, ‘Unready for REDD+? Lessons from corruption in Ugandan conservation areas’, U4 BRIEF, June 2012 No 3, page 3. See website <https://www.cmi.no/publications/file/4478-unready-for-redd.pdf>. Accessed on December 17, 2018.

⁷⁹⁹ Smith J R *et al*, ‘Governance and the loss of biodiversity’, (2003) 426, *Nature*, 67-70, page 67-8.

⁸⁰⁰ See note 798.

There are likely three ways that might affect the REDD+ programmes. Firstly, the overestimation of domestic deforestation rates by corrupt agents during the determination of the baseline for past historical levels of deforestation in their countries. This can potentially generate larger resources and funds which can then be siphoned out.⁸⁰¹ Secondly, in areas where land tenure is unclear, agents can account for reduced and limited emissions for many projects that overlap and such claims become resolved through the use of bribes.⁸⁰² Thirdly, the forest officials who monitor and evaluate the existence of continued harvesting can start the corruption activities.

Furthermore, key issues remain unsolved on the corruption risks with the distribution of more forest carbon rights, which is compensation for not degrading forests and for reducing deforestation. The issue in REDD+ has been that the process is open to inaccurate calculations.⁸⁰³ The calculations are already proving difficult for many developing countries, thus usually result estimations. However, facing and knowing these challenges, private donors refrain from investing in forest protection and conservation projects or programmes.⁸⁰⁴

In developing countries, corruption causes negative public relations. It is evident that corruption causes additional costs and risks, these may include:

- The operational costs of business increases. Corruption incurs additional expenses within and throughout the corporate value chain. A scholar⁸⁰⁵ in his 2005 study, points out that corruption can add up to ten per cent to the normal cost of doing business in many countries.

⁸⁰¹ See Gorodnichenko Y and Peter K S, 'Public sector pay and corruption: Measuring bribery from micro-data', (2007) 91, *Journal of Public Economics*, 963–91.

⁸⁰² See Amacher S G, Ollikainen M and Koskela E, 'Corruption and forest concessions', (2012) 63 (1), *Journal of Environmental Economics and Management*, 92-104.

⁸⁰³ See Massarella K *et al*, 'REDD+, hype, hope and disappointment: The dynamics of expectations in conservation and development pilot projects', (2018) 109, *World Development*, 375-385.

⁸⁰⁴ Amy E Duchelle *et al*, 'What is REDD+ achieving on the ground?', (2018) 23, *Current Opinion in Environmental Sustainability*, pages, 134-140, page 134.

⁸⁰⁵ See Errath B *et al*, *Business against Corruption – A Framework for Action*. United Nations Global Compact/Prince of Wales International Business Leaders Forum/Transparency International (2005).

- There are also legal risks incurred from corrupt activities. If caught doing corrupt business activities, companies or individuals can face large fines and disqualification from government procurement.⁸⁰⁶
- There is also the loss of competitive risks. The companies or individuals that refuse to pay bribes are usually at a competitive disadvantage and lose much of their business to unethical competitors who are willing to pay bribes to influence the procurement process.

However, corruption is not only detrimental to business, it is also an obstacle to socio-economic and political development. There are many significant costs associated with corruption, these include constrained economic growth, reduced government services, reduced legitimacy of market economy, and democracy.⁸⁰⁷ Corruption in the forestry sector takes public investment choices away to services such as large infrastructure development projects. These developmental projects are usually marked by government officials so that they can gain bribes.⁸⁰⁸ This includes the scarcity in demand for public services; officials may even create incentives and demand payment on services that should have been awarded for free or at a lower cost. This also means that indigenous people and local companies will also be priced out of opportunities for logging licences. The licenses will usually be expensive and local government officials would not want to work with them for fear of being reported to the police.⁸⁰⁹

Moreover, corruption reduces the legitimacy of the forest institutions that are needed and expected to enforce forest protection laws.⁸¹⁰ Some of the forest rangers who are supposed to be controlling the illegal activities in forests are now part of the corrupt business; this reduces the credibility of these officials and makes the laws hypocritical in the eyes of the local communities. Bribery, for example, reduces and obstructs the implementation of laws and the implementation of conservation policies thus enabling illegal logging in forest areas. Firstly,

⁸⁰⁶ Preventing Corruption in Public Procurement (OECD). See website on <http://www.oecd.org/gov/ethics/Corruption-Public-Procurement-Brochure.pdf>. Accessed on 16 January 2021.

⁸⁰⁷ Sundström A, 'Corruption and regulatory compliance: Experimental findings from South African small-scale fisheries', (2012) 36 (6), *Marine Policy*, 1255-1264, page 1255.

⁸⁰⁸ Kuusela O, Amacher S G and Moeltner K, 'Enforcing the rules in timber concessions: Performance bonding in the presence of corruption risk', (2017) 85, *Forest Policy and Economics*, 52–64, page 52-3.

⁸⁰⁹ Sundström A, 'Covenants with broken swords: Corruption and law enforcement in governance of the commons', (2015) 31, *Global Environmental Change*, 253-262, page 253.

⁸¹⁰ Rogelja T and Shannon A M, 'Structural power in Serbian anti-corruption forest policy network', (2017) 82, *Forest Policy and Economics*, 52–60, page 52-3.

corruption has influenced many legislators to enact softer and promoting less restrictive forest laws. Further, reporting and accountability and mechanisms for enforcement have all been scrapped as legislators fear whistle-blowers.⁸¹¹ Secondly, corruption decreases the effectiveness of established legislation during the implementation phase.

Bribery in the form of food, finance or friendship, usually hampers law enforcement and compliance to many rules and regulations. The forest officials usually pay back through information sharing, inadequate enforcement or involvement.⁸¹² The forest rangers subsequently become blind when a bribe is paid. Firstly, the rangers engage in inadequate enforcement, this includes no monitoring, misreporting of landings or knowingly writing incorrect or faulty fines. Secondly, sharing information with the bribers and revealing more details on how to divert from legal routes. Finally, they are also involved in the activities, for example rangers might take part in transporting forest products.⁸¹³ Thus, corruption reduces the willingness of citizens to comply with forest laws and bribery allows for the dilution of deterrence since offenders can now pay their way out.⁸¹⁴ Thus, it is critical that the international forest community engages with efforts to reduce corruption.

Consequently, corruption stagnates the economic growth of many countries since it distorts public investments, undermines foreign investments and alludes to the growth of an informal sector in the forestry sector.⁸¹⁵ Many investors would typically avoid countries in which corruption increases the cost of business and with no rule of law.⁸¹⁶ In addition, corruption also increases underground logging license operations in order to facilitate bribery.⁸¹⁷ This usually results in indigenous communities illegally logging the forests or out of anger burning the whole forests.

⁸¹¹ Fredriksson P G, Vollenberg H R J and Dijkgraaf E, 'Corruption and Energy Efficiency in OECD Countries: Theory and Evidence', (2004) 47 (2), *Journal of Environmental Economics and Management*, 207–231, page 208.

⁸¹² See note 809.

⁸¹³ Ibid.

⁸¹⁴ Sundstrom A, 'Corruption and Violations of Conservation Rules: A Survey Experiment with Resource Users', (2015) 85, *World Development*, 73–83, page 73.

⁸¹⁵ Joly M, 'Corruption: The shortcut to disaster', (2017) 10, *Sustainable Production and Consumption*, 133 – 156, page 133-4.

⁸¹⁶ See note 809.

⁸¹⁷ Barbier B E, Damania R and Léonard D, 'Corruption, trade and resource conversion', (2005) 50, *Journal of Environmental Economics and Management*, 276–299, page 296.

Furthermore, the increase in corruption and the results of corrupt officials not being held accountable results in the loss of faith in governments by citizens. The lack of public trust by citizens usually undermines the rule of law resulting in civil conflicts and State instability or lack thereof of State security. Finally, corruption reduces the legitimacy of a democratic government and its market economy. This then leads to rampant deforestation of forests once the rule of law and legitimacy of the government are totally lost. In the forestry sector, corruption has led to the illegitimacy to a particular population perception (in other countries it as a factor of lack of implementation) of many national legislations and programmes for forest protection. Thus, political stability has significant effects on the forest cover.⁸¹⁸

Two scholars⁸¹⁹ state that the effects of an index of government integrity and stability on the rate of timber harvest in several countries, their finding are that the increase and improvement of forest governance could increase the harvest in weak governance levels, but this could reduce harvest initially in countries with stronger governance system. They also state that agricultural developments can also lead to corruption which can affect the levels of deforestation in a country. Wealthy farmers can influence the policy-makers to select illegal logging of forests for agricultural production. They can also influence unsustainable ways for agricultural extensions in forest areas.⁸²⁰

Corruption in the forestry sector seems to thrive more, because forest officials are usually given extended discretionary powers with limited oversight. These officials usually work in remote and isolated areas where there is little to none oversight monitoring or public scrutiny.⁸²¹

There are some enterprises being used to reduce corruption in the forest sector. Firstly, the Forest Law Enforcement and Trade Action Plan⁸²² now monitor the trade of forest products

⁸¹⁸ Galinato I G and Galinato P S, 'The short-run and long-run effects of corruption control and political stability on forest cover', (2013) 89, *Ecological Economics*, 153–161, page 153.

⁸¹⁹ Ferreira S and Vincent R J, 'Governance and Timber Harvests', (2010) 47 (2), *Environmental and Resource Economics*, 241–260, page 241.

⁸²⁰ Jodi S, Nolte C B and Agrawal A, 'Deforestation and timber production in Congo after implementation of sustainable forest management policy', (2016) 52, *Land Use Policy*, 15-22, page 15.

⁸²¹ See Maier C and Winkel G, 'Implementing nature conservation through integrated forest management: A street-level bureaucracy perspective on the German public forest sector', (2017) 82, *Forest Policy and Economics*, page 14-29.

⁸²² European Union Forest Law Enforcement, Governance and Trade Organisation. See website on <http://www.flegt.org/>. Accessed on 18 December 2018.

around the world, with the European Union⁸²³ employing these actions in its Member States. In the Asia-Pacific region, the Forest Governance Integrity Program⁸²⁴ that was initiated by the Transparency International's national chapters has developed tools that seek to reduce corruption and included a consortium of actors in civil societies in Asia and the Pacific region. They have also produced a manual for risk assessments directed to forest practitioners. Transparency International also has hosted the Forest Integrity Network, which is a consortium of actors from the private and public advocacy sectors which aim to reduce corruption. These programmes also bring NGOs and anti-corruption organisations together. Its work has been to establish a "Transparency Index"⁸²⁵ which can point to the forms of corruption in the forest sector, countries and also companies who are leading the way on good forest governance. The other initiative is the "Vulnerability Index"⁸²⁶ which can demonstrate the impacts of corruption in the forest sector in the different realms of society.⁸²⁷ There is also an emphasis on the development of a "Forest Corruption Fighters' Tool Kit" which can be used by activists on the ground and the compilation of a source of good practices that inspire progress.

Furthermore, steps are being taken by governments, NGOs and business to reduce corruption. Most countries have ratified the United Nations Convention on Anti-Corruption⁸²⁸ (UNCAC) and the Organisation for Economic Cooperation and Development's Convention Combating Bribery of Foreign Officials in International Business Transactions⁸²⁹. This is important since these instruments can be transformed into domestic policies by these countries. They are

⁸²³ See website on <http://www.euflegt.efi.int/flegt-action-plan/>. Accessed on 18 December 2018.

⁸²⁴ Fabie P, *Political Economy in the Natural Resources Sector TI Forest Governance Integrity Programme Fighting Corruption in forestry sector, Transparency International: The global coalition against corruption*. See website on <http://www.oecd.org/site/adboecdanti-corruptioninitiative/meetingsandconferences/44442304.pdf>. Accessed on 18 December 2018, 1-10, and page 9. Michael Avosa, FGI Programme Manager and Alfred Rungol, Research Assistant, Forest governance integrity baseline report Papua New Guinea, (2011), Transparency International Papua New Guinea Inc. See website http://www.transparencypng.org.pg/wp-content/uploads/2017/11/TIPNG_Forest-Governance-Integrity-Baseline-Report-1.pdf, and World Bank Organisation. See website on <http://www.worldbank.org/en/topic/forests/brief/forest-law-enforcement-governance>. Accessed on 18 December 2018.

⁸²⁵ Corruption Perceptions Index 2017. See website on https://www.transparency.org/news/feature/corruption_perceptions_index_2017. Accessed 18 December 2018.

⁸²⁶ See website on <https://enactafrika.org/vulnerability-index>. Accessed 18 December 2018.

⁸²⁷ Gupta and Siebert, 'Combating Forest Corruption', (2004) 19 (1-3), *Journal of Sustainable Forestry*, 337-349, page 343.

⁸²⁸ United Nations Office on Drugs and Crime, *Convention against Corruption*, Vienna, 2004. See website on https://www.unodc.org/documents/brussels/UN_Convention_Against_Corruption.pdf. Accessed on August 01, 2019.

⁸²⁹ The International Consortium on Combating Wildlife Crime (ICWC). See website on <http://www.oecd.org/corruption/oecdantibriberyconvention.htm>. Accessed on January 08, 2019.

various agencies that have been established to reduce corruption, including the Consortium Combating Wildlife Crime and Wildlife and Forest Crime Toolkit.⁸³⁰ These monitor international trading deals and transactions with the intention being the reduction of corruption. Furthermore, Transparency International stresses that the minimisation of corruption can help the effective protection of forests and greenhouse gases emission schemes.⁸³¹ Developed countries have also been pushing developing countries to reduce corruption by sanctioning their countries on trade, listed corporations and individuals.

Further, lack of implementation has been playing a part, but the certification of forest products by the Forest Stewardship Council⁸³² and other organisations has pushed the governments to political willingness since they can no longer trade their timber which is not certified. Forest certification as a means of sustainable forest product trade and how it has helped with the implementation of forest laws and sustainable use of timber will be discussed further in the coming Chapters.

In addition, illegal logging is usually connected to the trafficking of goods, such as weapons, drugs and also human beings.⁸³³ Combating the smuggling of goods such as these requires holistic plans and reforms in government institutions, including in the customs offices and better communication in the transit ports of a country. Furthermore, forest certification can be cheated by falsifying documents or bribing officials to re-label goods. Thus, there is a need for reformed monitoring in many different steps and to set as forest concessions, trade routes and employment of forest officials.

In addition, another solution can be to reduce the government officials from partaking in forest protection programmes since they are the ones seeking rents and abusing powers. A community based approach may improve monitoring in developing countries. Due to the numerous cases of centralised forest regime management being corrupt, there is a need for institutional reforms which move away from enforcement of the existing institutions and rather promote communal

⁸³⁰ OECD Convention on Combating Bribery of Foreign Public Officials in International Business Transactions. See website on https://cites.org/sites/default/files/eng/prog/iccwc/International_recognition_of_role_of_ICCWC_%20final.pdf. Accessed August 01, 2019.

⁸³¹ Walter M and Luebke M, 'The impact of corruption on climate change: Threatening emissions trading mechanisms?', (2013) 7, *Environmental Development*, 128-138, page 135.

⁸³² Forest Stewardship Council. See website on <https://fsc.org/en>. Accessed on 11 August 2019.

⁸³³ See Bulkan J and Palmer J, 'Breaking the Rings of Forest Corruption: Steps towards Better Forest Governance', (2008) 18(2), *Forests, Trees and Livelihoods*, page 103–131.

management of forests by locals and indigenous people.⁸³⁴ This point can be advanced by establishing independent forest monitoring programmes by independent third parties. In agreement with government officials, this could provide periodic assessment and review of the legal compliance, observation and guidance on the forest law enforcement systems.⁸³⁵

The assigning of REDD+ credits to individuals, companies or communities as active participants could reduce corrupt behaviour by national governments in the forest sector. The involvement of many individuals in the forest sector would definitely increase transparency and reduce corruption. The World Resources Institute⁸³⁶ is already using extensive satellite imagery to monitor and evaluate, and also to pin-point the levels of deforestation in the world. The combination of increasing monitoring actors (such as community management, agencies, NGOs and international organisations) and the use of technologies can help reduce corruption.⁸³⁷

Thus, the combination of independent monitoring and evaluation actors and the use of technology can reduce corruption⁸³⁸, for example the NGOs and multi-national organisations can combine their experiences in order to provide oversight monitoring in forests. The use of new technology allows for public participation to reduce corruption in forest activities. The NGOs nowadays use mobile applications to report abuse online and to stakeholders, others report abuse via text messages and emails.⁸³⁹ This is usually useful in larger forests which are surrounded by populated communities, where access to mobile phones and computers is widespread and accessible. However, there is a need to co-operate with other tech companies that manufacture drones and satellites to monitor forest areas.⁸⁴⁰

⁸³⁴ Pellegrini L, 'The Effect of Corruption on Growth and its Transmission Channels', in Pellegrini L (ed), *Corruption, Development and the Environment*, (2011), Springer, Chapter 4, 53-74, page 53.

⁸³⁵ Hunt J, 'How corruption hits people when they are down', (2007) 84, *Journal of Development Economics*, 574–89, page 574.

⁸³⁶ World Resource Institute. See website on <https://www.wri.org/>. Accessed on 18 December 2018.

⁸³⁷ Jehong Ryu, James Daniel Walmsley, Paul Slinn & Sachihiko Harashina (2004). *The role of environmental non-governmental organisations in the environmental impact assessment process in Japan, Impact Assessment and Project Appraisal*, 22:4, 283-293, DOI: 10.3152/147154604781765798, page 283-5.

⁸³⁸ Cole A M, 'Corruption, income and the environment: An empirical analysis', (2007) 62, *Ecological Economics*, 637–647, page 637.

⁸³⁹ Susan Carr, David Humphreys, Alan Thomas, *NGOs and their influence on environmental policies in Africa: A framework*, 1st Edition, (2000), Routledge, page 3-22.

⁸⁴⁰ Ibid.

In addition, governments have a large impact on the successes of private initiatives undertaken by NGOs and other private stakeholders in a poly-centric governance structure. Governments create and contribute to sustainable development, and also enable conditions in societies for partnerships and other initiatives. Furthermore, governments are also the purchasers and consumers of forest products such as wood and timber for infrastructure and public housing.

If governments were assisted by the public and NGOs to implement and monitor forest protection programmes, the deforestation rate in their countries would decrease drastically.⁸⁴¹ This is because governments have all the incentives to protect forests; firstly, they have the legislature to enact legislation for forest protection, law enforcement and land-use planning are primarily local government responsibilities. Secondly, governments have financial resources and know who has a legal logging contract or not. Thirdly, governments have the security sector (army and police) to reduce illegal trafficking of any kind. Furthermore, they have rangers and customs security that can reduce national and international illegal crimes. Finally, governments can motivate their citizens and can employ a mass of forest rangers and observers to reduce deforestation and monitor their forests. Governments can also promote information sharing, improve the use of technology, support partnerships and bring role players together.

In the same vein, governments play a huge role in the awarding of legal logging licences and forest certificates. They can minimise deforestation by allowing public participation monitoring, the application process of logging licences and the independent assessment and monitoring of the logging process. This will surely allow for closer monitoring and an independent eye on the activities that affect forests. That is, governments can also monitor the trading in and out of forest products; thus, can reduce the illegal trading of forest products. One of the pillars that need to be strengthened to reduce illegal trading is law enforcement. This can be in terms of policing, setting up of courts and access to courts to the public, thus allowing public hearings to take place and can also allow for protection of whistle-blowers.

Moreover, in a poly-centric government system to protect forests, there is a need to create interdependency in institutions. This allows for cooperation and integration, especially on issues which one institution cannot resolve another can then step in. It also allows for co-

⁸⁴¹ Naghmeh Nasiritousi, 'NGOs and the environment', (2019), *Routledge Handbook of NGOs and International Relations*, 329-342, page 329-45. See website on <https://www.diva-portal.org/smash/get/diva2:1380853/FULLTEXT01.pdf>. Accessed 20 January 2021.

ordinating, transparency and integration, to see what the other individuals in an institution are doing. Governments also must create vertical structures of administrative and political accountability between institutions and individuals to view each other's obligations. There must be clear lines of responsibility amongst local municipal staff and forest officials. In short, multiple strategies can be used to strengthen forest governance, these may include public and judicial sector reforms, financial controls and economic policy measures. Other options can be to strengthen civil structures, liberties and participation of the greater civil society.

Importantly, decentralisation means that there is a shift of responsibility and decision-making from the higher central to local lower institutions.⁸⁴² There are mainly four types of decentralisation, namely deconcentrating of authority from the higher central government institutions to non-autonomous administrations; delegation of decision-making and management to quasi-independent institutions; devolution and transfer of power to independent local government; and privatisation in which non-governmental institutions assume responsibility.⁸⁴³ Decentralisation might reduce the opportunity for corruption, improves the effectiveness and equity of allocated resources.⁸⁴⁴ However, it must be stressed out that corruption can also manifest itself at the local authorities, as it is more associated with individuals and weak institutions.

The decentralisation of governments also can improve participation, monitoring and accountability, this can enhance a country's capabilities. Local officials should become accountable to the local communities. This would allow for a better voice for the local community and a sense of pride and ownership, thus allowing for monitoring of the local officials' performances.⁸⁴⁵ The horizontal relationship with local chiefs and community leaders also reduces the officials from "rent-seeking". The central power needs to be decentralised to

⁸⁴² See Basnyat B *et al*, 'Legal-sounding bureaucratic re-centralisation of community forestry in Nepal', (2018) 19, *Forest Policy and Economics*, page 5-18. See also Sean Sloan *et al*, 'The cost and distribution of forest conservation for national emissions reductions', (2018) 53, *Global Environmental Change*, page 39-51.

⁸⁴³ Rondinelli and Cheema, 'From Government Decentralization to Decentralized Governance'. See website https://www.brookings.edu/wp-content/uploads/2016/07/decentralizinggovernance_chapter.pdf, 1-20, pages 2-3. Accessed August 10, 2019.

⁸⁴⁴ See Bose P, Arts B and van Dijk H, 'Forest governmentality: A genealogy of subject-making of forest-dependent 'scheduled tribes' in India', (2012) 29 (3), *Land Use Policy*, page 664-673. See also Brander M L *et al*, 'Mapping the economic value of landslide regulation by forests', (2018) 32, *Ecosystem Services*, page 101-109. See also Calfucura E, 'Governance, Land and Distribution: A Discussion on the Political Economy of Community-Based Conservation', (2018) 145, *Ecological Economics*, 18-26, page 19-23.

⁸⁴⁵ See note 774, page 214.

reduce authority which can cause one individual to manipulate the whole forest governance system. The use of participatory decentralisation in developing countries can improve cost-effectiveness and reduce the more bureaucratic corruption in governments under a decentralised system of administration.⁸⁴⁶

These corruption issues have laid ahead in the design of a forest instrument to control forest illegal activities. A forest instrument with chosen parameters that can reduce bribery is the answer. The instrument will help the understanding of processes that can reduce bribery, ensure forest protection, and policy decisions by national governments, markets, information, forest ownership and bargaining powers, enforcement and the role of NGOs, government institutions or offices, forest managers, inspectors and rangers. To be precise, a forest instrument will bring clarity in forest governance and forest concepts or programmes.

There are several ways to curb corruption in the forest framework and protection mechanisms. Firstly, there is a need to establish transparent, credible and efficient governance structures. This will ensure that monitoring, reporting and verification duties are separate and carried out accurately. The credibility of the system allows transparency which ensures that all the funds are used for forest protection programmes.⁸⁴⁷ Secondly, there is a need to develop a fair and transparent benefit-sharing mechanism in forest governance. An equitable benefit sharing mechanism is fundamental to reducing corruption. The openness of the forest sector should be strengthened to make sure there is legitimacy in forest protection programmes.⁸⁴⁸

Corruption can be reduced from the source through ensuring that stakeholders are able to share the benefits through forest protection programmes and projects. Thirdly, using market mechanisms, since there is a non-binding instrument there is a need to build a market mechanism. This market mechanism may generate the overestimated effect caused mainly by false trading between two sides in timber and forestry trading. This will reduce influence from

⁸⁴⁶ Bardhan P and Mookherjee D, 'Decentralizing anti-poverty program delivery in developing countries', (2005) 89, *Journal of Public Economics*, 675–704, page 675-6. See also Bardhan P and Mookherjee D, 'Capture and governance at local and national levels', (2000), *American Economic Review*, 135–139, page 135-6.

⁸⁴⁷ Dennis T, 'Forests and Conflict: The Relevance of REDD+', in Geoffrey D *et al*, (eds), *Backdraft: The Conflict Potential of Climate Change Adaptation and Mitigation*. Environmental Change & Security Program Report, (2013), 14 (2). Washington D.C. Woodrow Wilson International Center for Scholars, 26-33, page 32.

⁸⁴⁸ Barr C M and J A Sayer, 'The political economy of reforestation and forest restoration in Asia–Pacific: Critical issues for REDD+', (2012) 154, *Biological Conservation*, 9-19, page 10.

policy-makers, thus reducing the rent-seeking behaviour of many policy-makers.⁸⁴⁹ Although, corruption in developing countries is difficult to stop, a rigorous step can minimise the forest mechanisms and programmes from collapse. Forest protection programmes can beat issues of corruption as long as steps are taken to address and control it.

The cost of information should also be reduced since this allows corruption from agents who represent different companies. Communication of tenders should be publicised in newspapers and on local radio stations. The awarded individuals should also be held accountable through the use of public participation in all processes and procedures. The communities should also be fostered by political participation, socio-economic and political power in communities, and transparency in decision-making processes, institutions that allow for government separation of power and holding government responsible for its actions and greater media attention on the use of resources. Public participation usually reduces the political power of different institutions and allows for transparency and accountability in decision-making and government processes.⁸⁵⁰

Furthermore, in order to reduce corruption solutions must be directed by a public office perspective which will strengthen the state, augment state-society relations and reduce the incentives that allow for corruption behaviour. The state can also be strengthened by economic reforms, checks-and-balances of public expenditure and the management of finances, supporting the legal and judicial systems, public participation and oversight mechanisms and civil service reform. State-public relations can also form anti-corruption coalitions, which can be between civil groups and public officials. Moreover, internal monitoring (auditing, reports and disciplinary hearings and codes), increasing wages and rewarding honest and merit-based behaviours in the forest system can be initiated in order to change human behaviour and reduce corruption.⁸⁵¹

The key to reducing corruption is actions that are directed towards international, national, civil and business communities, which seek co-operation, transparency and integration to reduce

⁸⁴⁹ Sovacool B K and Brown M A, 'Scaling the policy response to climate change', (2009) 27, *Policy and Society*, 317–328, page 317-8. See also Sheng J *et al*, 'Effects of corruption on performance: Evidence from the UN-REDD Programme', (2016) 59 (31), *Land Use Policy*, page 344-350.

⁸⁵⁰ Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental matters, Aarhus, Denmark, on 25 June 1998, Article 6. See website on <https://ec.europa.eu/environment/aarhus/>. Accessed on 06 February 2020.

⁸⁵¹ See website on <https://www.oecd.org/gov/ethics/corruption-risks-internal-control-mena.pdf>. Accessed on 2021.

corruption in the forestry sector. A key step at the national level might be to start ratifying well-known international anti-corruption agreements such as the Anti-Bribery Convention and the Criminal Law Convention Against Corruption, the Inter-American Convention against Corruption of the Organization of American States, the United Nations Convention against Corruption of the United Nations, the OECD Anti-Bribery Convention, the Civil Law Convention on Corruption of the Council of Europe, the EU Convention against Corruption involving officials of the European Union, and the African Union Convention on Preventing and Combating Corruption.⁸⁵² The following step might be to enact national legislation that will enforce in law the measures necessary to reduce corruption. This might include legal definitions of election fraud, corruption, money laundering, illicit lobbying and conspiracy, with stipulated fines and prison terms for violators.

There is also a need to increase the enforcement of anti-corruption laws in the regional blocks to reduce international illicit trade. Education and the protection of whistle-blowers are important for minimising corruption. There is a fundamental need to improve the codes of conduct, anti-corruption practices and public transparency amongst internationally renowned, multi-national corporations. Furthermore, international financial institutions can (and should) take a hard line towards reducing support for corrupt individuals and governments. Developed countries should also actively enforce promulgated international binding agreements to reduce bribery by multi-national corporations.⁸⁵³ There are other recommendations that can be put forward to reduce corruption. These are: -

- There must be a way of publishing explanations and transparency of the many government policies that aim to reduce corruption.
- There is a need for application of sanctions that reduce corruptions such as fines, prison sentences and termination of contracts.
- Establishment of the much needed open monitoring and the oversight mechanisms.
- A clear policy that defines responsibilities of both agents and other stakeholders.

⁸⁵² United Nations Convention against Corruption, came into force in 2005, Inter-American Convention Against Corruption, Caracas, Venezuela, came into force in 1997, Civil Law Convention on Corruption adopted by the Council of Europe in 1999, Criminal Law Convention on Corruption adopted by the Council of Europe in 1999, EU Convention against Corruption involving officials adopted by the European Union in 1997, African Union Convention on Preventing and Combating Corruption, Maputo, 2003, and OECD Anti-Bribery Convention (Convention on Combating Bribery of Foreign Public Officials in International Business Transactions).

⁸⁵³ See note 776.

- Establishing checks and balances, and the oversight of all duties that are vulnerable to corruption.
- Creating formal consultative arrangements that function for mediation and arbitration.
- Information sharing between governmental ministerial bodies.

4. **Fragmentation**

Multilateral Environmental Agreements (MEAs) largely define international environmental laws that exist today. The MEAs rarely focus on the cross specific lines that address cross-cutting questions. In international forest governance, the MEAs have focused on climate change, biodiversity and desertification laws, without any direct linkages to forest protection. International forest laws epitomise the compartmentalisation and fragmentation of international environmental laws, and this has had negative effects on forest protection. In the 20th century, environmental law developed and this resulted in compartmentalisation of laws in specific environmental fields.⁸⁵⁴ The main problem in forest governance seems to be the definition of forests since different fragmented instruments have different definitions due to the nature and functions of forests. This fragmentation of the initial concept of forests seems to be a burden that has complicated negotiations for a forest protection instrument.

Fragmentation has hampered forest laws to such effect that international legal experts fear the ever increasing complexity of the legal landscape has raised important legal questions.⁸⁵⁵ This can be the ability of forest laws to protect forests and how policy-makers can maximise a new instrument since the regime seems populated and complex already. The fragmentation of international law often creates an inconsistent system of international environmental instruments.⁸⁵⁶ The issue of forest governance does not only cause problems in the forestry realm, but also in other sectors such as trade law, human rights law, property law, water law and lastly food and agriculture. These cross-sectional challenges have been the making of international environmental law.

⁸⁵⁴ Koskenniemi M, 'International legislation today: Limits and Possibilities', (2005) 23, *Wisconsin International Law Journal*, 61-92, page 78.

⁸⁵⁵ Senstein C R *et al*, 'Predictably incoherent judgements', (2002) 54, *Stanford Law Review*, 1153-1216, page 1160.

⁸⁵⁶ Kim E R, 'The emergent network structure of the multilateral environmental agreement system', (2013) 23, *Global Environmental Change*, 980–991, page 980-1.

International law is negotiated and promulgated between different countries that negotiate and agree on conventions, treaties and protocols. These States are also members of different regional blocks on their continents. Furthermore, the issue of compartmentalisation has defined most environmental problems which are mostly multi-dimensional and cross-sectoral in nature. As international environmental law has been about creating issue-specific environmental agreements and institutions, this means that the gaps and interlinkages in international environmental law and the environmental problems are frequently left unaddressed or resolved.

The growth of the forest regime through globalisation and localisation has resulted in pluriformity in the forest regime which has been characterised by a number of multi-actor partnerships. The growth of pluriformity has resulted in a number of international programmes which stimulate specific forms of forest protection, conservation and management. Consequently, rather than a forest regime, a forest regime complex has now been created. This is characterised by a hybrid of concepts and principles for the conservation, management and protection, and even use of forests. The fragmentation has caused new problems and questions of whether it is a different regime in isolation, or it is gradually emerging with new assemblages at the face of different regimes. This can cause a variance of programmes being implemented at an international level only or the opposite on the national. It can cause rifts at conferences with Parties arguing about the same concepts, standards and principles, but using a different forest regime altogether.⁸⁵⁷

In addition, fragmentation often creates legal and doctrinal inconsistencies which can eventually challenge the unity and legitimacy of the many legal fields.⁸⁵⁸ In international forest law, fragmentation has caused institutional and substantive dimensions to shift. The institutional fragmentation has created an opportunity for forum-shopping and deviating jurisprudence.⁸⁵⁹ On the substantive dimensions, this has caused a cluster of rules and concepts, specialised branches of international environmental law and the emergence of ‘special laws’.⁸⁶⁰ While fragmentation has posed challenges on the development of international environmental

⁸⁵⁷ Singer B and Giessen L, ‘Towards a donut regime? Domestic actors, climatization, and the hollowing-out of the international forests regime in the Anthropocene’, (2017) 79, *Forest Policy and Economics*, 69–79, page 72.

⁸⁵⁸ Prost M and Clark P K, ‘Unity, Diversity and the Fragmentation of International Law: How much does the multiplication of international organization really matter?’, (2006) 5, *Chinese Journal of International Law*, page 342.

⁸⁵⁹ Koskenniemi M, United Nations International Law Commission (ILC), ‘Report of the study group on the fragmentation of international law: Difficulties arising from the diversification and expansion of international law’, (UN Doc A/CN.4/L.682, 2006), paragraph 489. Fifty-eighth session, Geneva. See website on https://legal.un.org/ilc/documentation/english/a_cn4_l682.pdf. Accessed on March 6, 2020.

⁸⁶⁰ Ibid.

laws, it has importantly put to question the relevance and need of forest laws. Although there is a need for specialisation of laws in environmental law, there is similarly a fundamental need for coherence, co-operation and integration since there is a common theme to protect our environment. Importantly, a scholar⁸⁶¹ recognises that fragmentation of international environmental law is a true conflict of laws.

Furthermore, international environmental law has grown rapidly in the 20th century.⁸⁶² This rapid growth meant that the new instruments created had to establish issue-specific institutions, rules and procedures.⁸⁶³ This enabled the international community to tackle many environmental problems and negotiate many different treaties. Due to this method of problem-solving the field of international environmental law has had some ‘successes’.⁸⁶⁴

However, this fragmented manner, as the field has grown has also created a series of challenges. The MEAs usually do not create co-operation mechanisms to solve transboundary or cross-cutting issues. Although MEAs intersect, these many intersections are largely unaddressed. They are huge gaps, insufficiencies, inefficiencies and conflicts between MEAs, among MEAs and other international law areas. Thus, compartmentalisation and fragmentation has created some growth and concerns of consistency and legitimacy. Nevertheless, a scholar⁸⁶⁵ points out that the compartmentalisation can be manageable and fragmentation has been politically inevitable. This is because international law judges and lawyers capable of transcending the legal landscapes and boundaries where barriers can inhibit good practice.

The issue of fragmentation in international environmental law focuses on global governance and the overall institutional setting of the existing laws and how they interact.⁸⁶⁶ There are many different types of fragmentation, but the main ones are the three to be discussed here. Firstly, there is synergistic fragmentation when the core institution, which includes all countries and also provides for effective and detailed generalisations of the principles that will regulate the international policies in very distinct but substantial integrated institutional arrangements,

⁸⁶¹ Cohen HG, ‘Finding international law, Part II: Our Fragmented legal community’, (2012), 44 (4), *New York University Journal of International Law and Politics*, page 1049.

⁸⁶² Anton D K, ‘The “Thirty-Percent Solution” and the future of international environmental law’, (2013) 10 (2), *Santa Clara Journal of International Law*, 209-219, page 213-14.

⁸⁶³ Driesen D, ‘Thirty years of international environmental law: A retrospective and plea for reinvigoration’, (2003) 30, *Syracuse Journal of International Law and Commerce*, page 356.

⁸⁶⁴ Bodansky D, *The Art and Craft of International Environmental Law*, (Harvard University Press 2010), page 16.

⁸⁶⁵ Dworkin R, *Law’s Empire*, (Harvard University Press 1986), page 253.

⁸⁶⁶ Biermann F, Pattberg P and van Asselt H, ‘The Fragmentation of Global Governance Architectures: A Framework for Analysis’, (2009) 9 (4), *Global Environmental Politics*, 14-40, page 17.

is fragmented.⁸⁶⁷ Secondly, there is co-operative fragmentation when an issue is marked by many different institutions and decision-making procedures that can be said to be loosely integrated, that is the relationship between norms and principles of different institutions are ambiguous. This can also happen when the core institution does not include all countries that are important in the issue area.

Furthermore, co-operative fragmentation can mean that policies in the same area or field are decided and monitored using and through different institutions or core institutions, in one hand, and some individual countries that are not part of this or these institutions on the other hand.⁸⁶⁸ Finally, connective fragmentation is when there are different institutions that hardly connect or have different, unrelated decision-making processes and procedures. They also have connecting sets of norms, principles and rules and have different parties or are driven by actor coalitions that accept or advance these connections.

In addition, institutional fragmentation also hampers efforts to develop more effective systems of supra-national forest governance. Fragmentation then requires the international community to make and adopt a two-fold strategy which plans to create an international environmental organisation and also working to improve co-operation, integration and communication amongst the international institutes which have overlapping mandates or objectives.⁸⁶⁹

There are different consequences and governance performances due to these different types and degrees of fragmentation. If the systems are more integrated, this might mean a higher effectiveness when solving core problems in issue areas.⁸⁷⁰ In the same vein, fragmentation affects the speed in which agreements are reached, a certain level regulatory ambition can be set and realised, the potential participation amongst actors and sectors, and the equity challenges involved. These issues speed, participation, ambition and equity are connected and interrelated, and they also eventually affect the overall governance performance. For example, fragmented architecture with indirect linkages will be less likely to have a comprehensive and effective response.

⁸⁶⁷ Ibid, page 20.

⁸⁶⁸ Ibid.

⁸⁶⁹ Cinnamon P C, 'Good climate governance: Only a fragmented system of international law away', (2008) 30 (4), *Law & Policy*, 450-480, page 451.

⁸⁷⁰ Biermann F, Pattberg P and van Asselt H, 'The Fragmentation of Global Governance Architectures: A Framework for Analysis', (2009) 9 (4), *Global Environmental Politics*, 14-40, page 24.

In terms of connective fragmentation, different actors will pull in different directions, this complicates the said linkages and relationships in different or in other policy areas. The results are usually economic implications with private funders refusing to finance conflicting forest protection projects. Furthermore, this might also affect international competitiveness as some Parties want a binding policy while others want a voluntary policy which is less rigorous. A less fragmented forest governance regime would entail systematic and stable agreements which could interconnect and provide linkages with other institutional frameworks such as the world trade regime. A fragmented regime might also decrease entry costs for many private actors; this might start a marketing race at the bottom of the forest sector or across the forest sector which can result in hyper-demand and overexploitation of forest resources.⁸⁷¹

In addition, fragmented regimes pose serious concerns on equity and fairness. Small countries usually align themselves with a multilateral system which will provide funding and assist in the groundwork of starting forest projects and programmes. This is important since it enables these small countries to agree on a bigger conservation and protection plan together. Moreover, developing countries' perceptions on equity and fairness are substantively linked to the policy effectiveness through the lens of legitimacy of any given instrument. If the Southern Hemisphere (an important region in biodiversity-rich forest lands) does not see the policies as fair and coherent, this might undermine the effectiveness of these policies. This group relies mainly on its members, they count on each other always in environmental conferences and it is a powerful bargaining group when it comes to uniform negotiations. This minimises the risk that the developed countries can coerce the developing countries in bilateral agreements, offering them sub-optimal negotiating outcomes.⁸⁷² For the smaller developing countries under this group, unity is strength and they want to bargain all policies under the United Nation environmental frameworks.

However, the developed countries would opt for a system that allows them a great deal of flexibility and reduces binding obligations. Two scholars⁸⁷³ state that developing countries are resorting to a fragmentation system so that they remain in control, and they can pick and choose the programmes which they want to ratify. Fragmentation also allows developed countries to opt for programmes and mechanisms that serve their interests, for example in the form of forum

⁸⁷¹ Reinstein R A, 'A Possible Way Forward on Climate Change', (2004) 9 (3), *Mitigation and Adaptation Strategies for Global Change*, 245–309, pages 250.

⁸⁷² Benvenisti E and George W, 'The Empire's New Clothes: Political Economy and the Fragmentation of International Law', (2007) 60 (2), *Stanford Law Review*, 595–632, page 626.

⁸⁷³ Ibid.

shopping or to seek new trade alliances.⁸⁷⁴ To counter fragmentation, many of these environmental topics and challenges should be discussed under one roof, but with different experts working on different synergies.⁸⁷⁵ This would allow many diplomats to view the environment as one goal of sustainable development and also ensure that forest challenges would be better integrated with the climate, biodiversity and trade regimes to a greater extent.

The development of the forest law regime has been mainly due to the issues of biodiversity loss, mitigation of climate change, mitigation of desertification, and the timber and wood industries. This has been the problem in the forest regime that its genesis has been mainly from a compartmentalisation of issues that have recognised the importance of forests owing to their respective fields and regimes. On the bottom, it has been the issue of different concepts being used for forest protection projects and programmes. To begin with, the CBD had a definition of biodiversity resources in its Articles 1 and 2, in these Articles forests are seen as a source for biological resources and the concepts put forward to avoid further degradation and deforestation is sustainable development, but lastly the instrument settles with Sustainable Forest Management (SFM).

In addition to this, the UNFCCC has focused its attention on mitigating climate change with the REDD, REDD+ and the Kyoto Protocol. Its main ideology spans from carbon sinks, reservoirs and storages to be maintained for the mitigation of climate change. This has been extended to reducing carbon emissions in the Paris Agreement. Basing on this, the analysis is that old trees will have to be cut down, because their carbon uptake is limited and slow. It is also an issue to reforestation and afforestation mainly due to the reason that human handpicked trees are not natural and this lowers the biodiversity of trees and species that are in these forests. This ideology of the climate change frameworks' view on forest protection is repugnant of the very essence and nature of natural forests. A secondary issue is that new trees in an old forest can be also invasive species. These are some of the fragmentation problems caused by the climate change and the biodiversity regime.

Since these treaties have created these issues already, there is a problem of enforcement, mainly who has the final say of these two bodies of law (climate change and biodiversity laws), since there is no provision for co-operation between the two entities. There are also overlaps in

⁸⁷⁴ See also Raustiala K and David V, 'The Regime Complex for Plant Genetic Resources', (2004) 58 (2), *International Organization*, page 277–309.

⁸⁷⁵ See note 870, page 31-2.

different institutions that have been imposed by the CBD and UNFCCC. The different regimes (whether in climate change or biodiversity) have created a mirage that forests are protected. The Parties to these agreements have felt that forests are being protected, and forests are a topic of discussion during many COPs.

The climate and biodiversity regime are larger bodies of rules intertwined into a web of policies and institutions. Some of these rules or principles within the instruments are shared together and some are not.⁸⁷⁶ Fragmentation reduces the chances of dispute avoidance and stabilisation of international relations.⁸⁷⁷ This also reduces credibility, reliability and authority, which means fragmentation, can be used by developed countries to take advantage of developing countries.⁸⁷⁸ These States have the powers to opt for mechanisms that best serve their best interests.⁸⁷⁹ Finally, fragmentation can lead to prioritisation of certain fields over others, for example the climate change and biodiversity regimes have received substantially more attention than the forest regime.⁸⁸⁰

Although, the UNFCCC is cognizant of the CBD and recognise the value of its obligations, the CBD does not mention any climate change impacts to biodiversity or measures that have to be taken. This can be because the UNFCCC is more recent than the CBD after so much scientific research and discoveries. Thus, this can deem the CBD insufficient to also protect biodiversity in the climate change era. These issues also extent to forest protection in that there is no single plan that has been put in place for climate change impacts and adaptation in forest areas by the CBD or UNFCCC. In the Kyoto Protocol under Article 12, the CDM fails on forest protection. The concerns are that it allows for projects that can result in large scale destructive,

⁸⁷⁶ Harro van Asselt, Sindico F and Mehling A M, 'Global Climate Change and the Fragmentation of International Law,' (2008) 30 (4), *Law & Policy*, 423-449, page 424.

⁸⁷⁷ Hafner G, 'Risks Ensuing from Fragmentation of International Law', (2000), *Official Records of the General Assembly, Fifty-fifth session, Supplement No. 10 (A/55/10, 2000)*, Annex, 326–354, page 341.

⁸⁷⁸ See Pierre-Marie D, 'The Danger of Fragmentation or Unification of the International Legal System and the International Court of Justice', (1999), 31, *New York University Journal of International Law and Politics*, page 791–807. Also see, Benedict, 'Is the Proliferation of International Courts and Tribunals a Systemic Problem?', (1999) 31, *New York University Journal of International Law and Politics*, page 679–96. See also Benvenisti E and Down W G, 'The Empire's New Clothes: Political Economy and the Fragmentation of International Law', (2007) 60, *Stanford Law Review*, 595–632, page 595.

⁸⁷⁹ See note 877.

⁸⁸⁰ Craven M, 'Unity, Diversity and the Fragmentation of International Law', (2003) 14, *Finnish Yearbook of International Law*, 3–34, page 5. International Law Commission (ILC), *Fragmentation of International Law: Difficulties Arising from the Diversification and Expansion of International Law, Report of the Study Group of the International Law Commission*. A/CN.4/L.682 (13 April, 2006). Geneva: ILC, page 493. See website on https://legal.un.org/ilc/documentation/english/a_cn4_l682.pdf. Accessed on March 6, 2020.

monoculture forest plantations, use of invasive species and GMO tree seeds,⁸⁸¹ and also the lack of protection for existing old-growth forests.

Further, the decisions on EIA on particular projects that might cause a significant damage to forests and the rules to deal with socio-economic issues are left to the Parties to decide.⁸⁸² This scenario makes the CDM projects ambiguous as Parties are not given clear and precise terms.⁸⁸³ These decisions also do not need to be aligned and consistent with national sustainable development plans. At the 9th COP in Milan 2003, the Parties tried to address this by agreeing on modalities and various procedures for CDM forest projects.⁸⁸⁴ However, issues regarding forest protection and carbon sinks in the Kyoto Protocol seem to have driven the fragmentation of the two instruments.

Furthermore, a scholar⁸⁸⁵ states that the roots and increase in fragmentation has been because of the deformalisation of international law. This deformalisation makes issue-specific substantive and also procedural rules, mainly due to the environmental standard law-making process, this has not resulted in developing behaviour standards.⁸⁸⁶ In addition, forest governance is now a deformalisation system - this is noticed by the compartmentalisation of laws and the delegation of law-making authorities from the well-known traditional international law actors (namely the States). These powers are now passed to international organisations which are MEAs secretaries and the COPs. This has created a cycle whereby the international forest laws are increasingly detailed and seem to be clustered by their vary topics. This has resulted in the proliferation of soft laws such as the Non-Legally Binding Principles and the Forest Principles from the CBD, thus eroding treaty legitimacy.⁸⁸⁷

⁸⁸¹ Schwartz J, 'Whose Woods These Are I Think I Know': How Kyoto May Change Who Controls Biodiversity', (2006) 14, *New York University Environmental Law Journal*, 421–80, page 421-2.

⁸⁸² Sagemüller I, 'Forest Sinks under the United Nations Framework Convention on Climate Change and the Kyoto Protocol: Opportunity or Risk for Biodiversity?', (2006) 31, *Columbia Journal of Environmental Law*, 189–242, page 221.

⁸⁸³ UNFCCC, (2004) *Decision 19/CP.9, Modalities and Procedures for Afforestation and Reforestation Project Activities under the Clean Development Mechanism in the First Commitment Period of the Kyoto Protocol* (30 March) FCCC/CP/2003/6/Add.2. Milan. See website on https://cdm.unfccc.int/Reference/Documents/dec19_CP9/English/decisions_18_19_CP.9.pdf. Accessed February 01, 2020.

⁸⁸⁴ Ibid.

⁸⁸⁵ See note 854, page 78.

⁸⁸⁶ See note 869, page 457.

⁸⁸⁷ See note 854.

Moreover, deformalisation can create substantive and administrative divisions and challenges on the role of international laws amongst countries and can disturb the overarching unity.⁸⁸⁸ This also creates problems on coherence and the legitimacy of forest laws as a whole. That is to say fragmentation challenges the traditional view and sense of the UN and State-driven policies, and also raises questions about the normative legitimacy.⁸⁸⁹ This fragmented system not only challenges the best of international forest lawyers, but also domestic civil services and the members of the many civil societies that work in the forest sector.

The issue of ineffectiveness of MEAs is exacerbated by the lack of solid international law-making and enforcement structures of these environmental instruments.⁸⁹⁰ The individual international environmental law institutions are weak and currently disjointed.⁸⁹¹ The most well-known communication in the MEAs is via the secretariats. These MEAs secretariats are usually small offices with limited resources and have a modest influence on the decisions and plans of the COPs who make the primary decisions. Consequently, fragmentation and weak institutions has resulted in unintentional outsourcing of many international environmental disputes. Thus, communication and co-operation by the secretariats is only important if it gets to the State Parties and influence the COP decision-making processes. Due to institutional fragmentation, the role of the secretariats is under-utilized; there is a need for co-ordination and collaboration among MEA secretariats, and this would overcome institutional gaps.

The forest regime has resulted in the international regime complexity. This is as a result of the presence of many instruments that are now nested, clustered, overlapping and parallel with each other, but all claiming to recognise forest protection with no hierarchical order. This has meant that forest deals which are meant to be resolved by diplomats have become a bit harder to agree.⁸⁹² The international regime complexity added with the new twist of implementation of politics has increased fragmentation and reduced the clarity of legal obligations. This has

⁸⁸⁸ Koskenniemi M and Leino P, 'Fragmentation of International Law? Postmodern Anxieties', (2002) 15, *Leiden Journal of International Law*, 553–79, page 555.

⁸⁸⁹ Ibid, page 557. Also, see Prost M, Kingsley P, and Clark K P, 'Unity, Diversity and the Fragmentation of International Law: How Much Does the Multiplication of International Organizations Really Matter?', (2006) 5, *Chinese Journal of International Law*, 341–70, page 342.

⁸⁹⁰ See note 869, page 461.

⁸⁹¹ Bruch C and Pendergrass J, 'Type II Partnerships, International Law and the Global Commons', (2003) 15, *Georgetown International Environmental Law Review*, 855–86, page 876.

⁸⁹² Alter J K and Meunier S, 'Banana Splits: Nested and Competing Regimes in the Transatlantic Banana Trade Dispute', (2006) 13 (3), *Journal of European Public Policy*, 362-382, pages 365-77.

been caused by the overlapping sets of regulations and the jurisdictions governing environmental issues.⁸⁹³

In addition, international regime complexity enables forum shopping, strategic inconsistency and regime shifting. This is mainly because it causes cross institutional political strategies. International regime complexity has made it harder to locate institutions which are responsible for which issue and this has undermined accountability and has facilitated non-compliance, regime shifting and withdrawal from environmental conferences. Thus, international regime complexity has created competition amongst institutions. This has created turf wars and a failure to co-ordinate forest protection efforts.

In the same vein, forum shopping allows the shopper to strategically select the exact venue which can be used to gain a favourable interim decision on a specific and particular problem. In regime shifting, actors might use forum shopping, strategic inconsistency or many other strategies to try and redefine the political context and also reshape the rules within the system. Furthermore, this causes strategic inconsistency, it is when the actor or actors intentionally create contradictory rules in parallel with the original so as to create or widen their latitude when choosing which rules to observe, follow or interpret. As a result of the fragmentation in forest governance, States and other resourceful parties can now lead other States further astray more due to the current lack of agreement on a forest instrument.

These issues epitomise the very nature of international environmental law, with treaties that set out to solve issue-specific problems. This is fragmentation normalised with a specific issue treaty to solve environmental problems.⁸⁹⁴ In the climate change regime, ‘solving the climate change challenge will depend on how one defines the problem in the first place. Any proposed solution will thus be influenced by one’s value judgement, actors promoting diverging values and ideologies are likely to advocate different responses to the climate change problem’.⁸⁹⁵ ‘The use of international law to solve the forest issues, thus underscore the fault lines in international law impede the efforts to address a nominally environmental issue that does not

⁸⁹³ Alter J K and Meunier S, ‘The Politics of International Regime Complexity’, in Roberta Buffett Center for International and Comparative Studies, (2008), *Working Paper No. 07-03 Forthcoming in Perspectives on Politics*, page 9.

⁸⁹⁴ Boyd W, ‘Climate change, fragmentation, and the challenges of global environmental law: Elements of a Post-Copenhagen Assemblage’, (2010) 32 (2), *University of Pennsylvania Journal of International Law*, page 457.

⁸⁹⁵ Van Asselt H, ‘Chapter 13 Managing the fragmentation of international climate law’, (2013) 21, *IUS Gentium*, page 330.

just intersect, but intertwined with, other areas of international law, both beyond and within international law'.⁸⁹⁶ A fragmented system does not provide the tools necessary to address either the causes or consequences of forest protection.

Furthermore, the compartmentalisation is now a defined and normalised character of international law; framework has been defined like this, and this is because international environmental law remains issue specific. The nature of international law fragmentation continues to compound efforts to reduce deforestation. This challenge requires co-operation and integration at an international scale, but also responding to the intrinsic challenge of how forest protection is interwoven with other inseparable forms of international laws. The issue of forest protection is more complex, because of how forest functions are viewed and valued by different States. The issue also requires more complex solutions than only looking at specific instrument regimes.

The current forest regime revolves around the international law, however it is extensive and multi-faceted. It has multilevel and multi-scalar systems which include efforts from many different instruments, numerous lateral agreements have been made to bring together different actors from regional collaborators, public and private partnerships to transnational partnerships and many more.⁸⁹⁷ That means that the forest governance system involves 'multiple public and private organisations at multiple scales', these act and also interact as a joint and collective system with benefits and costs.⁸⁹⁸

However, addressing deforestation will require improved communication and collaboration amongst the international institutions and the development of new institutional partnerships within and around specific issue areas. Such initiatives also require also a broadening of the thinking about forest policies due to its evolving nature.⁸⁹⁹ Efforts must be made to improve coherency across the forest systems, including the formal and informal legal systems, also the involvement of public and private forest actors. Thus, greater efforts should be focused on exploring institutional and systemic interactions.

⁸⁹⁶ Carlane C, 'International treaty fragmentation and climate change', in Farber D A, Faure M and Peeters M (eds), *Climate Change Law*, (2016) 1, *Elgar Encyclopedia of Environmental Law*, 261-272, page 266.

⁸⁹⁷ Van Asselt H, *The fragmentation of global climate governance: Consequences and Management of regime interactions*, (Edward Elgar, 2014), page 257.

⁸⁹⁸ Ostrom E, 'Nested externalities and polycentric institutions: Must we wait for global solutions to climate change before taking action at other scales?', (2012) 49 (2), *Economic Theory*, page 353.

⁸⁹⁹ Van Asselt H and Zelli F, 'Connect the dots: Managing the fragmentation of global climate governance', (2013), 16 (2), *Environmental Economics and Policy Studies*, page 137.

Nevertheless, certain theories and concepts have been established to reduce fragmentation or study the issue further, these are “global governance architectures”⁹⁰⁰, “institutional complexes”⁹⁰¹ and “regime complexes”⁹⁰². This is meant to analyse the laws that influence the public, private and international domain of activities. These concepts revolve around broadening the analytic campus from the forest regime in isolation to a larger governance system. Governance account for the ways in which laws influence and are influenced by international, public and private activities. In the case of forests, the understanding and improvement of forest governance is important for harmonizing efforts to reduce deforestation with an international instrument. The groups in UNFCCC and the CBD which are concerned with financing, enforcement and technology transfer should function effectively as they are the institutional architectures of forest governance.⁹⁰³ Actions to reduce deforestation should be effectively integrated in the instruments to international agendas and regional institutions.⁹⁰⁴

Due to this nature of fragmentation, the definition and concept of SFM has become misleading. Several NGOs have made arguments that SFM should not be referenced in the REDD+. This has raised two schools of thought, namely one which believes that SFM in broad definition includes the use by the local community and conservation, whilst the other believes that SFM only refers to the application of forest conservation, protection and management practices for maintaining and sustaining the carbon stocks for the future.⁹⁰⁵

In 2009, the FAO noted the lack of understanding in the common use of the concept of SFM and stated that this was confusing the debate on the eligibility of the REDD+ activities. The fragmentation of definitions in these various instruments means that they are applied selectively and inconsistently in the international arena. This allows countries to choose the definition that is more suited to them according to their development stage. Furthermore, it allows the abuse of indigenous rights by States since they can assume the SFM concept

⁹⁰⁰ See note 897.

⁹⁰¹ Oberthur S and Stokke OS, ‘Conclusions: Decentralized interplay, management in an evolving interinstitutional order’, in Oberthur S and Stokke OS (eds), *Managing institutional complexity: Regime Interplay and Global environmental change*, (MIT Press 2011), 313-41, page 313-4.

⁹⁰² Abbot K, ‘The transnational regime complex for climate change’, (2012) 30 (4), *Environment & Planning C: Government & Policy*, 571-590, page 571.

⁹⁰³ Abbot K and Sindal D, ‘International regulation without international government: Improving IO performance through orchestration’, (2010) 5 (3), *Review of International Organizations*, 315-344, page 315.

⁹⁰⁴ Carlene C, ‘Delinking international environmental law and climate change’, (2014) 4, *Michigan Journal of Environmental and Administrative Law*, 1-60, pages 17-8 and 31-2.

⁹⁰⁵ M.K. (Marty) Luckert and T. Williamson, ‘Should sustained yield be part of sustainable forest management?’, (35) (2005), *Canadian Journal of Forest Research*, 356–364, page 356-8.

definition that does not allow for sustainable use of forest products. Importantly, the definition of concepts in environmental law might start a mere literature debate but this can have weighted political implications for forest areas as selective forest values can be prioritised in the forest governance regime.

The issue of fragmentation is compounded by the transboundary nature of forest areas. Since different States understand different use of the concept of SFM, this allows for different tools for protection and the different recognition of different values. This can cause ecological disturbances since there is no uniform application of forest protection tools and concepts. In one State there can be a totally different focus on forest protection than that of the neighbouring State, although they share the same forest. Furthermore, fragmentation has caused an inherent problem in the forest governance system with duplication, conflicting linkages and interagency competition reducing the effectiveness of the system altogether. A further problem emanates from these issues, namely that the forest regime now has gaps.

Since the NLBI for all types of forests was never ratified by many Parties there was need to recognise the SFM concept and definition that it had explained. However, due to the many instruments the concept was never discussed since the conversation moved to the next issue. This can be interpreted as countries failing to understand on the importance of forests or thinking that there is/was no need for an instrument. By looking at the statistical data already given in the preceding Chapters, there is clearly a need for a binding instrument. Many seem to be overlooking or are finding it hard to discuss this topic since they see it as reducing their development potential. In addition, there is a need for a binding instrument for forest protection to resolve the institutional conflicts, interpret some of the already given forest protection principles and concepts, and finally ensure co-ordination and co-operation of all these instruments in order to effectively protect forests.⁹⁰⁶

A scholar⁹⁰⁷ has stated that the climate change and biodiversity regime are “polycentric”. ‘This means that they exist in multiple public and private organisations at multiple scales jointly affecting the collective benefits and costs.’⁹⁰⁸ She states that there is a need for incorporating interdependent and independent action by using a diverse set of actors at all multiple levels of

⁹⁰⁶ See Feja Lesniewska, ‘An introductory guide to international forest and forest related legal materials that shape forest ethics and practice’, *International Institute for Environment and Development*, (2005), page 5-39.

⁹⁰⁷ See note 898, page 355.

⁹⁰⁸ *Ibid.*

government. Another scholar⁹⁰⁹ proposed a polycentric approach to deforestation in the context of climate change, stating that ‘entrenched indirect drivers of deforestation, such as poverty or inadequate governance capacity - pose a profound difficulty for efforts to improve forest management through international regulation, including REDD+ programmes.’⁹¹⁰ These indirect drivers suggest the need for an approach that is not simply international, in the traditional sense of agreements between States, but also polycentric in its distribution of governance authority, because addressing them requires context-specific reforms that will depend on sufficient local buy-in to facilitate significant economic or political changes.’⁹¹¹

The institutions of forest governance are now overlapping. The effectiveness of any institution does not depend on its own functionality but also on the interactions which it has with others’ performances. The institutions in forest governance seem to overlap unintentionally and cause confusion. There is need to know the issue-specific regimes’ interaction, the consequences and what can be done to improve this for example harmonisation of the concepts and institutions.⁹¹² There has been much study about regime interplays to discover and solve how regimes can help each other and work effectively. Interplay management in environmental law now focuses on the governance of regime and institutional integration at international level.

The problem with forest protection is not straight forward and cannot be solved independently, solutions will definitely need to be broad in the international environmental law regime. The fragmentation of international laws has increased the challenges in forest governance and inhibited any agreement of and in deals on various scales. Efforts in forest protection should be to improve understanding of the institutions, collaboration and finding ways for integration and co-operation within the international and regional institutions.

5. Treaty and Donor Fatigue

It must be stated that there is no international central governance in international environmental law. The key elements to environmental governance are the treaties and the secretariats. These include the UN bodies, intergovernmental organisations and the World Bank; this also includes

⁹⁰⁹ Long A, ‘REDD+, Adaptation, and Sustainable Forest Management: Toward effective polycentric global forest governance’, (2013) 6, *Tropical Conservation Science – Special Issue*, 384-408, page 384.

⁹¹⁰ Owley J and Takacs D, ‘Flexible conservation in uncertain times’, in Craig K R and Miller R S (eds), *Contemporary Issues in Climate Change Law and Policy: Essays inspired by the IPCC*, (2016), 65-102, page 80.

⁹¹¹ See note 909, page 384.

⁹¹² Pekdemir C, ‘On the regulatory potential of regional organic standards: Towards harmonization, equivalence, and trade?’, (2018) 50, *Global Environmental Change*, 289–302, page 289.

a set of financial mechanisms to pay for various components. Treaty fatigue causes States to become reluctant to making many instruments or debating the issues in the environmental sector.⁹¹³

Since 1994 there have been many international instruments that have been agreed upon, usually in the specific topics of climate change, genetic modified organisms, trade, desertification, threatened species and biodiversity conservation. From the Rio Conference which was coined ‘the Earth’s Summit’, there have been Conferences which have resulted in COP decisions, programmes and actions being adopted by different environmental instrument Parties.

A scholar explains that, from the Earth’s Summit to the UN’s World Summit on Sustainable Development in Johannesburg, there was a drop in numbers of attendance and the mood had also become dull and less energetic than the first conferences.⁹¹⁴ This she points out to have been caused by treaty and donor fatigue. Firstly, treaty fatigue is a scenario whereby the instruments become saturated to a level that the governance of the field becomes blocked or can be said as ‘fatigue or tired’. It is an exhaustive scenario whereby everything seems to be covered and to have been explained on paper. However, the practicality of using the instruments is difficult, divisive, dissension, confusing and divided. This causes governments to back away from this exhaustion. Secondly, donor fatigue has become self-explanatory, it is a scenario when the donors seem to have exhausted their funds or they want no more to do with the projects and programmes since they think everything that can be done to solve this particular issue has been attempted and possibilities have been exhausted.

For a start, treaty fatigue in environmental law can be best understood by the actions that have been taken by the United States of America, in isolation of any obligation to environmental instruments. Many environmental instruments have been promulgated in the 10 years from 1994 to 2004. This is the same period during which the international community agreed on the CBD, the UNCCD and the UNFCCC. These instruments coupled with the CITES are a major breakthrough in international environmental laws.

In the same array, the CBD in itself has different COPs and secretariats, than that of the UNCCD and the UNFCCC. These instruments have different scientific authority research

⁹¹³ Sandrine Maljean-Dubois, Vanessa Richard. Mechanisms for monitoring and implementation of international environmental protection agreements. 2004. See website on <https://halshs.archives-ouvertes.fr/halshs-00426417/document>. Accessed on 16 January 2021.

⁹¹⁴ VanDeveer D S, ‘Green Fatigue’, (2003), *Wilson Quarterly*, 55-59, pages 55-6.

grounds and a few different funding projects and programmes. In many governments, the experts and diplomats who attend the COPs of the CBD, UNCCD and UNFCCC are usually the same people and the same ministries. These people have grown tired of the conferences and the lack of binding obligations in these instruments that can cause movements on the international environmental arena. The instruments have become many, but are not cooperating with one another. This fragmentation of these instruments has become a major factor in the general consensus of making an international instrument for forest protection, because Parties do not see the need for it with regard to the current environmental framework and governance. The international instruments have divided forests into functions: ⁻⁹¹⁵

- Forests are important for carbon storage and sequestration (climate change mitigation and adaptation).
- Forests are important for soil protection and reducing desertification (desertification).
- Forests are important biodiversity habitats and play a part in biodiversity protection (sustainable use of biodiversity).
- Forests are important because they provide the commodities timber and wood (commercial trade of timber).

Importantly, in forest governance a ministerial researcher will have to attend the CBD, CITES, UNCCD and UNFCCC to understand exactly what's transpiring in this field. The instruments are many and they have not said much about forest protection, however there is a need to attend since you will have to understand fully how this will work or affect forest protection and the relating fields. It is simply a huge task to ask any developing country to gather the full details explained in these instruments in COPs. Today, this has made governments oppose instruments and their goals, but they do less to strengthen their national environmental governance to some extent.

In the same vein, developing countries usually attend these conferences with a small group of researchers, usually limited in numbers and expertise. This group has grown tired of these negotiations, as they take time and are highly demanding. Coupled with this, developing countries have blocked further negotiations stating that they already have the necessary instruments, what is lacking is funding and implementation - this has hampered new research and important solutions.

⁹¹⁵ See website on <http://www.fao.org/3/y1237e/y1237e03.htm>. Accessed on 16 January 2021.

The result is that talks on forest protection have simply died an infant death. This has caused the international community to ignore any result published by the IPCC⁹¹⁶ since there is no movement and improvement. Countries now criticise many of the environmental scientific findings by the IPCC in their countries and refusing to attend COPs. The USA President has refused to accommodate climate change science, as President Trump is now denying the facts even exist.⁹¹⁷ The developing countries are now agreeing to the idea, so that they do not oppose the developed countries which could prevent economic investments and projects in their countries.⁹¹⁸

Moreover, the forest principles explained by these different instruments have caused reluctance in projects and have created an impression that forests are protected by these principles whereas forests are actually not protected. The CBD, UNCCD and UNFCCC have saturated the field to the point that there is no movement and flow of new concepts and ideas. Thus it has become difficult to agree on a new instrument since the reluctant diplomats do not want to discuss the issue further. These instruments which are seen as ‘big agreements’, have made it difficult for countries to agree on a forest instrument.

Furthermore, in these instruments everything seems to be highly unco-ordinated, disjointed and disintegrated into concepts, rules, projects and principles.⁹¹⁹ From one instrument to the other, there is a written section of an Article about forests, nothing more is done, and the issue is left unresolved. This has been demonstrated in the UNCCD, CBD and the UNFCCC. This situation has also extended to Article 5 of the Paris Agreement under the UNFCCC. A scholar explains that this highly fragmented institutional design and the mixture of a pre-existing bag of instruments makes the agreement of a forest instrument highly problematic.⁹²⁰

⁹¹⁶ See Summary for Policy-makers, IPCC, in October 2018 report on website <https://www.ipcc.ch/sr15/>. Accessed on 12 December, 2018.

⁹¹⁷ The New York Times, Coral Davenport and Mark Landler, “Trump Administration Hardens Its Attack on Climate Science”, May 27, 2019. See website on <https://www.nytimes.com/2019/05/27/us/politics/trump-climate-science.html>. Accessed on February 24, 2020.

⁹¹⁸ Robert Hunter Wade, ‘What Strategies Are Viable for Developing Countries Today? The World Trade Organization and the Shrinking of ‘Development Space’, Vol 10, No 4, Tenth Anniversary Issue (Nov 2003), *Review of International Political Economy*, 621-644, page 621-4.

⁹¹⁹ See notes 657 and 839.

⁹²⁰ Howlett M, ‘Overcoming the challenges to integration: Embracing complexity in forest policy design through multi-level governance’, in Rayner J, Buck A and Katila P (eds), *Embracing complexity: Meeting the challenges of international forest governance*. A global assessment report. Prepared by the Global Forest Expert Panel on the International Forest Regime IUFRO World Series, (2010), Volume 28. Vienna, 1-172, pages 93.

In addition, international environmental laws remain complex and unco-ordinated, being a patchwork of weak laws, underfunded institutions and understaffed committees and institutions.⁹²¹ The Southern and Northern Hemisphere division has also made the work of the international instruments cumbersome. There are huge trading wars and bureaucratic infighting between many States which has reduced attendance at conferences. These issues are now frustrating new efforts to protect forests.

Forest governance has also been affected by donor fatigue. The foreign fund assistance for forest projects and programmes has declined to provide more funds, recent talks during the 2018 COPs in Poland has been to pour funds into the Green Climate Fund.⁹²² The developed countries have refused to fund more developing countries projects to which they had pledged during previous international conferences. Even the well-known forest regions in Central Africa, and the Brazilian and Colombian Amazon have continued to receive fewer funds than that which the donor countries had pledged. This has reduced their conservation efforts and administrative capacities in protecting forests. Consequently, this has resulted in developed countries complaining that they are tired of funding projects which are not yielding any results, whilst developing countries have complained that they are tired of receiving these funds which are usually filled with cumbersome, bureaucratic and paternalistic conditions from the donors.⁹²³

Furthermore, the developed countries in the global North have more influence on environmental agreements than the developing countries in the Southern Hemisphere. The negotiators from the Southern Hemisphere with a greater area of forest lands have fewer resources to prepare for negotiations, they mainly lack staff support, access to scientific information and negotiating experience to prepare for environmental conferences and negotiations. The number of treaties and conferences is a huge problem to many developing countries; some States in the Southern Hemisphere do not even attend these summits. In many developing countries, their environmental ministries are strained by international travel which can be the largest expense in their budget, thus they do not have much say on the issue of forest protection.

⁹²¹ See note 914, page 56.

⁹²² COP24 is the informal name for the 24th Conference of the Parties to the United Nations Framework Convention on Climate Change. See website on <https://www.cop24.gov.pl/>. Accessed on 20 December 2018.

⁹²³ See note 914, page 57.

There are other issues during the 2018 COP 24 in Poland that have stolen the thunder from the environmental issues facing the planet. The United Kingdom is currently engaging in Article 50, so that it leaves the European Union. China, Canada and the United States are at each other's throats due to trade and tariff wars. There are also other political side issues that have diverted attention and taken the space in these negotiations such as terrorism and the issue of migration. For a forest protection instrument to be agreed upon the conditions need to be right and conducive to negotiations and resolutions.

6. Political and Historical Burdens

There are historical and geopolitics burdens that hamper the making of any international instrument. When international instruments are negotiated many different rival countries have to come together, face to face and agree on a deal. There are many issues that can cause these rivalries such as historical wars, religion, trade, colonization, invasion and broken diplomatic relations.⁹²⁴ Today, in international environmental law States have to deal with many of these issues for a deal to be agreed upon. Even if this is true, that has not prevented States from agreeing on so many instruments.

Particularly, the issue of sovereignty and colonization is brought up in almost every conference when Southern Hemisphere countries are involved. This is due to the control of natural resources and protection of their natural resources. The delicate matter has been that developed countries have used almost all of their natural resources and developed their countries, whilst developing countries are still left with most of their natural resources but still are underdeveloped. Thus, they want to use their natural resources to develop their countries (the President Bolsonaro of Brazil is increasing developmental efforts in the Amazon forest).

Importantly, the matter of the use of international environmental laws is problematic in developing countries.⁹²⁵ For many years, these countries were colonized without a say on how to protect or use their resources, and just when they thought they had gained independence and power, they are told to obey laws made up by the same countries that colonized them. This vindicates the Southern Hemisphere notion of political freedom and sovereignty.

⁹²⁴ Rafiqul Islam M, 'History of the North- South Divide in international law: Colonial Discourses, sovereignty and self-determination', in Alam S *et al*, (eds), *International Environmental law and the Global South*, Cambridge University Press (NY), (2015), 1-20, page 6.

⁹²⁵ Lipschutz Ronnie D, 'Why Is There No International Forestry Law? An Examination of International Forestry Regulation, both Public and Private', (2000) 19 (1), *UCLA Journal of Environmental Law and Policy*, 153-179, page 153.

There are many issues that emanate from historical burdens, namely that it causes the already made instruments to be ineffective; it becomes problematic to negotiate another instrument as is happening in forest protection; it reduces the number of Parties that attend conferences and then actually ratify the instrument; and lastly, due to this huge divide there is now a lack of finance and funding in global forest programmes. In the same array, the developed countries have stated that the developing countries always use their money for what it was never intended for, citing huge corruption and fraud in the global funds that have been created for forest programmes and projects.⁹²⁶

The developed countries have built roads and buildings, whilst in the developing countries due to their history, much of their countries have had small parts developed which were occupied by their colonizers. Developed countries like US, Canada and Australia are also vast and have exploited resources. Ironically, the way in which the developing countries develop and use their natural resources has been questioned by the developed countries since they want to reduce deforestation and carbon emissions.⁹²⁷ However, the developing countries are seeking investments to develop their countries.⁹²⁸

In addition, developing countries seek to mine minerals, build towns and roads in these forest lands or simply harvest the forests for timber.⁹²⁹ This would give them more revenue to develop their countries or buy much needed technology. It seems a noble cause, but the developing countries have pointed that they are now sovereign States that are able to govern themselves without any interference and are no longer under colonial rule.⁹³⁰

Furthermore, this means that the States are now divided with the Northern Hemisphere as a club of developed countries, whilst the Southern Hemisphere is a club of developing countries.⁹³¹ Every international deal that has to be negotiated will thus have to deal with this division and bring about the much needed balance between these two clubs.⁹³² Developing

⁹²⁶ As seen on 174.

⁹²⁷ Pogge T, 'Recognized and Violated by International Law: The Human Rights of the Global Poor', (2005) 18, *Leiden Journal of International Law*, 717–745, page 735.

⁹²⁸ Shackleton E S and Hebinck P, 'Through the 'Thick and Thin' of farming on the Wild Coast, South Africa', (2018) 61, *Journal of Rural Studies*, 277–289, page 277-8.

⁹²⁹ Andersson J and Lazuka V, 'Long-term drivers of taxation in francophone West Africa 1893–2010', (2019) 114, *World Development*, 294–313, page 294-5.

⁹³⁰ Samaddar R, 'The futures of the colonised', (2004) 36, *Futures*, 655–669, page 656.

⁹³¹ See Ved P Nanda, 'Global environmental governance and the South', in Alam S *et al*, (eds), *International Environmental law and the Global South*, Cambridge University Press (NY), (2015), pages 130-151.

⁹³² Cullet P, 'Differential Treatment in international law: Towards a new paradigm of inter-state relations', (1999) 10 (3), *European Journal of International Law*, 549-582, pages 549-51.

countries are starting to state that international environmental law has been overstretched into the realm of politics and is now intruding on the sovereignty of their countries.⁹³³ Conversely, the developed countries have also stated the developing countries are only milking their funds and finances, with nothing being done to protect natural forests on the ground. This has become a huge problem that has hampered the development of international environmental programmes and projects.⁹³⁴

In the same vein, developing countries have complained that forest protection laws carry traits of the colonial exploitation laws previously promulgated in their countries, only now through international environmental terms.⁹³⁵ The newly elected Brazilian President (as one State) has also stated that they will never agree on a deal that seeks to globalize the protection of the Amazon forest and that the forest governance of the Amazon solely depends on the Brazilian parliament and people.⁹³⁶ Forest fires have been raging in the Brazilian Amazon with President Bolsonaro refusing to take further action to prevent and stop these fires. An international push meant that money had to be raised to prevent and stop these forest fires. However, the President still maintained that it was Brazil's natural resource and only it can determine what is fit.⁹³⁷

Furthermore, the protection of natural forests causes problems in developing countries, especially before national elections. The use of natural resources in developing countries is used to 'butter-up' the voting masses. Certain groups or tribes are given huge tracks of forest lands as a form of buying back their votes before presidential elections. The political elites use this as a form of handing out gifts to retain power. However, without these funds or resources, the liberation parties in formerly colonized countries are seen as corrupt and as having failed to kick-start economies. This issue is primarily why developing countries are refusing to bind themselves to many environmental instruments. The protection of forests will reduce the idea

⁹³³ Berman S P, 'From International Law to Law and Globalization', (2005) 43, *Columbia Journal of Transnational Law*, 485-556, page 551.

⁹³⁴ Bodansky D, Brunne J and Hey E, 'International Environmental Law: Mapping the field', in Bodansky D, Brunne J and Hey E (eds), (2007), *The Oxford handbook of International Environmental Law*, Oxford University Press, 1-25, page 2.

⁹³⁵ Ibid.

⁹³⁶ Darby M, 'Brazil elects Bolsonaro, who has threatened Amazon and global climate efforts'. Published on 29/10/2018, 9:43am. See website on <http://www.climatechangenews.com/2018/10/29/brazil-elects-bolsonaro-threatened-amazon-global-climate-efforts/>. Accessed on 20 December 2018. See also Giddens A, *Runaway world: How globalization is reshaping our lives*, (2000), pages 24–37. Also Sarat A and Scheingold A S, 'State Transformation, Globalization, and the Possibilities of Cause Lawyering: An Introduction', in Sarat A and Scheingold A S (eds), 'Cause lawyering and the state in a global era', (2001) 3, page 4. See also Sunder M, 'Piercing the Veil', (2003) 112, *Yale Law Journal*, 1399-1472, page 1459.

⁹³⁷ See note on 215.

of governments handing out land to many different groups and tribes for buying back elections.⁹³⁸

In the same light, the governments of developing countries would want to use these forests so that they can cover up their failing traits. Recently the USA has questioned why developing countries are always seeking food and monetary aid. This is due to the fact that the developing countries' governments misuse their national budgets to purchase vehicles and residential houses for their cabinet ministers. Thus developing countries are now overharvesting many of their forest resources so that they can feed and fill the shortfalls in their national budgets and garner corporate taxes to increase the basic standards in their country. There is also a paradigm shift in American politics, recently the 'America First', it is more difficult now to agree on certain financial incentives and agreement on some international instruments than it was under the previous government of President Barack Obama.

In addition, international environmental laws especially have clashed with deep rooted ideologies of customary and cultural norms.⁹³⁹ For example, the issue of ownership of land after independence in the Central African Republic (CAR) rainforest has been a problem.⁹⁴⁰ This also has cultural problems in the right to access and use of resources. Thus, many Southern Hemisphere countries see international environmental law instruments as a means to control and a form of neo-colonialism to control their use of natural forests. These fear projections are based on reduced political sovereignty or independence and lack of economic development.⁹⁴¹ In addition, many national forest laws have been designed to cater for the trade of wood and timber after independence of developing countries.⁹⁴² There was never any talk of forests as a provider for environmental services or at a multidimensional system.⁹⁴³

⁹³⁸ Kalabamu T F, 'Land tenure reforms and persistence of land conflicts in Sub-Saharan Africa – The case of Botswana', (2019) 81, *Land Use Policy*, 337–345, page 337.

⁹³⁹ Bennett M B and van Sittert L, 'Historicising perceptions and the national management framework for invasive alien plants in South Africa', (2019) 229, *Journal of Environmental Management*, 174–181, page 174-5.

⁹⁴⁰ Homewood M K, 'Policy, environment and development in African rangelands', (2004) 7, *Environmental Science & Policy*, 125-143, page 128.

⁹⁴¹ Irland C L, "'The big trees were kings": Challenges for global response to climate change and tropical forest loss', (2010) 28, *UCLA Journal of Environmental Law & Policy*, 387-433, page 390.

⁹⁴² Levit K J, 'The Dynamics of International Trade Finance Regulation: The Arrangement on Officially Supported Export Credits', (2004) 45, *Harvard International Law Journal*, 65- 182, page 65.

⁹⁴³ Lipschutz, Ronnie D, 'Why Is There No International Forestry Law? An Examination of International Forestry Regulation, both Public and Private', (2000) 19 (1), *UCLA Journal of Environmental Law and Policy*, 153-179, page 153.

The issue of historical burdens has compounded the state sovereignty issue, and these issues have resulted in many problems in the making of the forest instrument. International law usually gives the premise for each States' sovereignty.⁹⁴⁴ The well-known concept of sovereignty is mostly used by decolonized States as a right of self-determination, because these countries wanted to reduce overexploitation of their resources by developed countries.

7. Sovereignty

International law states that States have power and authority to make national laws and domestic policies. That is, States can make their own trade, mining, agricultural and environmental policies on their own without any interference. They have a sovereign power to choose how they want to protect and use their resources.⁹⁴⁵ States have freedom from any external control over their use of their natural forests and forest resources.⁹⁴⁶ States can be said to have supreme political authority over the governance of their territory.⁹⁴⁷

Sovereignty connotes political authority, paramount control of the State's Constitution, public institutions and frame of government.⁹⁴⁸ That means the State has political independence and has sufficient political power. Thus, the State has the right and the powers to self-regulation in its national and international affairs without any foreign dictation.⁹⁴⁹ Importantly, political sovereignty is the self-determinate will of the people and by this they manifest their freedoms and that people have the right to elect a leader and government of their choice.⁹⁵⁰

However, European countries exhibit sovereign non-absoluteness. Many of their State powers are administered through the European Union (EU). The European Union has set directives and standards that each member needs to follow in their jurisdiction. Thus, the States in the EU can make their own law, but the standards, rules, directives and regulations are well determined

⁹⁴⁴ Charter of the United Nations and Statute of the International Court of Justice, San Francisco, (1945), Article 2, paragraph 4.

⁹⁴⁵ Trubeck M D, 'Where the Action Is: Critical Legal Studies and Empiricism', (1984) 36, *Stanford Law Review*, 575-622, page 604.

⁹⁴⁶ Alan S, 'Trade and the environment: Perspectives from the global South', in Alan S *et al*, (eds), *'International Environmental Law and the Global South'*, Cambridge University Press (NY), (2015), 297-316, page 299-300.

⁹⁴⁷ Alaam S *et al*, 'The environment and international society: Issues, concepts and context', *Routledge Handbook of International environmental law*, (2015), page 13-24, page 13-4.

⁹⁴⁸ Nell E K, 'A doctrine of contingent sovereignty', (2018), *Orbis*, 313-334, pages 314-6.

⁹⁴⁹ *Chisholm v Georgia*, 2 Dall. 455, 1 L. Ed. 440, See also *Union Bank v. Hill*, 3 Cold. (Tenn.) 325. See also *Moore v Shaw*, 17 Cal. 218, 79 Am. Dec. 123.

⁹⁵⁰ Osula A, 'Transborder access and territorial sovereignty', (2015) 31, *Computer Law & Security Review*, 719-735, page 722.

within the ambit of the EU. Today, this form of modern sovereignty disregards territory integrity and makes States co-operate on a regional scale on matters of environmental protection, trade and security.

A scholar⁹⁵¹ explains that the traditional concept of sovereignty means that the State has absolute and sole competence for law-making within its territory, and there is no agent or State above it. He further maintains that sovereignty is the supreme power in a State and cannot be restricted by any State or Constitution. However, he explains that sovereignty is bound by international law, as a result of international instruments and treaties or natural laws.

Other political philosophers⁹⁵² (1588-1679) went further by stating that sovereignty was absolute (above international agreements) and could not be bound by anything and could override any law.⁹⁵³ He also stated that all States were equal as States. A scholar⁹⁵⁴ (1632-1694) interjected this analogy by *Hobbes*, and stated that sovereignty was merely the supreme power of the State, but could be limited by constitutional restrictions. However, *Grotius* distinguishes the *ius gentium* and the *ius naturae* with concern to the international laws and international relations between States. According to him, the natural law is the primary source of all international laws. He concedes that natural law is supplemented by international law, with voluntary consent of States. Although he recognises that international law is independent of the valued will and consent of the States, he nevertheless sees it as binding to sovereign States.⁹⁵⁵

The fundamental problem which sovereignty has posed over the years is whether it can be limited by international environmental instruments.⁹⁵⁶ The divide has been mainly on national laws, interests, and co-operation. This has hampered efforts in forest protection due to the

⁹⁵¹ See Bodin J, *On Sovereignty: Four Chapters from the Six Books of the Commonwealth* (translated by Julian Franklin (1992)), page 1-45.

⁹⁵² Hobbes T, *Leviathan*, (Penguin Books, 1985), (1651), page 223, Chapter XVII. See also, E Vattel, *The law of nations or the principles of natural law: Applied to the conduct and to the affairs of nations and of sovereigns*, (translated by Oceana Publications, 1964), page 3. Vattel like Hobbes state that independence belong to man, they cannot be taken from him by force but only by consent. These men in their States make the laws as their policies.

⁹⁵³ Father Robert Araujo, 'Sovereignty, Human Rights, and Self-Determination: The Meaning of International Law', (2000) 24 (5), *Fordham International Law Journal*, 1477-1532, page 1487.

⁹⁵⁴ Pufendorf S, *Elementum jurisprudentialis universalis libri duo*, (Oceana Publications, 1964), page 57. For an English translation see Carr (ed), *The Political Writings of Samuel Pufendorf*, (1994) (translated by Michael J Seidler), page 230-235.

⁹⁵⁵ Perrez, *Cooperative Sovereignty from Independence to Interdependence in the Structure of International Environmental Law*, (2000) 13, page 34-35.

⁹⁵⁶ Samantha Besson, 'Sovereignty, International Law and Democracy', (2011) 22 (2), *The European Journal of International Law*, 373-387, page 373.

national and international interests in forest resources. Many developing countries in the Southern Hemisphere see forests as sources of income.⁹⁵⁷ This has resulted in these countries stating that they are sovereign countries that can make their own laws without any dictatorship and interference.⁹⁵⁸ Importantly, the most significant problem in forest protection has been whether forests should be classified as “common heritage of mankind” or as sovereign national resources.⁹⁵⁹ This has resulted in the spectacular failure by States to make a comprehensive international legal instrument on forests. The lack of agreement has resulted in the making of the Non-Legally Binding Instrument, about which the name says precisely everything.

This national sovereignty position has been reiterated by a scholar⁹⁶⁰, who states that a State has sweeping powers and rights to exercise authority over its own people, freely use its territory as it deems fit for the benefit of its populace, and no State can intrude in its territory and jurisdiction. Furthermore, every sovereign State has the right to jurisdiction immunity from foreign courts or planned use of its public property and also assets for it to discharge its public functions. Simply put, no State has a right or can tell another State what to do. This right also extends to the right to immunity over the use of its own resources in its jurisdiction and territory.

However, there are many problems caused by national sovereignty. A scholar⁹⁶¹ states that sovereignty gives rise to at least three dysfunctionalities. Firstly, it renders the external dimension of inconceivable international laws and a world state that is highly sympathetic. Secondly, sovereignty results in centralism, and not pluralism. Finally, national sovereignty is contrary to the notion of accountability.

Above has pointed out the main issues affecting forest protection with regards to sovereignty. By allowing countries to state their sovereignty above international standards for forest protection, this allows States to be less accountable to their carbon emission targets and mainly for forest protection. Brazil for example has deforested an extended amount of forest throughout the year 2018, but has asserted that it is just protecting its interests as its sovereignty

⁹⁵⁷ See Miles K, *The origins of international investment law: Empire, Environment and the State- Guarding of Capital*, Cambridge University Press, UK, (2013), page 78-100.

⁹⁵⁸ Childs P and Williams P, *An introduction to post-colonial theory*, New York, Routledge, (1997), page 17.

⁹⁵⁹ See Dimitrov S R, ‘Hostage to Norms: States, Institutions and Global Forest Politics’, (2005) 5 (45), *Global Environmental Politics*, page 1-24. (Discussing history of efforts to develop international legal instrument on forests).

⁹⁶⁰ Cassese, *International Law*, (2005), 1-558, pages 49-52.

⁹⁶¹ See Maritain J, *Man and the State*, Chicago: University of Chicago Press, (1951), pages 1-219.

at each time environmental agencies and the international community has alerted it to reduce forest degradation and deforestation.⁹⁶² Sovereignty also creates a state of hopelessness and allows other countries to follow suit. Simply nothing can be done to the Brazil Amazon without the State's co-operation.⁹⁶³ Even if there are international standards that have been promulgated on an international level it is extremely difficult to assess whether these countries will ever protect their forests.

The Westphalian sovereignty is given more emphasis since it is regarded as the modern concept adopted by many States. A scholar⁹⁶⁴ explains that the Westphalian sovereignty as an institutional arrangement for arranging and organising political life. It is based on the two principles of territoriality, exclusion and interference of external factors in national and domestic structures of authority. That is, it respects national integrity and territory, and is violated when external national factors can or influence national authority structures.⁹⁶⁵ It is a form of power in which all the independence of a State is politically derived from and combined with the rights and powers of stating and regulating its internal affairs without any foreign interference. These actions can be the making, application and execution of national laws. It is divided nationally into the judiciary, legislature and executive. This form of sovereignty is compromised immediately when a State ratifies an international instrument and is bound by the instrument's obligations.⁹⁶⁶

In addition, sovereignty is recognised by these three presumptions, namely firstly, States are obligated to international law and the instruments which they ratify; secondly, if a State signs and ratifies the international instruments, it has deemed a corporative entity and presumed to have direct effects on the State's legal system to the extent of enacting national laws; finally, political independence and territorial integrity can withstand the State's violation of international law and legal norms.⁹⁶⁷ Sovereignty also enables the States to freely choose their

⁹⁶² Hurowitz G, 'Here's what deforestation looks like in 2019 – and what we can do about it'. See websites on <http://www.mightyearth.org/heres-what-deforestation-looks-like-in-2019-and-what-we-can-do-about-it/>, <https://news.mongabay.com/2019/12/2019-the-year-rainforests-burned/>, <https://journals.openedition.org/cybergeogeo/27484>. Accessed on February 24, 2020.

⁹⁶³ See also section 283.

⁹⁶⁴ Krasner, 'Sovereignty: Organized hypocrisy', in Steiner & Alston (eds), *International Human Rights in Context: Law, Politics, Morals*, (2000), pages 575-577.

⁹⁶⁵ Koskenniemi M, 'Empire and international law: The real Spanish contribution', (2011), 61, *University of Toronto Law Journal*, 1-36, page 18.

⁹⁶⁶ See Angie A, *Imperialism, sovereignty and the making of international law*, Cambridge: Cambridge University Press, United Kingdom, (2005), page 10-30.

⁹⁶⁷ Roth R B, 'The enduring significance of state sovereignty', (2004) 56, *Florida Law Review*, 1017- 1049, page 1026.

foreign affairs and international instruments which they want to ratify.⁹⁶⁸ Thus, sovereignty hampers the establishment of international legal norms and the implementation of these existing norms.⁹⁶⁹

Furthermore, a scholar⁹⁷⁰ points out that the theory of sovereignty is not in accordance with the modern era of international law and community. The theory is no longer in accordance with the positive development of international laws amid the surge in climate changes and nuclear weapons. He states that the theory must be totally discarded or modified so that it is set up for international realities through a revitalisation process. He urges States to engage in the theories of the common interest and common good, so that States can sacrifice their domestic and individual interests as well as their sovereignty in favour of the theories of common interest and common good. This will be important in adjusting sovereignty for the sake of the development and implementation of international law.

The Charter of the United Nations⁹⁷¹ confirms this by stating that States' sovereignty is limited by international law. In the same light, Article 2 (2) reads: - States should fulfil their international obligations in good faith. It also combines the theory of sovereignty with the principles that States should respect the international law they ratify. The Charter confirms that international law is supreme only when ratified, and international law sets the theory of sovereignty aside, and thus is a limited concept.

Friedmann⁹⁷² states that there should be a movement from the system of international law of *co-existence* to a new dawn of *co-operation*. This, he states, will be from negative codes to positive codes of international law. This is already happening in areas where sovereignty once shielded international law. These areas are human rights, biodiversity conservation and climate change. This has been a further intrusion of international law into matters previously regarded as outside intervention, thus reducing the traditional sovereignty of States.

⁹⁶⁸ Jackson H J, 'Sovereignty – Modern: A New Approach to an Outdated Concept', (2003) 97, *The American Journal of International Law*, 782-802, page 786.

⁹⁶⁹ See note 967.

⁹⁷⁰ Nincic D, *The Problem of Sovereignty in the Charter and in the Practice of the United Nations*, (1970), 1-358, page 11. See also Waters M, 'Mediating Norms and Identity: The Role of Transnational Judicial Dialogue in Creating and Enforcing International Law', (2005) 93 (2), *Georgetown Law Journal*, 487-574, page 487.

⁹⁷¹ See note 944.

⁹⁷² Friedmann, *The Changing Structure of International Law*, (1964), page 62.

Importantly, although traditional sovereignty focuses solely on independence, the theory of absolute sovereignty is now questionable. States have come to realise that there is a need for co-operation in order to achieve international community goals.⁹⁷³ Due to the nature of international negotiations, these days States no longer work independent of each other. They are now dependent on their regional blocks, continents or associated allies.

Although many States believe in the traditional sense of sovereignty, they also believe that sovereignty should be limited in terms of international trade, security and climate change.⁹⁷⁴ These issues require transnational assistance and co-operation as they affect everyone without bias on the territory.⁹⁷⁵ This has also been alluded to in the focus on globalisation and a collective international society. More and more countries are starting to feel the urge to unite against climate change and offer help where it is needed.⁹⁷⁶ There is simply no State that can exist alone, although each has its fundamental independency.

Due to the nature of State sovereignty, there are now two systems of natural forests ownership. The first is the regalian system whereby the owner pays the government a form of tax or royalty; whilst through the domanial system, the State retains control of the natural forests with monarchiac laws dominating ownership of the forest resources.⁹⁷⁷ The domanial system means that a government can use the natural resources as it deems fit and is the sole owner of the natural resources.⁹⁷⁸ This form of system is mainly used in countries that achieved their independence after colonisation.⁹⁷⁹ To be exact, most developing countries use and prefer this form of system as it guides their natural resources deemed vulnerable to colonisers with an appetite for their natural resources. Thus, in Sub-Saharan Africa, sovereignty does not denote the actual control over resources, but the power to legalise contractual obligations to users in the sector for logging and other uses.

⁹⁷³ Martin Martinez, *National Sovereignty and International Organizations*, (1996), page 63-64.

⁹⁷⁴ Sands P *et al*, *Principles of international environmental law*, (2012), 3rd Edition, Cambridge University Press, UK, pages 190 and 200.

⁹⁷⁵ See Bodley, 'Weakening the principle of sovereignty in international law: The international tribunal for the former Yugoslavia', (1993), *New York University Journal of International Law and Politics*, 419-422. On 422-425 she states that sovereignty has been weakened by MEAs and the United Nations. She also goes further in stating that the international tribunals that are being set up allow for better cooperation amongst States.

⁹⁷⁶ See note 968, page 801.

⁹⁷⁷ Egede H, 'African 'social ordering' grundnorms and the development of an African *lex petrolea*?', *Denning Law Journal*, (2016) 28, Special Issue, 138-165, page 141.

⁹⁷⁸ Hepburn S, *Mining and Energy Law*, (Cambridge University Press, 2015), 1-454, page 11.

⁹⁷⁹ Laryea E, 'Contractual Arrangements for Resource Investment', in Botchway F (ed), *Natural Resource Investment and African Development*, (Edward Elgar, 2011), 1-544, pages 108-116.

In view of the foregoing, the effects of sovereignty on forest protection have been dire. In Rio De Janeiro, Brazil in 1992, more than 170 States gathered for the negotiations on CBD, amongst this was the Agreement on Forest Principles. It was not only the agreement of the principles that was of value, but also the location, kilometres away from the Brazil Amazon. There had been intensive pre-negotiations held in the 1980s and early 1990s about the future of forest protection. This was then the issue of the burning of the Amazon and the illegal logging of the forest lands in South America.

However, the host Brazil expressed strong opposition to any internationalisation of its natural resources. It vowed that it was a sovereign nation and it could use its resources as it deemed fit. This was a huge blow to the negotiations, with most developing countries refusing to agree on a deal to protect forests and being led by the host, Brazil. The developed countries had no chance, but rather to agree on the Non-Legally Binding Forest Principles. Of which, up until now no one seems to recognise that they are actually available since they are not in use. In short, efforts to make forest protection a global problem has not translated into workable and effective solutions, because deforestation is not recognised as a unitary issue that deserves global governance protection efforts.⁹⁸⁰

Furthermore, national forests and the political economy have historically focused on conserving and managing forests for the timber extraction industry rather than the maintenance of environmental services and ecological advantages.⁹⁸¹ This has obstructed progress towards an international forest instrument. For many developing countries, the defence has always been sovereignty. It is rather the economic gain that these countries seek from selling timber and forest resources, than their proclamation of sovereignty and independency.

However, all these presumptions are rebuttable. Today, international law imposes a duty on States to control and maintain their activities and their projects in their jurisdictions, so as to reduce and limit harmful effects. States are not allowed in their jurisdictions to permit activities that may significantly affect other States outside their territory. In certain situations, where the trace of the harm can be identified, this principle of international law can be effectively used

⁹⁸⁰ Davenport S D, 'An Alternative Explanation for the Failure of the UNCED Forest Negotiations', (2005) 5, *Global Environmental Politics*, 105-130, page 106.

⁹⁸¹ Lipschutz D R, 'Why is There No International Forestry Law? An Examination of International Forestry Regulation, Both Public and Private', (2001) 19, *UCLA Journal of Environmental Law and Policy*, page 153.

and can lead to the prevention of further harm. In other situations, such as a rise in emissions from deforestation, it is impossible to trace since this can be caused by many States.

To counter such acts, the legal approach must take another form to prevent such acts, and thus the responsibility of States must be defined in other means and ways.⁹⁸² This is the case with forest protection - although international instruments imposes duties to conserve forests, there is no clear legal binding status under international environmental law. Instead, protection of forests remains in the hands and is subject to State sovereignty to the extent that international instruments are dependent on the extent of the national measures which States deem fit.

Furthermore, international law affects forest protection, by providing the required legal basis for State sovereignty. The implications are that exclusive jurisdiction and control of State activities in their territorial limits becomes essential for the prospect of coping with deforestation and significant degradation. This means that with every action taken to solve common problems, each State has to make national measures which are needed in its territory and for its citizens. Thus, international efforts are reduced to co-ordination of different national programmes and efforts.

Put simply, sovereignty means that States can decide not to be part of any international and co-operative agreement to solve forest protection issues.⁹⁸³ Although consent adds to the legitimacy of international environmental law, this requirement has affected and added hurdles for the development of forest protection laws. Sovereignty also adds to the division of legal systems which hinders forest protection since these are mostly transboundary. In some regions, there has been innovation on international law for example public participation in the transboundary decision-making process without the discrimination of any State in a region possible.

In addition, sovereignty impacts on the much needed co-operation on environmental issues. In transboundary contexts, sovereignty affects legal systems and the flexibility of co-operation in the essential field of public law. This also creates difficulties in different administrations or members of the public on how to act across State boundaries. Furthermore, the legal structure also affects and complicates the relationship or control of multi-trans-national corporations

⁹⁸² Reisman M W, 'Sovereignty and Human Rights in Contemporary International Law', (1990) 84, *The American Journal of International Law*, 866-876, page 872.

⁹⁸³ Engel D & Munger F, 'Rights, Remembrance, and the Reconciliation of Difference', (1996) 30, *Law & Society Review*, page 7.

who are in the timber business. The legal structures of different States will always make it difficult to hold these transnational companies and corporations accountable across State borders. The shortcoming of international environmental law in promoting the effectiveness of control of transnational co-operation complicates forest protection.⁹⁸⁴

Nevertheless, sustainable development (if implemented well) can change the modern governance of States, precisely the way in which they exercise their sovereignty.⁹⁸⁵ Socio-environmental aspects are changing governments into governance of forests and globalising the issue of climate change and biodiversity loss.⁹⁸⁶ Sustainable development encompasses several well-known spatial scales from international, regional and national levels, and stimulates hybrid forms of governance, from private to public partnerships.⁹⁸⁷ Sustainable development is also important as a strategic political tool to those local stakeholders who are not involved in the policy-making process.

Although States have their rights to pursue their own environmental policies within their jurisdiction, they also have the duty and responsibility that activities in their boundaries do not cause damage to the environment outside their boundaries.⁹⁸⁸ This duty of good neighborliness can be traced back in the Roman law maxim of *sic utere tuo ut alienum non laedas* (use your own property so as not to injure that of another).⁹⁸⁹ This has been quoted by the International Court of Justice (ICJ) in the *Corfu Channel*⁹⁹⁰ case in that the ICJ recognized that the State has obligations not to allow its territory to be used for the violation of another State's rights or degrading another State's environment. Thus, international law is also based on the fact that there should be peaceful enjoyment of the environment and preserving life.⁹⁹¹ Thus, reducing

⁹⁸⁴ Berman S P, 'From International Law to Law and Globalization', (2005) 43, *Columbia Journal of Transnational Law*, 485-556, page 489.

⁹⁸⁵ de Sartre A X and Taravella R, 'National sovereignty vs. sustainable development lessons from the narrative on the internationalization of the Brazilian Amazon', (2009) 28, *Political Geography*, 406-415, page 406.

⁹⁸⁶ Karkkainen C B, 'Post-Sovereign Environmental Governance', (2004) 4 (1), *Global Environmental Politics*, 72-96, page 72.

⁹⁸⁷ Koh H H, 'Why Do Nations Obey International Law?', (1997) 106, *The Yale Law Journal*, 2599-2659, page 2639.

⁹⁸⁸ Declaration of the United Nations Conference on the Human Environment, Principle 21, June 16, 1972.

⁹⁸⁹ Soroos M, 'The Evolution of Global Regulation of Atmospheric Pollution', (1991) 19, *Policy Studies Journal*, 115-125, page 115.

⁹⁹⁰ *Corfu Channel (Albania v United Kingdom)*, 1949, ICJ, 22, (April 9).

⁹⁹¹ Postiglione A, 'A More Efficient International Law on the Environment and Setting Up an International Court for the Environment Within the United Nations', (1990) 20, *Environmental Law*, page 324. The principle of peaceful enjoyment is articulated in the Preamble and Article I of the United Nations Charter. The principle of peaceful enjoyment has been restated in numerous other treaties including, for example, the Preamble of the Vienna Convention on the Law of Treaties, May 23, 1969, (entered into force January 27, 1980).

carbon emissions and the detrimental impact climate change can be said to be recognized as it will decrease the enjoyment and preservation of life.

In the same vein, a scholar⁹⁹² points out that there is an interaction of the environment and human activity, thus there is a need to surrender sovereignty for the common good and for humanity. The ICJ in the *Barcelona Traction*⁹⁹³ case stated that all States have an obligation to one another as a whole; they have obligations to prevent significant degradation of the environment. However, States are realizing that deforestation has domestic and international problems.⁹⁹⁴ Thus, there is power in numbers by joining other States in projects and equally distributing the financial burdens.⁹⁹⁵

International integration and co-operation has become more institutionalised in the past decade. Today, decision-making in environmental institutions is well characterized by clustering, overlapping and parallel institutions.⁹⁹⁶ This problem has made it difficult for forest governance to work and understand within a single institution.⁹⁹⁷ Importantly, the issue of regime complexity is now recognized in the forest governance regime. This is whereby a system is overlapping and with non-hierarchical institutions in forest governance.⁹⁹⁸ There are distinct agreements that have been agreed upon in this regime, which are of different fora and actors.⁹⁹⁹

The effectiveness of forest institutions does not depend solely on their own performance, but on interactions with other arrangements and institutions with overlapping jurisdiction. Thus, forest institutions depend on interactions with other institutions and how they can respond to solve a given problem. These efforts help map out how issue-specific regimes can interact and the consequences thereof.

⁹⁹² Sands P, 'The Environment, Community and International Law', (1989) 30, *Harvard International Law Journal*, pages 399 and 405.

⁹⁹³ *Barcelona Traction, Light and Power Company, Limited* (Belgium v Spain), 1970, ICJ, 4, (February 5), at 32.

⁹⁹⁴ Hooker A, 'The International Law of Forests', (1991) 34, *Natural Resources Journal*, 823-877, page 835.

⁹⁹⁵ Koskenniemi M, 'The Fate of Public International Law: Between Technique and Politics', (2007) (70) (1), *The Modern Law Review*, 1-30, page 4.

⁹⁹⁶ Alter J K and Meunier S, 'The Politics of International Regime Complexity', (2009) 7 (1), *Perspectives on Politics*, 13-24, page 13-4.

⁹⁹⁷ *Ibid*, page 14.

⁹⁹⁸ Keohane O R and Victor G D, 'The Regime Complex for Climate Change', *APSA 2010 Annual Meeting Paper*, 1-28, page 3.

⁹⁹⁹ Underdal A, 'Explaining Compliance and Defection: *Three Models*', (1998) 4 (1), *European Journal of International Relations*, 5-30, page 6-7.

The forest regime is characterised by complex organisations, actors, processes and private governance mechanisms. The number of forest related instruments reflects the multiple dimensional and functions of natural forests; it also reveals the lack of consensus internationally on how natural forests should be protected. Today, international environmental politics has moved away from the issue-specific to a regime complex, thus forest governance is known and has become categorized as a regime complex. The regime is characterized by overlapping and non-hierarchical institutions.¹⁰⁰⁰

In forest governance there is a need to find co-operative policy solutions to reduce cross functional, transboundary and political boundary challenges. The international community has been looking for solutions to reduce fragmentation of environmental policies and programmes. Yet experience shows that the international community struggles in solving international institutions and politics; these failed efforts in the post-Kyoto Agreement have highlighted this problem. The issue of transnational boundaries further stresses the issues faced in State sovereignty and historical burdens. Due to these multi-level implications of transnational ideologies, this is likely to affect how the forests are protected internationally.¹⁰⁰¹

However, before making a new instrument, there is a need to delve into the existing institutions and knowledge to find the problems that have caused this stagnation in forest governance.¹⁰⁰²

There is a need to understand the difficulties being faced by the different MEAs and properties of the existing environmental governance structures. There is a need to increase knowledge in those negotiations on what is required by institutions to withstand these challenges. Furthermore, the work of the Collaborative Partnership on Forests (CPF) needs to be followed carefully to gather how co-ordination in a densely organized regime complex can be resolved.

They are numerous barriers to the current instruments that relate to forests that have inhibited the effective implementation of environmental instruments. These issues can hamper the effectiveness of instruments due to political, social, cultural and economic problematic

¹⁰⁰⁰ See Reischl G, 'Designing institutions for governing planetary boundaries — Lessons from global forest governance', (2012) 81, *Ecological Economics*, page 33–40. See also, Rakhyun E Kim and Brendan Mackey, 'International environmental law as a complex adaptive system', (2014) 14, *International Environmental Agreements: Politics, Law and Economics*, page 5–24.

¹⁰⁰¹ Dearing A J *et al*, 'Safe and just operating spaces for regional social-ecological systems', (2014) 28, *Global Environmental Change*, 227-238, pages 227-8.

¹⁰⁰² Rockstrom *et al*, 'Planetary boundaries: Exploring the safe operating space for humanity', (2009) 14 (2), *Ecology and Society*, 32-65, page 34.

realities.¹⁰⁰³ Importantly, the lack of political will in developing States has hampered forest protection. There has been a lack of will when it comes to negotiations. Mostly, political will requires accountability, initiative and leadership, of which these countries seem to lack when it comes to forest protection and the process of negotiating the forest instrument. This is also caused by competing priorities in developing countries. There is a desire to have surplus grain and meat, and mine as much mineral to sell and develop their economies, thus environmental priorities are usually not on their top prerequisite agenda. Furthermore, an additional challenge can be a lack of sufficient funds to allocate for environmental commitments when other pressing issues such as lack of clean water and dependable electricity need to be addressed.

These barriers have hampered forest protection as developing countries do not want any negotiations to be done and completed on the forest instrument since they have gained from corruption and want to protect themselves from colonial laws; whilst developed countries (due to the nature of the forest governance complexities) argue on what exactly needs to be put in the instrument. The developing countries have argued for years now that there is no need for such an instrument. Due to treaty and donor fatigue and fragmentation of forest concepts and principles, many countries have questioned the nature and the context of concepts, principles and programmes that will be in this instrument.

8. Alternatives to foster a Global Goal and Agenda

8.1 The use of the Global Commons to foster a global goal

Customary international law plays an important role in international law. It is accepted that some principles that are not in international instruments are still agreed and recognised on the international stage. These principles maintain a level of rationality in state actions. The rules are a form of an agreement to partake in actions that are of serious or significant concern to all mankind and other species. Customary principles play a significant part in finding a framework for global issues. The notion is that given that international communities have failed in negotiating a binding instrument, some customary law principle can aid forest protection. Global commons and the common concern of mankind are of importance to this particular discussion.

¹⁰⁰³ See Alam S, 'Collective indigenous rights and the environment', in *Routledge Handbook of international environmental law*, (2015), pages 585-602.

The issue of forest protection is complicated because it is unknown and misunderstood as what concepts can be used at an international level to encompass forests into an effective international environmental regime. This is problematic since the definitions of forests are being used for different concepts on different continents, regions and states. If there is recognition that forests provide various services and sustain different ecosystems, then we can look at different concepts to try to protect forests in regional and national territories. This is problematic because one of the burdens limiting an international instrument is permanent sovereignty. It is important that we recognise forest protection as a global goal that involves pluralistic actors and alternatives for an effective solution to reduce forest degradation and deforestation.

The most important aspect of forest protection is reconciling the needs of developing countries to grow their economies with the importance of conserving and protecting the global commons. This makes the topic of global commons and its requirement for international cooperation extremely challenging. However, the 2015 Paris Agreement to combat climate change has made an unquestionable breakthrough which gives hope. Firstly, there was affirmation of climate change as a “common concern of mankind”. Secondly, there was commitment by the 195 countries to mitigate the effects of climate change.

A huge shift, although most of the agreement is fundamentally voluntary in that it relies on the transparency and coordinating processes; and methodologies toward measuring outcomes, all of which obligations were left in the hands of the countries to determine their national commitments and how these could be achieved. This thesis assesses however that it is unlikely the agreement will yield the GHG reductions which are necessary to starve off global warming below the threshold of two degrees Celsius which is the warming target.

It is important given the growing influence of climate change debates, that more states are starting to decide what exactly role they can play in the international arena. There are several concepts that can be used as alternatives to try and protect forests. It must be noted that the protection of forests will not be solved by one particular incentive, but will need multiple efforts on national, regional and international landscapes. Deforestation is mainly caused by multinational companies and commercial farmers, with indigenous and forest communities playing important roles in reducing and preventing deforestation. Thus in order to reduce deforestation, there is a need to cooperate and coordinate efforts from a developed to a

developing country perspective. The global North and South must play their different but coordinated efforts to reduce deforestation and forest degradation.

Forests can be seen as global commons since they provide ecosystem services that are crucial for indigenous and forest communities. They also play a part in the stabilisation of climate change which is required by all species of fauna and flora. This vital function of carbon sequestration is of importance in this age of climate change mitigation and adaptation debates. The deforestation of forests has enormous economic and social costs at the local, national and global levels. This can result in flooding and loss of fertile soil for agriculture. The result is the increase in poverty, conflicts and state security issues, which can result in forced migration. Forests perform a vital role in providing a safety net for indigenous and forest communities. Their importance is vital for the air we breathe and the water we drink. They play a major role and functions that other ecosystems can not perform.

There are realistic potentials to strengthen global governance alignment with the international forest governance regime; the promotion of the private sector; building strong regulatory frameworks; bilateral action on the ground; and the honest role of forest indigenous leaders. This international forest governance will encompass all the initiatives under international policies and processes. This will include state-led, market-based and civil society's initiatives that will involve state and non-state actors from all multiple governance levels that aim to implement objectives, actions and behavioural changes to protect forests. There are also actions that are outside the forest sector that are important to foster coordination, integration and coherence from all the sectors that affect forests; and actors to protect the global commons function and the sustainable development of forests.

Global commons are international, supranational and global natural resource domains which generate common-pool resources needed by species for survival.¹⁰⁰⁴ They are resources that are required for our survival, thrive and prosperity on this planet. These resources include the climate, biodiversity and forests, which are already overused. The global commons represent a management approach that is based on systems thinking, transforming and self-organising which brings out the best in all people. This is already a foundation for our plan of action for the planet. Global commons are the things we all share (approximately 7.8 billion people) to

¹⁰⁰⁴ Freeman P C, 'The Fragile Global Commons in a World in Transition', Vol. 36 No. 1, *SAIS Review* (Winter–Spring 2016), page 17-28, page 17.

thrive and prosper. Overuse of these resources jeopardises the stability of our planet that has been supporting our specie and civilization for more over 10, 000 years.

The global commons is built upon the heritage of Grotius's idea of *mare liberum*, namely preserving for freedom of access for the benefit of all. It has been replaced by new international cooperation and protection of natural resources beyond these limits of national or regional jurisdiction. The commons have served as a laboratory for analysing and testing new legal principles and rights. The state of affairs regarding natural resources is well-known by the label 'the tragedy of the global commons' because of the state and threats facing these natural areas and the inchoate global regimes that govern them.

It has represented a notion that some of the global commons or their elements are beneficial to all humanity and species, and thus should not be unilaterally exploited by states but rather be used under international agreements for the benefit of humanity. These principles represents a growing concept under law, politics and philosophy by the young generation that there is moral duty to protect our planet for the benefit of all species. There are disputes whether this principle connotes to communal ownership or joint management of global commons.

Forests can be seen as global commons due to the functions which they perform such as regulating the climate system and ecological functions for our planet and species. The thesis is of the position that forests perform functions that intrinsically connect air, climate systems, soil, water cycles, geographical structures, biodiversity systems and special ecosystems. From that view point, shared transboundary resources and certain 'national' resources such as forests can be viewed as global commons. It is important that the carbon dioxide balance is maintained, and forests play a huge part in carbon storage and sequestration. However, it must be stated that forests face an increasing threat from activities that cause deforestation. There is thus a need to look for alternatives to protect forests as a global common.

Forests are global resources that perform functions beyond the limits of national jurisdiction. Negotiations should continue in order to lobby developing countries with huge forest lands. The developed countries should seek to play their part by reducing food from the developing countries that results in deforestation and contestation of human rights. The developed countries should reduce the amount of meat which they consume from developing countries and other seeds such as beans and nuts. These items cause more deforestation in the developing countries due to demand from North and profits in the South. The increase of border security in the global North to reduce timber arriving in their countries that is not certified will be a

welcome initiative to reduce illegal logging and trade of timber. Such companies have interests in the developed countries and efforts to reduce their finance and other economic efforts should start in the global North.

In the developing countries issues of property rights must be solved to protect forests. The recognition and uplifting of human rights in these countries will reduce deforestation by availing a new way to appreciating forest communities. It is problematic lands are deforested which are publicly and privately owned. The governments need to be encouraged to recognise the property rights of forest communities. Furthermore, they should also uplift these communities by giving them agriculture incentives to reduce deforestation as this is a global goal to reduce poverty in these communities. There is a need to build human rights and environmental synergies to protect indigenous communities and the environment.

Forests must be protected to stop private or public appropriation of land, area and ecosystems that can cause significant damage to biodiversity and the climate system. The ownership of forests must be communal and joint in order to manage the area in a more sustainable way. The international community must play an important role in protecting threatened groups and indigenous communities. Such recognition will give them more power and recognition to fight for their rights, whilst also putting pressure on military and dictatorial governments in the global South. In addition developing governments can implement policies that are focused on sustainable development and protected areas to reduce deforestation. This will reduce the international market for wood and increase the monitoring capacity of developed countries.

Forest ownership can strengthen the status of the forests and reduce deforestation. If developing countries respect and recognise property rights, this surely will help in reducing deforestation and forest degradation. However, respect of property rights will depend on the political will of the government. The international community can help these communities by putting pressure on governments, reducing foreign aid and individual sanctions on the more senior members of the country's government. Other developed countries have gone as far as banning certain governments or individuals coming into their countries or regions.

Everyone can play a part in this global initiative by raising awareness, demonstrating and protesting to governments such that they reduce trade and engagements with governments that violate human and property rights. This peaceful push of negotiations is being used in several countries and guidelines have been put on the table indicating that when such governments fulfil those guidelines, they will be verified and welcomed back to the international trading

negotiating table or receive economic financial stimulus into their economy. Economic sanctions to developing countries seem to be the most known route to force these countries to abide by and comply with international human rights and environmental laws. Since there is always a burden of permanent sovereignty, such tactical acumen incentives are going to be important in the future at a global level.

The countries that have forests must protect these areas for the benefit of everyone since global commons are considered to belong to all humanity and species. This means there should be urgency to protect, cooperate, coordinate and enforce shared management. All the states must support and actively participate in the protection of forests since there is a global public good that can be enhanced. Furthermore, forests should be protected for future generations.

Forests regulate air, water and climate systems thus protecting them means that our lives are much easier without a much complicated climate system or limited resources. There is a need to establish an international environmental regime that respects the rights of all humanity and such a moratorium regime should be enforceable.

The governance of the commons is a specific aspect of environmental governance. Stewardship of the global commons needs an efficient and effective global governance. There should be no single decision-making unit (especially countries such as Brazil and Colombia should be monitored) with exclusive title to these natural resources as they belong to everyone and their functions serve everyone.

“In a similar vein, the Sri Lankan judge and vice president of the International Court of Justice (ICJ), Christopher Weeramantry, referred on several occasions to traditional systems of resource use and communal forms of property in ancient civilisations as well as religions. Especially in his landmark separate opinion in the Danube Dam case (1997) between Hungary and Slovakia, he took the view that the first principle of modern international environmental law is the ‘principle of trusteeship of earth resources’. He continued: As modern international environmental law develops, it can, with profit to itself, take account of the perspectives and principles of traditional systems, not merely in a general way, but with reference to specific principles, concepts, and aspirational standards. Since flora and fauna have a niche in the ecological system, they must be expressly protected.¹⁰⁰⁵ There is duty lying on all members of

¹⁰⁰⁵ Case Concerning the Gabčíkovo-Nagymaros Project (Hungary/Slovakia), Judgment (‘Danube Dam case’), 25 September 1997. ICJ Reports 1997, 88. Weeramantry, 110 and 115.

the community to preserve the integrity and purity of the environment".¹⁰⁰⁶ Thus, it is an idea that natural forests can be used for the service of the people and all species.

The role of the state in terms of territory and environment needs to be reconfigured as well as the role of international law. International law must not look only for the interests of the state, but beyond their parochial concerns for the greater good or interests of humanity, species and planetary welfare. It needs to weigh beyond party interests within a closed confinement, but to the global concerns of humanity at large. Such tensions of permanent sovereignty and forest protection must be resolved and accommodated immediately and the international community should look for an alternative and a compromise. It is possible to extend the principle of global commons for the areas under national jurisdiction, such as ecologically vital areas such as all natural forests. It must be noted that the preservation and protection of the natural environment, with importance fauna and flora on our planet, biodiversity and the climate system are referred to as "*common concern of humankind*".¹⁰⁰⁷ The concept of "common concern" has strong international dimensions along the lines of the contemplation of the interests or needs of the future generations, in that it has important social value.¹⁰⁰⁸ Importantly, resources of interest or greater value to the welfare of the community of the nations, such as forests are included in the traditional global set of commons that have undoubtedly been inked to a common concern.

The implementation of the global commons responsibilities relates to the four key factors that have been identified as the cornerstone of the development agenda, namely social development, economic development, sustainability, peace and security. At the same time, our planet is faced with critical environmental challenges such as climate change, global warming and rapid environmental degradation. These trends are likely to worsen and negatively impact the commons' capacity to continue providing the ecosystem services for many species. The international community are in agreement that there is a need to conserve these natural resources for the development of our specie and has thus adopted several environmental instruments to govern global commons.

Nonetheless, there is a lack of effective supervisory mechanisms internationally. These mechanisms should be monitoring forest protection, this includes who logs trees, where does

¹⁰⁰⁶ Ibid.

¹⁰⁰⁷ Murillo J, 'Common Concern of Humankind and Its Implications in International Environmental Law', (2008) 5 *Macquarie J. Int'l & Comp. Env'tl. L.* page 133.

¹⁰⁰⁸ Ibid page 133-5.

the timber go and who monitors these contracts in developing countries.¹⁰⁰⁹ Furthermore, there is a need for standing international organisations in the forest protection regime (it is important to note the successes of the UNFF, FSC and FAO) but only a few have regulatory competences. However, most of these organisations lack effective supervisory mechanisms such as compliance, sanctions and incentives. It is therefore difficult to see their decisions being taken seriously by developing countries.

Importantly, forest protection has been hampered by the fragmented nature of the forest regime than the coherent approach to the supervision of forests. In addition, because forests are mainly seen as national resources, there is no international compulsory peaceful dispute settlement system. There was one which had been put forward under the Kyoto Protocol termed the Compliance Committee but since then there has been no improvement. Much of the effort must be put in negotiating with countries such as Brazil and Colombia with huge tracks of forest lands. Unfortunately at the international level, these negotiations and settlements are lacking. This lack of a coherent and compulsory international peaceful dispute settlement system demonstrates further the level of fragmentation and inchoate structure in the global forest regime.

The global commons are useful laboratories of fostering global cooperation and initiating certain new principles such as the precautionary principle, intergenerational equity, sustainable use of natural resources, and common but differentiated responsibilities. The effects of these principles have not fully crystalized in international environmental laws. The role of international environmental law has to be the fostering of innovative regulation as it take its various forms, such as declarations, strategies, treaties, protocols and international judicial decisions. Importantly, it is now recognised that the climate system is a common concern, the conversation should also represent natural forests since they play a vital part in regulating the climate system.

Nonetheless, many gaps and challenges remain. These frameworks which cover the global commons are complex and also fractured. The older agreements do not fully consider human activities on ecosystems and non-target species. There are many new activities that do not have

¹⁰⁰⁹ However, it should be noted that the World Heritage Convention is one of these monitoring powers. It is also difficult to recognise forests as natural heritage as it is the state that chooses its sites to be listed as a heritage site. This will well depend on the state's political willingness to allow its area to be recognised and protected under the World Heritage Convention. However, the listing of sites on the heritage list creates a form of initiative to fundraise and look for donations under the cultural and natural heritage banner.

detailed or explained international rules and standards with regard to forest protection. Developing countries face huge challenges in participating in expensive environmental impact assessments and monitoring of global commons. They often lack the sophisticated technology to carry out these environmental conservation activities. Growing military and regional economic alliances, access to global commons from trade, critical resources and security will be recommended. There is a need for a global governance regime (under the UN), which can ensure that the commons will be preserved for future generations.

Having an inclusive and equitable system of global governance and also governance of global commons can be a good way of incorporating a global partnership into a possible development agenda. This will enhance the participation of developing countries in many multilateral institutions, increasing their accountability and representativeness. There is a need for the establishment of UN-led monitoring and accountability mechanisms with a focus on the equitable growth, environmental sustainability, peace and security of developing countries.

There is a need to foster relationships with informal decision-making bodies such as G20, for consistent and predictable engagement with other established multilateral and regional institutions, increasing coordination and support for development. Governance targets should also be concrete, yet allowing political compromise and greater flexibility. Furthermore, integration of global governance targets and requirements within the development agenda (economic development, environmental sustainability, peace, security and social development) will support improved implementation and accountability.

In order to achieve forest protection all dimensions of sustainable development (sustainable economic growth, environmental protection and social inclusion) need to be more incorporated and integrated at a global level. The establishment of a more high-level political forum has become an essential step to mainstream sustainable development and the agendas of the United Nations system. At the same time, considerations for coordination for the principal forum should take forward steps towards cooperation, coherence and policy-making processes across the United Nations system. In an interdependent world, transparent and representative governance regime is critical to achieving sustainable development inclusively at economic, social and environmental levels.

There have been changes in the international order which is driven by the new market or economic actors, novel technologies and new tests that threaten human and environmental security, posing a risk to future generations and the planet shared by all. Yet, forests exist in

this current international system without any strong institution for governance. The foundations of forests as global commons are fragile. The conditions of good governance rest on the willingness of powerful states to uphold and enforce forest rules and protection programmes, and are followed by the degree to which these actors follow these prevailing norms. However, economic incentives can make a huge impact in forest protection. It is the economic drive by states that has had negative deforestation trends, thus economic incentives and programmes to reduce deforestation and degradation should be encouraged on the international arena. The international community has started to recognize these incentives especially under the New York Declaration on Forests.

In addition, the challenges of forest protection is the interconnectivity and complexity of forests. That is not only in the terms of natural resources and biodiversity which they contain and function, but the clear distinct diversity of actors who use and interact with these forests. It must be noted that indigenous communities are at the forefront of these actors, whether they play a minimal or important role as it is mostly their native lands that they are attached to and live on. The achievement of forest protection will depend on compliance, compromise, mutual inducement and parties' perceptions of the shared interests. The issue of deforestation is a concern because many negotiators want to regulate the behavior, but fail to address the economic distributionary issues.

Moreover, when it comes to forest lands, much of the land being cut down in the Brazil Amazon and African countries has been exploited by companies with connections to developed countries with the financial resources. These are countries with technological capabilities to exploit natural forests and have since enjoyed the privilege of access. In some cases, the food sold in developed countries comes from developing countries. Increasing populations mean that more forests are being cut down for agricultural land. These countries have to tend to their problems and feed their own children.

There are issues that need to be spoken about and solved on a global context. For example, lots of land is being lost in Southern Africa because of the tobacco industry. It is a luxury at this given time to continue cutting down forests for curing tobacco leaves and more land for planting tobacco plants. Such behaviour and attitudes in the developed countries need to change. It is this economic drive and ambition by states that has hampered forest protection around the world and the need for unsustainable excess goods.

Historically, developing countries have motivated for greater supervision over forests, including the pooling and distribution of revenues from the raw materials which they sold at a cheap prize. Developed countries are generally opposing such proposals. However, developing countries lack capacity to provide relevant and required information or accountability for such cooperation. Thus, their preferences rarely make traction against those of developed countries. Since the global commons concept has gained relevance, the idea has much appealed to developing countries from an equity perspective as they had hoped that this idea could guide their equitable utilisation over time.

However, the hope of forest protection under global commons lies on the logic of our interdependence as a specie and the openness for the future of global security and prosperity. This is a hallmark of the liberal international order that can be necessary for the preservation of forests. There is a need to build existing regimes so that they can be integrated better and more comprehensively, greater authority to establish rules and enforce rules, recognise scarcity and distributional concerns. The collapse of natural forests will be the demise and common tragedy of our specie.

Seeing forests as global commons offers new light that can recognize or enhance a regulatory framework and shifting to a global goal. It also offers fundraisers and forest leaders with different initiatives to voice their concerns on how forests can and should be protected. This gives assurance of recognising forests with much focus on protection. Furthermore, it allows indigenous and forest communities to defend their rights nationally, regionally and internationally. It offers ways on which the international community can offer funds, recognition and respect to these natural resources.

The use of natural resources has been shocking since most have been over-exploited globally. The transition to a more sustainable development planet has not yet happened. Economic and social development has seen much success, but some challenges remain and environmental problems have become more acute. This is because the interdependence among states has not been related by sufficient adjustments in the global governance regime. There has been a sharp increase in trading and capital flows which makes global economic governance more relevant for development.

However, there are gaps in international trade, finance and technology regimes which has reinforced global imbalances. Bilateral, regional and multilateral trade agreements continue to erode policy spaces for developing countries and now pose hurdles to technology transfers,

meanwhile financial market liberalisation has also increased their macro-economic vulnerabilities without providing access to more stable finance. It will be critical in achieving an inclusive system of global economic governance to overcome these short-comings and enable sustainable development.

However, having an inclusive governance also means having an effective United Nations, it can be the only truly universal and inclusive multilateral forum on this planet. There should be coordination, cooperation, coherence and policy-making across the UN systems. Efforts should continue to enhance representation of developing countries in more multilateral institutions and standard setting bodies. Many of the developing countries continue to be marginalised or excluded from global decision-making institutions and processes. There is a need for more engagement and coordination in and between the UN, G20, regional institutions and established multilateral institutions. The gaps in the governance regime make progress in social development difficult. These include the absence of adequate mechanisms to regulate the movement of workers between different countries, and weak protection of migrant rights, as well as the restriction of access to technologies in agriculture and other linking areas. Environmental sustainability is characterised by a weak global environmental governance regime which is fragmented. These many gaps occur globally and coherence is weak.

There is a need to conceptualize an international policy-making framework, across all organisations and all decision-making entities which integrate sustainable development in a coherent and balanced manner. There is also a need to strengthen political engagement and governance around and within each of the dimensions and governance that pertains to the financing of sustainable development. This requires partnerships at the global level between all organisations, countries, stakeholders and civil society. Importantly, there is a need to put in place an enabling and inclusive system that looks after global governance and can shift according to its needs. The creation of an international enabling environment would strengthen global partnerships for development in many ways. This can translate into a coherent framework that can achieve sustainable development at regional and national levels.

Nevertheless, in the matrix of climate change a new cornucopian view of global commons has diminished and no longer prevails. There is a new perception that is being fostered by the new younger generation that the issue of climate change and enclosure of some of the global resources should be done sooner rather than later. There has been an increase in negotiations to protect forests, but these have since failed. There are however alternatives that can be used

to improve public opinion and perceptions. The use of property rights can be a common good for forest protection, and the recognition of community and public rights to reduce deforestation. Such stewardship maintains traditional knowledge and fosters the recognition of indigenous rights to forest communities. However, certain questions arise as to how to manage and respect state sovereignty to reduce the over-exploitation of natural forests.

The thesis takes a perspective of recognition of indigenous groups and communities to encourage and strengthen forest protection. If governments recognise the property rights of communities and emphasis is put on all levels, this can reduce deforestation. The realization of human rights as a synergy to protect forests can be a welcome venture. If property rights and the rights of indigenous communities are recognised and respected equally with dignity, then a certain large portion of forest and forest lands will be protected and recovered. This has also been recognised by the Bonn Alliance and the governing arms of the United Nations.

However, in terms of government management and protection of forests, the recognition of community rights does not reduce the need for international help or international jurisdictional action. These indigenous and forest communities will need help to reduce poverty, build capacity, share technology and knowledge. This can all be facilitated by their national governments and the international community. The joint ownership and management of forests allows for economic benefits with different role players. Governments and other organisations should see communities in developing countries as partners in reducing deforestation.

It must be recognised that as we live in a climate change charged planet, no single decision-making unit will hold exclusive title over the governance of certain natural resources, although the United Nations has tried, but to some extent it still fails. As we move forward, certain natural resources such as forests, their use and exploitation will start to affect everyone on our planet. That means certain interventions and negotiations will definitely need to be achieved before it is too late. These initiatives will have to be cost effective and extend to everyone in a given community. Exclusive ownership by communities will reduce interference, thus result in more efficient use of natural forests. The communities will keep a watchful eye for illegal loggers, and with the help from governments or NGOs reduce corruption and intimidation.

Importantly, voluntary well informed market transactions will ensure enclosure and provide the optimal amount of forest protection. The recognition of property rights ensures that land owners are adequately compensated and reduces abuses or over-exploitation of resources. However, a huge problem in developing countries has been a failure to define and enforce

property rights. This is where the developed countries can assist. The main management of forests can be based on voluntary and cooperative power, and importantly involve all the communities and role players in forest protection. This will help increase and realise the valuation and knowledge of forests ecosystems. There is a need for joint cooperation to internalise externalities and also approximate the efficiency of sole ownership of forests. This joint cooperation needs to be managed by governments that can provide policy reports to reduce conflicts.

There is a need for increased coherence, coordination and collective decision-making at the global level, which is grounded in international human rights standards and also guided by the human rights commitments of all the international communities. Government policies and international arrangements need to have a collective decision-making which keeps pace with global changes. New global partnerships for development provide an opportunity to address these economic, social and environmental issues in a coordinated, coherent and collaborative fashion. The global partnership can also promote an effective, coherent, representative and accountable global governance regime that can translate into a better national and also regional governance and the recognition of human rights and sustainable development.

The protection of forests will not come from one instrument as the activities that affect forest governance are multiple – the solutions need also to be pluralistic. Even with an instrument, such pluralistic efforts will still be required. These solutions start at community, national, regional and international levels. Efforts to protect forests will continue to start from grassroot level to the international level. Although international lawyers continue to promote laws and other policies to protect our planet, its protection depends on the action and efforts of every one of us. This effort starts from the food we eat and how we dispose of waste, the clothes, transport and energy that we use. Increased efforts are being explored daily such as the use of recycling, solar energy and electric cars to a range of food that is now being manufactured and grown in laboratories and other industrial initiatives. These efforts are welcomed to improve life and the environment we all need with other species.

It is important to recognise the linkages between indigenous people and forest protection. It is their home, territory and also identity. The international community needs to improve on forest governance, specifically rights, tenure and ownership, which can only be supported by national and regional efforts. Furthermore, there are other initiatives that can be recognised such as local and traditional knowledge systems and practices. It is important that the international

community improve the livelihoods of these communities through SDG programmes that are aimed at alleviating poverty and focusing more on sustainable development. A partnership with forest communities fosters roles of monitoring and supervision which will be important to protect large forest areas. Thus, forest communities should be encouraged to participate in sustainable management, hearings, consultations, consent in decision making processes and policy issues. Equitable management of forests should involve an adaptive design that recognises the particular social context. Furthermore, the recognition of forest communities' title, land and tenure rights is a well-know basic condition for equitable forest protection.

In addition, it is equally important to establish integral cooperation and coordination with environmental NGOs that play a part in countries with extensive tracks of forest lands.¹⁰¹⁰ NGOs have established longterm relationships with many developing country governments and have roots in advocating for environmental protection and sustainable development, with many of them playing a huge part in the medical/food aid and recognition of human rights in the global South. These NGOs can play an important part in building capacity and public awareness campaigns.¹⁰¹¹ They have built roots with many indigenous communities and many of them can speak the languages of these developing countries. These NGOs have formed regional and extra-regional strong alliances to train students, communities, judges and government officials regarding the best practises and the minimum standards for environmental protection.¹⁰¹² They also publish and disseminate easy-to read on their websites which can be useful to various key players in forest protection. Their main effort has been to create inter-institutional mechanisms for land-use decisions in forest communities. However, there is an immediate goal to foster a global initiative for forest protection.

A refined national constitution and legislation that is able to adopt many new legal principles is always a welcome addition. Clarity must also be provided where forest communities do not understand legal context and principles. In forest areas, this is important in adopting new measures of EIAs which can help forest protection, restoration and monitoring. A democratic

¹⁰¹⁰ Raustiala K, 'States, NGOs, and international environmental institutions', (1997) 41(4), *International Studies Quarterly*, 719–740, page 719-24. See also Rietig K, 'The power of strategy: environmental NGO influence in international climate negotiations', (2016) 22, *Global Governance*, 269–288, page 269-71.

¹⁰¹¹ Nasiritousi N, Hjerpe M and Linnér B-O, 'The roles of non-state actors in climate change governance: understanding agency through governance profiles. International Environmental Agreements', (2016b) 16, *Politics, Law and Economics*, 109–126, page 109-13. See also Nasiritousi N and Linnér B-O, 'Open or closed meetings? Explaining nonstate actor involvement in the international climate change negotiations. International Environmental Agreements', (2016) 16 *Politics, Law and Economics*, 127–144, page 127-9.

¹⁰¹² Downie C, 'Transnational actors in environmental politics: Strategies and influence in long negotiations', (2014) 23, *Environmental Politics*, 376–394, page 376-80.

system with effective checks and balances can always reduce corruption in the forest sector. One of the biggest threats in the sector has been illegal logging which is aided by corruption. A strong, effective and efficient forest governance system will produce major positive results for forest protection. Importantly, government issues are useful in furthering SFM in a multi-use landscape. Illegal logging, institutional corruption, illegal or unfair taxation schemes and deficient law enforcement in forest communities endanger the viability of SFM. Community development, industry and commerce, forest management and training and technical assistance are also vital in assisting cross-cutting forest activities and issues.

8.1.1 Brazilian Amazon forest fires

The Amazonia spreads across nine South American Countries, namely Bolivia, Brazil, Colombia, Ecuador, French Guiana, Guyana, Peru, Suriname, and Venezuela. Brazil contains the largest share of the Amazon within its borders at over 58 per cent, followed by Peru over 12 per cent, both Bolivia and Columbia over 7 per cent and the remaining 12 per cent split among the remaining five countries. These numbers highlight which country has the primary influence when it comes to policies affecting this jurisdictionally shared environmental biome. Due to its transnational nature, national policies affect all of the above nine nations and the broader region.

In the 1960s, Brazil encouraged deforestation in the Amazon through its agriculture and migration policies which were initiated with the creation of the Amazon highway (in part supported by the World Bank)¹⁰¹³ as a way to encourage “use” of the resources of the Amazon Rain Forest for the “benefit” of the people - this was the start of problem for the other Amazonian countries. Thus in 1978 the Treaty for Amazonian Cooperation¹⁰¹⁴ (the TAC) was entered into to permit the harmonious, sustainable use and conservation of the shared biome and its resources, while simultaneously protecting its indigenous peoples and rich biodiversity. The treaty acknowledges that the Amazon biome links all the countries together through their land use management of the Amazonia. It can be seen as interfering with sovereignty insisting that each country independently decides how to use and manage the Amazon’s resources for the benefit of its environment to the detriment of the financial economy and “development”.

¹⁰¹³ See website on, <https://globalforestatlas.yale.edu/amazon/land-use/roads-amazon-basin>. Accessed on 10 January 2021.

¹⁰¹⁴ See website on, <http://www.oas.org/dsd/publications/unit/oea08b/ch24.htm#TopOfPage>. Accessed on 10 January 2021.

Resource domains which do not solely fall within the jurisdiction of one country, and which all nations have access to, are referred to as a global commons, due to it being communal property of multiple nations. Global commons, of which to date only five are listed, make individual States vulnerable to policies adopted by other co-owners as they are all affected equally by any use or misuse of those resources. The Amazonia is somewhat a global commons within the region, but it is not officially recognised as such, despite the attempt at such recognition due to the regional acknowledgement of the importance of the Amazon biome as well as its international importance as one of the last remaining rain forests with rich diversity. Similar biomes such as Antarctica and Greenland are recognised as such. This lack of communal recognition means international organisations and bordering nations have little say on national policies around its use despite being directly impacted by said policies.

However, in the late 1980s, Brazil entered into bilateral cooperative agreements with its neighbours on how best to use and manage their bordering Amazonian property. The first was the 1987 Colombian - Brazilian Model Plan for the Integrated Development of the Border Communities in the Tabatinga - Apaporis Axis. This was entered into with the intention of the joint preservation of the ecology of the “shared” area covering 28,285km² with an indigenous Amazonian population of approximately 40 per cent and an urban centre within the Brazilian side of the Amazon.¹⁰¹⁵

In 1988, Brazil entered into similar cooperation treaties with Bolivia and Peru for the conservation and protection of the Amazonian environment within the bordering lands. Thus from its inception, the TAC acknowledged that without the mutual consultation and contribution of those who lived within the Amazon, sustainable use and protection of conservation areas could not be achieved, especially with the expansion of the Amazon highway system in Brazil cutting through the Amazon. With the expansion of the Amazon highway, there was a growing number of persons living and influencing the Amazonian “economy” who were neither indigenous nor native, and thus only cared for the short term financial gains provided by the environment as promised by the government over its sustainable use. The balance of power was thus shifted from a conservationist population to an agri-farming population and ultimately necessitated a need for governments to actively pursue conservation the Amazon to deter deforestation.

¹⁰¹⁵ See website on <http://www.oas.org/dsd/publications/unit/oea08b/ch25.htm#TopOfPage>. Accessed on 16 January 2021.

The signing of these bilateral treaties by the Brazilian government, led other States in the region and the Amazonians to believe that despite an increase in developmental activity in the Amazon through agriculture, the Brazilian government would still dedicate money and resources to conserve and protect the Amazonia from unnecessary exploitation, but that has proven to be the alternative.

An issue arises when governments/presidents are the ones who decide on the extent of protection that is afforded to an area such as the environment, resulting in government policies being easily changed based on the interests of the person in charge, such as the case in Brazil. This presidential personality based protection of the Amazonia has come into the spotlight with the election of Jair Bolsonaro, a far-right president who campaigned on the basis of the “exploitation” of the Amazon in lieu of sustainable usage because “sitting idly it is a waste of a resource”. He has deep ties in the agri-farming business within the Amazon, and is a president who publicly displayed his disdain for protection policies, reversing the work of former presidents within weeks of his presidency¹⁰¹⁶. Immediately after his election, the number of forest fires in the Amazon Basin increased drastically to unprecedented¹⁰¹⁷ heights. Not only were they in areas which were allocated for agri-farming or mixed use, but were deliberately spread to protected conservation areas.

Despite this crises being of growing international concern, Bolsonaro continued to deny the fires while systematically reducing environmental regulations, defunding institutions meant to protect the Amazonia, and refusing any aid, especially from the global West to deal with the fires.¹⁰¹⁸ The 54 per cent increase in deforestation that he allowed to continue, is largely because many of Brazil’s current top officials in the current administration support this economic policy of exploiting the Amazon as they directly benefit from it.¹⁰¹⁹ The fact that the international community is withdrawing most of its aid to the country as retaliation does not affect them, as they benefit through the private sector from companies such as Cargill¹⁰²⁰ and JBS.

¹⁰¹⁶ See website on, <https://earthobservatory.nasa.gov/images/145988/tracking-amazon-deforestation-from-above>. Accessed on 10 January 2021.

¹⁰¹⁷ See website on, <https://globalfiredata.org/pages/amazon-dashboard/>. Accessed on 10 January 2021.

¹⁰¹⁸ <https://www.newsecuritybeat.org/2020/09/president-bolsonaro-fiddles-brazilian-amazon-smoke/>. Accessed on 10 January 2021.

¹⁰¹⁹ See website on, <https://www.orfonline.org/expert-speak/amazon-forest-fires-the-tragedy-of-the-global-commons-55801/>. Accessed on 10 January 2021.

¹⁰²⁰ See website on, <https://unearthed.greenpeace.org/2020/11/25/cargill-deforestation-agriculture-history-pollution/>. Accessed on 10 January 2021.

Internal data from Brazil's National Institute Space Research also confirms that with Bolsonaro's presidency there has been a steep increase in forest fires. It must be understood that although forest fires are a natural way for the ecosystem to clear dead litter, such fires are not endemic to the Amazon rain forest's habitat due to high levels of precipitation and humidity in most parts and the area being the earth's carbon sink, fires release carbon. For centuries, the indigenous populations of the Amazon used forest fires as a means to clear land for small scale subsistence living, these fires had little impact on the forest's habitat as they were small and contained. With this learned method of clearing the rain forest so as to utilize its rich soils for subsistence farming, there was a desire to grow the agri-economy for the benefit of "the people" in Brazil. The Trans-Amazon highway made it easier to do so, hence most deforested land is within a 50km radius of this highway. As of 2019, the Monitoring of the Andean Amazon Project (MAAP) released a report highlighting that at least 40,852 hectares of forest land has been cleared thus far. This is a disturbing number considering the fact that between 2004 and 2014, Brazil had managed to curb deforestation by 80 per cent while still maintaining and growing the agri-industry, demarcating more and more land as protected areas and/or indigenous lands. This progress has been threatened by the belief held by the Bolsonaro administration that the Amazon is their territory, for their use and when not used "appropriately" it is merely sitting idly not benefiting the people of Brazil, which is furthest from the truth.

Despite all the science, and visible effects of deforestation on the whole country in the form of reduced air quality, Bolsonaro continues to keep his promise of opening the forest up to the world and by 'world' he means to private commercial ownership, which in fact benefits multinational corporations more than it actually benefits the small scale Brazilian farmers, as they purchase the raw goods cheap and sell the products as "finished" goods to the global market while hiding their origin to benefit from claiming they were sourced sustainably.¹⁰²¹

One such corporation is JBS,¹⁰²² one of the world's largest meat suppliers, buying cattle from ranchers in the Amazon with pastures in protected areas, this company tried to hide its corruption and claimed to not be responsible for their supply chain as they did not directly purchase from ranchers on deforested land. This statement was proven false when one of their

¹⁰²¹ See website on, <https://unearthed.greenpeace.org/2020/11/25/brazil-fires-deforestation-tesco-nandos-mcdonalds/>. Accessed on 10 January 2021.

¹⁰²² See website on, <https://www.theguardian.com/environment/2020/jul/27/revealed-new-evidence-links-brazil-meat-giant-jbs-to-amazon-deforestation>. Accessed on 10 January 2021.

truck drivers took pictures of the ranch where he fetched cattle, on deforested protected lands, exposing the fact that they encourage the clearing of forest land for grazing purposes. This trend is visible via satellite images showing an increase in the number of new slaughter houses appearing on newly deforested land, to make it easier and cheaper to transport meat. This is exactly what Bolsonaro intended to happen, by ensuring environmental institutions such as FUNAI were weakened by either firing the heads of said institutions or defunding them, in some instances doing both. This ultimately makes it even harder for indigenous peoples of the Amazon to assert their rights when soy farmers and cattle ranchers encroach on their lands. In the alternative, he has instead replaced these institutions with a weak military which the agri-industry know is on its side. The level of deforestation increased by 28 per cent in September 2020 from September 2019, despite the presence of military watchmen, and uproar from citizens and the world.

8.1.2 International Pressure

Currently, forests do not have international status/protection unlike other biomes which are considered global commons. Due to their global importance, there is a need for joint governance to deter national policies which favour exploitation. Bestowing such a status on the Amazon biome would be perceived as a threat by presidencies such as the Bolsonaro administration and seen as an encroachment on sovereignty as international institutions and other governments would have a direct say and impact on land use policies within those areas. This route would be a form of deterrent on nationalistic policies that tend to support commercialization of natural resources over conservation and sustainable use. These governments tend to ignore the fact that rain forests play significant roles of global environmental importance as the carbon basins of the world, temperature regulators and water sources within the regions.

This shift towards climate change denialism to justify deforestation even in the face of rising global temperatures is endemic of the Bolsonaro administration and the problem with allowing almost 60 per cent of the Amazon (a global communal biome) to be controlled by the whims of the Brazilian president of the day, solely because it is within its territories. International pressure has played a role in protecting the Amazon from further deforestation during Bolsonaro's administration in the form of the Amazon Fund. This is funded mainly by western countries, the two biggest contributors to the fund being Germany and Norway which threatened to significantly decrease their contribution to the fund if Bolsonaro did nothing to

quell the forest fires.¹⁰²³ This resulted in “immediate” action being taken in the form of deploying the army to stop illegal fire setting and publicly stating that deforestation would not be tolerated. Indigenous peoples living in the Amazon have stated however that this measure was more of a lip service to the international community as the military did not attempt to stop illegal deforestation and encroachment onto their properties and only served to temporarily reduce illegal fires.¹⁰²⁴

The UN can only call for action to stop forest fires without intervention, as has been done by the Secretary General Antonio Guterres. However, without the Amazonia being recognized as a global commons, this call falls on deaf ears. The UN has no authority to interfere with internal matters of sovereignty unless it is a matter of national or global risk to the people. The Amazon forest is very diverse and houses ten per cent of the world’s species. It is also the carbon basin of the world absorbing most of the carbon dioxide in the earth’s atmosphere, without this forest, all this stored carbon dioxide would be released to the atmosphere thus further increasing global temperatures. Due to this, there is justification for classifying the Amazon as global commons due to its large scale importance to the global ecosystem, not just that of Central and South America. Much like Greenland, such a change in the status of the Amazon forest would empower intervention by climate activists and the international community with regards to policy and protection of the Amazon, and ultimately the quelling of forest fires that lead to deforestation.

In 2001, a framework on the basis of environmental intervention was created by the International Commission on the Intervention and State Sovereignty,¹⁰²⁵ for when is it deemed appropriate for the broader international community to intervene and coerce a State into acting a particular way. In terms of one of the three elements contained in the core principles of this responsibility, the UN embraces a responsibility to prevent man-made crises that place their own or global populations at risk. Thus in theory when a State fails to protect its environment; or as in the case of Brazil, the state creates a man-made disaster through environmental degradation and its negative consequences as well as the indigenous genocide due to land clearings; which negatively impacts the population, it becomes an issue of global concern and the international community has to intervene in a coercive manner such as economic boycotts

¹⁰²³ See website on, <https://www.cnbc.com/2019/08/24/bolsonaro-to-send-army-to-fight-huge-fires-in-the-amazon.html>. Accessed on 10 January 2021.

¹⁰²⁴ See website on, <https://www.youtube.com/watch?v=oGjRNbXeRXI>. Accessed on 10 January 2021.

¹⁰²⁵ See website on, <https://www.globalr2p.org/resources/the-responsibility-to-protect-report-of-the-international-commission-on-intervention-and-state-sovereignty-2001/>. Accessed on 10 January 2021.

and trade sanctions, thus isolating the government from the international community and forcing conservation. A soft example of such international pressure was placed on Brazil when French president Macron indirectly threatened Bolsonaro by threatening to end trade deals with South American Countries of the Amazon biome unless action was taken to protect the Amazon. This resulted in member States of the TAC insisting that Bolsonaro take action to protect the environment.

What needs to be noted is that since the Brazilian economy is largely funded by the exploitation of the Amazon, alternate sources of income will need to be identified to decrease deforestation in the region. The decrease in deforestation and land use from 2002-2014 shows that, with the correct laws in place, many persons in the agri-economy have the knowledge and ability to cultivate and sustainably use the same land without the need to clear more forest land.

Furthermore, a system which identifies and rewards those who comply with sustainable usage of the Amazonia, such a system implemented in the Indonesian palm industry is only as effective as the checks and balances put in place by the international organisations in insisting on greater accountability within the value chain and not merely encouraging the use of the sustainability stickers as way to benefit from the incentive scheme while still destroying the forests and encroaching on indigenous lands.¹⁰²⁶ Far more concerning than the state sponsored deforestation in Brazil is the imagery created in the international community when it comes to the protection of forests, that is, little will be done as long as the products are benefiting humanity in the short term. This trend is seen from the Indonesian government following in the deregulation footsteps, despite protests from environmental activists and promising to not harm the Sumatra tropical rain forest.¹⁰²⁷

The inaction from the global community in protecting the Amazon has far reaching consequences for the world. For this reason, the UN's Forest Program needs to set up strong compliance mechanisms that are adequately funded to ensure compliance and a trusted and efficiently run rewards program where detractors will be punished in line with the responsibility to protect. Furthermore, there needs to be a distinction between sovereignty on national resources and a global commons, which the Amazonia should be classified as since it cannot ever be controlled by the policies of one particular government. We have seen that in

¹⁰²⁶ See website on, <https://www.rspo.org/about>. Accessed on 10 January 2021.

¹⁰²⁷ See website on, <https://news.mongabay.com/2020/10/which-version-confusion-over-environmental-fallout-of-indonesia-deregulation-law/>. Accessed on 10 January 2021.

such cases protection policies are dictated by the whims of its policy makers and their need to stay in government longer.

Managing a global commons depends on multiple factors, the first being the need to maintain communal ownership of a resource as well as the number of co-owners involved. If communal ownership is the default position due to a dispute in subdividing the resource, then the organisation's primary function is that of pooling risks and distributing revenue gained from auctioning user rights on the resource, a sort of royalty system. An organisation such as the TAC is primarily meant to limit usage of the resources to a socially optimal level so as to benefit all co-owners. The reason for this is because when multiple governments have jurisdiction over a resource space, exploitation of the resource by corporations in one jurisdiction impacts on the resource in neighbouring jurisdictions due to the inherent interdependence of the commons.

The deforestation of the Amazon in Brazil reduces the diversity in the Amazon biome thus affecting the entire ecosystem not just Brazil, hence it becomes necessary for the co-owners to hold one another accountable, which ultimately protects the resource because one cannot selfishly misuse it. However, it is easier to ensure jurisdictional accountability when the governments share the resource in fairly equal proportions as they have more "weight" in saying how it affects them, unlike in the case of South America where the eight other TAC members only jointly own a quarter of the Amazonia, and thus without international backing had little weight over Brazilian policies. Sovereign governments are reluctant to surrender jurisdiction to international organisations. It would be easier and more expedient to capacitate regional bodies with stronger enforcement powers and rewards systems that ensure that there is adequate protection and use of the global commons without the internal conflict and exploitation of resources, as shown above they are best suited at ensuring compliance.

Furthermore, it is necessary for the international community to hold multinational corporations accountable. They are the biggest contributors to resource exploitation through their support of policies of exploitation and privacy regulations that hide the primary supplier of their resources. These corporations thus continuing to benefit from of exploitation of common property, bourne of conflict all in the name of profit.

8.2 The use of the Common Concerns of Mankind (CCM) to foster a global goal

Principle 21 of the Stockholm Declaration states that – “*States have the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or to areas beyond the limits of national jurisdiction*”. This principle is widely accepted under customary international law. The principle constitutes an obligation of due diligence and conduct that needs to be followed. It is important to understand that international instruments only affect states that have ratified these instruments. The problematic issue is to find avenues to hold states accountable that have not ratified a particular instrument. In the instance of forest protection, there is no instrument at all.

Many states have chosen several ways to negotiate and agree on different treaties that constrain their conduct regarding exploitation of natural resources and environmental protection. States are bound by treaties that they have ratified, however customary international law plays an important part with regards to this scenario.

The common concern of mankind (CCM) has found itself in two treaties – the UNFCCC and CBD. Interestingly, the Paris Agreement (2015) has also recognised the principle as climate change as a common concern. The CBD recognizes many concepts such as: international solidarity, shared decision-making, intergenerational equity, accountability and sharing of financial responsibilities. These two instruments are also important for the forest protection regime as they have laid the foundations and international efforts for global goals.

In 2015, about 194 states to the Paris Agreement recognised that there was a need for more initiatives to combat climate change and such initiatives would be pluralistic. The Paris Agreement recognises that states should maintain, take action to conserve and enhance greenhouse gases sink and storage in their countries. These initiatives are also important to forest protection since they play a vital part in carbon sequestration and storage.

It must be recognised that all states have a common interest to forest protection since they are aware climate change will certainly affect them one way or another. However, common interest can be generic, it might entail duties under international law. Forest protection has become a phenomenal topic that raises common concern and interests for combating climate change. In the case of depleting species and issue of forest protection, it is fitting to use the term ‘CCM’. It is now a common interest agenda that will drive the global community to seek some leverage and a driving force in the development of general rules. We have seen this recently with President Macron of France and President Bolsonaro of Brazil getting into heated arguments of how the Amazon is a concern and interest, thus should be protected.

The CCM plays a vital part in finding and providing a framework for approaching global problems. It is recognised that issues that are recognised as common concern are important issues that transcend the boundaries of a single state and need a collective effort or response. These concerns usually do not respect national boundaries or cause effects in other countries where the actual event initially occurred. That is, CCM expressed the need for international cooperation, coordination and integration through the use of strong global institutions to face a shared issue.

Furthermore, CCM fosters international cooperation and compliance mechanisms that are creative. The CCM principle applies to specific issues. The CCM provides solutions to global environmental resources that can or will cause a global problem. These natural resources can also face global issues that is causing overexploitation. These problems will mostly be long-lasting adverse effects and will definitely be devastating to future generations. Thus, CCM recognises intergenerational equity and a fair burden sharing.¹⁰²⁸ A scholar¹⁰²⁹ explains that CCM can be traced to humanitarian and human rights law, these relate to a global set of values and the interests that are independent of the interests of states.

The UNEP undertook to examine the concept in 1990, explaining that it implied the cooperation of states on matters that are of importance to the global community.¹⁰³⁰ The common concern also has a social dimension meaning that all sectors and structures of all society need to be involved in these global efforts to combat environmental degradation. It favours to serve the consolidation of the North-South environmental dialogue. These sectors also include various NGOs and governmental bodies.

Natural forests are primarily in areas of national sovereignty - for example, Brazil will govern their forests the way it feels is necessary and appropriate. However, the principle of CCM recognises this permanent sovereignty, but for emphasis offsets this idea by stating that forest protection is a common concern of mankind. The continued loss of forests will affect all species and life on our planet - given this, a state should set out plans, strategies, programmes and national actions for forest protect.

¹⁰²⁸ Shelton D, 'Common Concern of Humanity', 39/2 (2009), *Environmental Law and Policy*, page 83.

¹⁰²⁹ Ibid.

¹⁰³⁰ AS Timoshenko, 'Responses to environmental challenges: UNEP experience', in: Al-Nauimi & Meese (eds) *International legal issues arising under the United Nations decade of international law*, (1995), at page 169-71.

Although any state with forests in their national jurisdiction has a supreme say, other states have a legitimate question and right of common concern as to how forests are protected and exploited. Moreover, CCM recognises that there is a need to balance sovereignty and forest protection in meeting certain climatic standards that are required to combat climate change. Despite forests being a national resource, the common concern ensures and maintains that states are aware of their responsibility to the present and future generations, i.e. their responsibility to mankind, and provide a pathway for global involvement, through reporting, monitoring and other requirements.

The CCM recognises individual state interests, which can imply a characteristic of egocentric rather than some altruistic features. The concern is usually an element which presupposes some form of worry and needs concerted efforts to counter. In the instance of climate change, the concern relates to the consequences of anthropogenic climate change. The result is that all states need to develop a strategy to address this common concern in pursue of a common interest. It should be kept in mind that forests are not merely an issue of exclusive permanent sovereignty or national interest, they are relevant for the sustenance of all life on our planet. Thus a common interest arises in relation to the protection of global environmental resources – this gives a birth to the global common concern which concerns these resources.

CCM is thus linked to global environmental resources. The rapid overexploitation of forests is a threat to the survival of mankind, and a global concerted strategy by all states is required for the survival of mankind. Common concern creates a recognised conciliatory code which must be followed around the globe. It identifies that developing countries can look after the well-being of its own people without overexploitation and squandering the well-being of all mankind and other species.

Developing countries must guard against losing their permanent sovereignty, but must pursue sustainable development. This can be recognised as custodial sovereignty, which relates to global environmental resources. The notion recognises that a state is the responsible trustee of its own global environmental resources and other states have an expectation that the owner will protect these resources. The other states have a duty to support the custodial state in order for it to fulfil its obligations of protecting these resources. The state is entitled to exploit its resources according to its permanent sovereignty, but overexploitation and environmental degradation is restricted by the interests of other states. In this instance, developing countries are trustees of its resources. The other states have an expectation that the resource is protected

and conserved in a sustainable manner. They have a duty to support these countries in the sustainable management of these resources. In line with this duty of support, developing countries can benefit from transfer technology and capacity building or channelling of funds to assist in order to achieve its protection. Thus, forests are a natural resource which are located in part or whole territory of a state, but enjoyed by all mankind and other species. Custodial sovereignty applies for better governance of forests. Developing countries can be encouraged to agree with this notion since they do not lose their permanent sovereignty.

Furthermore, custodial sovereignty mirrors the current legal definitions and provides ways for the development of various concepts in a global dynamic structure. This promotes sustainable development for both developing and developed countries. It will not expropriate the natural resources of developing countries, they are necessary if they are to develop and free themselves from poverty. Custodial sovereignty should be seen as reflecting the needs of the world – developing and developed states should not operate in isolation as they are interdependent to each other. They must cooperate and coordinate to reduce or counter global threats that threaten mankind and other species. The notion recognises that borders are manmade and the biosphere is not. It does not allow states to overexploit or pollute resources as they develop, thus recognising the needs of future generations. The notion can be recognised as “*sustainable development sovereignty*”.¹⁰³¹ The notion of custodial sovereignty presents ways on how the international community can protect forests and develop the international forest regime.¹⁰³²

The common concern helps international governing bodies that oversee the implementation of international environmental instruments. It can emphasize regulatory actions by developing countries and developed countries on the protection of forests. It can also implement extensive mandatory supervision and reporting requirements, in terms of which states must report their efforts and programmes to protect forests. Thus, states can become more accountable for their actions as a global community. This increases cooperation and coordination of efforts to reduce forest degradation and deforestation. The common concern is also concerned with sharing both benefits and burdens.

¹⁰³¹ Xavier Arnauld de Sartrea and Romain Taravella, ‘National sovereignty vs. sustainable development lessons from the narrative on the internationalization of the Brazilian Amazon’, Volume 28, Issue 7, September 2009, *Political Geography*, 406-415, page 406-9. See also A. Dan Tarlock, ‘Exclusive Sovereignty versus Sustainable Development of a Shared Resource: The Dilemma of Latin American Rainforest Management’, (1997) 32, *Tex. Int’l L. J.*, 37-66, page 43-45.

¹⁰³² *Ibid.*

Furthermore, this can also encompass the common but differentiated responsibilities principle which has appeared in various treaties that address environmental protection. That means that countries have responsibilities in the global protection of forests but their responsibilities differ. All states have a responsibility but, depending on capabilities and geographical location, they have different meaningful roles to play.

The Paris Agreement recognised the immediate threat of climate change. It is now a unique moment in that the international community has started to build some true effort in combating climate change, and the protection of carbon sinks and storages. Importantly, new concepts and alternatives could consolidate these efforts. Forests are recognised as carbon sinks and help in storing carbon. They are also a habitat of species and valuable ecosystems which will be affected by climate change. Forest protection thus recognises the conservation of biological resources and combating of climate change as a common concern to mankind, this needs global coordination and cooperation of efforts.

The CBD already recognises the common concern of mankind and states that its obligations impact on processes and activities that are under Party's jurisdiction which may have a significant impact on biodiversity. However, although noted in the preamble, this is an expressed concern of the importance and protection of biodiversity. Nonetheless, this position from the CBD will need to be strengthened by forest governance and other principles. In 1987, the World Commission on Environment and Development noted that it was a common concern for our planet – ecological and economic threats with which institutions, people and government must start to grapple. The forests are vital, rich of variety of life, health of mankind and our planet. By unequivocally recognising forest protection as a common concern, states can start to create strong foundations for global efforts.

It must be noted that legal principles have an important value even when left in general terms. The important part is to clarify them to avoid confusion. It is not always a desirable way or joint agreement by states to convert some of these broad principles into concrete rules. The principles of international law help to fill gaps and provide decision-makers with a well guiding mindset that can be a reminder of the basic principles of the law. Soft laws play a huge part on a global platform, by increasing cooperation and coordination and reducing fragmentation or confusion. This makes interpretation and the application of rules easy. On a global scale it also unifies efforts towards a more global goal and effort.

The common concern allows different states to have a choice or discretion on a common objective, in line with their domestic political agenda and also national legal arrangements. The increase in scientific knowledge leads to the development of international environmental law and thus leads to the development of environmental standards. The environment represents the living space, quality of life and the health of humankind, including that of future generations. The existence of general rules or obligations of states will thus ensure that actions and activities in their jurisdiction respect the environment of other states or the areas beyond their national control. Climate change will affect all states directly or indirectly. States will thus need to incorporate environmental considerations into their decisions and recognise sustainable development. There should be a recognition of 'soft' and 'hard' law which can be solidified and enhanced by judicial considerations. Such actions can be assisted by concepts such as the common concern of mankind.

9. Analysis

The problem that can be analysed in this Chapter appears to be two-folds. If these two issues are resolved, efforts will become much easier to protect forests. Firstly, the burdens which hinder forest protection becoming a global effort and goal. Important to this problem lies the issues of forest valuation and economic goals. Developing and developed countries seek timber and wood products for economic growth. Many of the corporations involved in deforestation in the developing countries are linked or have origins in the developed countries. Much of the raw materials and food (especially beef and beans) being consumed in developed countries are produced in developing countries. Such an intrinsic economic and development relationship is difficult to break. In recognising forest protection, developed countries will have to reduce the demand for much of the needed raw materials from developing countries. That means they will have to invest in their own countries or invest more in cleaner technology and sustainable development mechanisms to produce these raw materials. The problems are contained in several issues namely expense, lack of labour and land in developed countries, all of which is cheaper and abundant in developing countries.

Furthermore, the developing countries gain immensely from this trade which employs millions of people and countries recoup huge taxes which are required to other development projects. It is a problematic connection that is difficult to break since developing countries really need this trading stimulus. However, this is leading to deforestation in the global South. As the developed countries demand more raw materials, more deforestation is taking place in the global South.

It will take efforts from all states to reduce deforestation and forest protection. There is a need for initiatives that will reduce poverty in the global South whilst the global North takes responsibility for much of their need for raw materials. Initiatives seem to be plenty as research continues to find solutions, for example reduction in the amount of beef uptake to buying sustainable clothing seems to be initiatives being supported in the global North. These efforts are not the only ones that can reduce deforestation. There are multiple others being implemented and launched to reduce deforestation, thus by adding these efforts a global goal can be achieved.

At the centre of this global goal is to define natural forests in a manner that will cause a substantive shift to sustainable means. As an initiative, global commons are said to include forests as they capture efforts by the international community to consolidate efforts of forest protection. Global commons have been seen as resources or spaces outside national jurisdiction and the use of these resources or spaces should not undermine sustainable efforts of all states.

Importantly, this sits well with the duty of states to reduce significant environmental damage in their development projects, if these efforts will affect other states. In addition, the concept is well suited to international waters in which fishing should be sustainable so that other nations and marine ecosystems can continue to thrive. The problematic issue that seems to hinder this concept is that of permanent sovereignty. It is important to recognise that all species need thriving forest ecosystems, services and products. Although use of this concept is limited, it will play an important part in shaping public policies and minds as will be seen in this thesis.

Secondly, a global goal will have to capture the imagination and efforts of the global South, i.e. developing countries. Permanent sovereignty plays a huge part in this phase, as many countries with tracks of forests defend the management of their resources using this concept. Developing countries seem at loggerheads with how environmental instruments want to shape their national development plans. Truly, this can be an intrusion to permanent sovereignty, this is to some extent what developing countries have always fought for, namely the right to decide how to manage their own resources without any limitation. There has been a rhetoric from developing countries that environmental instruments are reducing efforts to self-develop.

However, developing countries also seem to agree on the importance of environmental protection, many of which is linked to their culture heritage and lives. It seems that these countries have always wanted equity in this process and their efforts or decisions to be recognised. At the centre of this discussion is the notion that in order for developing countries

to reduce illegal trading and unsustainable agriculture produce, there is a need to initiate programmes that will reduce poverty, improve sanitation, health and education in the global South. These efforts can be seen by the developed countries as a means of finding cooperation, coordination and understanding of forest protection.

Forests are important to all species and states, we need them for healthy lungs, water and our fight to combat climate change. They have become an important part in solving climate change issues and to poverty alleviation in forest communities and indigenous people's rights. It may be submitted that forests can fall under the common concern of humankind. States have a vested interest in how forests are protected. This concern does not undermine permanent sovereignty, in fact it recognises that states have resources and it is their duty to manage and protect these resources. Developing countries understand that they have a duty to protect natural resources and more broadly the environment. These countries are proud of their natural resources, however they do not want anyone to tell them how to manage and control such resources. Such countries remain resilient that they are the sole decision makers, and any effort can only add to this important duty that they already know and understand. They are aware of the vast resources that they have and own, however most are attracted by the trading profits and bribes of timber companies.

Common concern recognises socio-ecological issues that have been raised by developing countries. It must be noted that many states have enacted policies and legislations to protect the environment. Africa at large has promulgated the African Convention¹⁰³³ on the conservation of nature and natural resources, adopted in 1968 in Algiers. This was amended in 2003 in Maputo, Mozambique. It is important to note that there are about 53 signatories to this convention. This concept seems to cover the important issue that developing countries have stated as not being covered by environmental instruments.

10. Conclusion

This Chapter has shown that various problems have played a part in reducing the possibility of a forest instrument being negotiated and agreed. This has been shown in two ways, namely that there are issues that hamper the first steps of States negotiating the instrument, thus they will not come for the conferences or have different views on how forests can be protected. Secondly,

¹⁰³³ African Convention on the Conservation of Nature and Natural Resources, Maputo, Mozambique, January 24, (2013).

there are inherent issues that have been intensified by other regimes and are already on the international arena. This has caused confusion as to where exactly to begin with the negotiations of a forest instrument since there are treaty fatigue and fragmentation issues in environmental governance. For its part, poverty weakens forest ownership and protection, this is because various communities will start using forest lands for different functions and this limits the government and private ownership of forest lands.

Corruption weakens government institutions with finance, the environment and research. This inhibits the government from traveling to many conferences and attending negotiations. Corrupt governments also gain immensely from the sale of forest resources and trading, they would thus not want to bind themselves to an instrument that seeks to protect forests. Furthermore, corruption bankrupts the government financially, thus governments will not negotiate an instrument if there is no finance to start forest protection programmes. They will also refuse to ratify the instrument if the instrument is not accompanied by donor funding.

In addition, donor fatigue makes it difficult to agree on instruments in the environmental regime. This is because there have been many instruments already agreed and there seems to be no more donors willing to fund these projects or programmes. Many environmental programmes and projects tend to fail due to treaty fatigue, thus States have questioned the use of the instrument and what it will achieve if the instruments already in the international arena are failing to do what they were supposed to do and achieve.

Historical burdens and sovereignty have divided the States into two clubs, the Southern and Northern Hemispheres. This has made the negotiations of any international instruments difficult. The Southern Hemisphere is made of developing countries, and they will claim their sovereignty refusing to be bound by environmental instruments deemed infringing on their political sovereignty and national boundaries. The developed countries in the Northern Hemisphere want to see meaningful sustainable projects as they are also donors. Thus, most of their agreements and negotiations with the developing countries come with conditions. These barriers hamper and reduce the chances of a forest instrument being negotiated.

Nevertheless, there is a need to solve grievances so that everyone can attend the negotiations on an equal platform, with everything being explained to/for full understanding of issues affecting forests and the effects of deforestation. There is a need to correct the power struggles that have resulted in developing countries voicing their independency struggles from their historical burdens. This can be done by including them in the negotiations of such an instrument

and through listening to their grievances. They can be given financial incentives for protecting their forests. This means that power should also be dissolved from mainly the developed countries by setting regional and continental conferences, secretariat and committees offices so that these developing countries can voice their problems. In addition, the UNFF and CPF should be given the much needed funds and expertise to broaden its work in developing countries to reduce conflicts, poverty and deforestation.

Many of these conflicts emanate from the lack of a binding instrument for forest protection. There is a need to craft an instrument which will redesign the forest regime framework. This instrument will interpret the certain concepts that have hampered the effective protection of forests, thereby closing the gaps and fatigue that has been observed in the field. This will harmonise any inconsistency caused by the instruments previously promulgated. A forest instrument is a need for institutional co-operation, integration and co-ordination in those instruments already promulgated to reduce fragmentation and confusion in forest governance.

The new instrument would state precisely the timber trading procedures that are transparent to reduce corruption, intimidation and overexploitation of forest resources - this will ensure the sustainable use of forest resources and recognition of indigenous rights. There is also a need for NGOs to be given a greater role in building capacity and educating the public about the use of forest resources and sustainable forest management.

Moreover, the international instruments promulgated have already proved to be inadequate and insufficient for forest protection. They have also caused huge treaty fatigue and fragmentation which has reduced (assuming from Rio in 1994 that it existed) the political will of several environmental parties and rendered the forest governance regime ineffective. However, to solve this problem there are two important problems that hamper the forest governance regime, namely that it is highly fragmented and the large part of it is non-binding with relative lack of adequacy in certain parts such as recognising the other forest functions and the ecosystem approach. To reduce fragmentation in any field of law, there is an obvious need for co-operation, co-ordination, and integration of the small parts to fill the gaps that have been created or need to be filled.

In short, the existing rules, concepts, principles and standards need to be transposed into a single binding instrument, and also cover the substantial gaps and fatigue posed in the forest governance regime. This might include a body under the instrument that will craft all the international forest laws that have been set out on the international arena for co-ordination,

integration and co-operation between these environmental regimes. Since the negotiations are difficult, there is need to welcome plans to foster regional and national pathways for forest protection. Moreover, the UNFF should be encouraged to implement plans to educate local communities about forest protection programmes and how to report forest crimes. The UNFF should start transposing forest concepts and principles into a document to cover the gaps left in international forest governance.

However, due to these short-comings there is a need to look at a few countries and how they have protected their forests without an instrument. This comparative analysis would give us an insight if there is definitely a need to protect forests with a specific legally binding instrument or if they have covered this subject adequately and sufficiently. It is also important to analysis how they are cooperating and coordinating with this mixed bag of instruments that relate to forest protection.

Capital, threats to human life and greed are the reasons international law on forestry is slow to protect these vulnerable ecosystems. Capital, that being multinational companies, influence governments through “monetary support” which means that policies are to be more favourable to the organisation and not necessarily the citizens. The impact of this is that governments find it difficult to do what is right – therefore corruption in temporary one life-time gains results in generational loss. If you look at the countries with almost no forests left, it is easy to see that a lot of them chased “development” over the environment and human life, the earth was exploited and now they attempt to do so elsewhere. Capital and greed burdens international policy makers because they rely on donations. Sometimes such donations come with terms and conditions, for example the UK and USA forces countries to which it donates, to have laws in line with their policies. Threats to human life happen at local and international levels, with many indigenous people dying for their efforts to protect the environment. This can discourage others from similar initiatives and works as a deterrent to environmental activism.

Hoarding was the worst and most perverse disease to poison humanity in the 19th century. Due to unnecessary want and need to amass a lot of everything and anything, people have over exploited natural resources and overreacted to perceived threats against this hoarding illness. However many of these vastly exploited materials cannot even be used now, and only contribute to polluting the earth. The inherent weakness of the international community to this illness means that many cannot act against such actions as needed unless States themselves commit to action and are willing to “risk it all” against the hoarders. This translates to the need

for governments to care more about their citizens rather than amassing capital and fearing stepping on toes. This willingness and protection is important as it is not enough to only enforce environmental rights in one country but fail in another because the laws do not correlate due to the different value placed on non-human life forms in each respective State.

We cannot solely rely on governments' calling on their neighbours to respect and protect the environment in their States, such as what happened in the Philippines in 2019 with the forest fires affecting air quality in the region. This is because this strategy is weak for the following reasons, firstly it means we allow for the harm to be committed and only care to act after the fact; secondly, we wait for civil society to inform the government that the situation cannot be tolerated and will not get better without them speaking to their counterparts; and lastly, the reaction only occurs when it is too late and the environmentally detrimental goals have been achieved. This strategy is bad because deforestation can only be stopped if and when the international community agrees that harming forests from the outset is a punishable offence, whether the action is intentional or otherwise.

The crime of ecocide needs international recognition to better protect the forest - organisations and states harming the planet need to be punished at the level of heads of government, through criminal prosecution rather than the mere payment of fines as this will have minimal impact. Mining of resources should not be the focus of the world, countries and organisations that continue to mine despite the visible impacts of mining on the environment should be shunned on a global scale. Placing an environmentally friendly and sustainable certification on a product should mean something and be regularly verified, those without the certification should be locked out of places that respect the environment. This is the only way that deforestation in the name of producing more pine trees and soy based products for human consumption, will be addressed, limited and reduced. Similarly, due to hoarding most of the by-products become wastage and occupy more space as dumpsites because many are not biodegradable and have no minerals that the soil can consume.

Further, if their efforts bring coherence and collective understanding in the forest framework. The next Chapter analyzes regional and national laws of Spain, South Africa and Australia, and how they have adopted them to the international environmental instruments already promulgated. It is also important to see whether these countries consider their forests, in their national territory, as global commons which are vital for all species on earth and require global efforts to reduce forest deforestation and degradation.

Chapter 7: Comparative Analysis

1. Introduction

Due to the lack of an international binding instrument for forest protection, many countries have implemented different laws and policies that try to protect or relate to forest protection in their countries. The signing of the UNCCD, CBD, CITES, ITTA and UNFCCC has triggered the establishment of many national instruments aimed at forest protection. This chapter conducts a comparative analysis of instruments in Spain, South Africa and Australia. These countries have implemented national efforts to protect their forests which are facing different challenges and issues from climate change induced-impacts to modern day human development.

Importantly, Spain has played a part in the development of environmental law in Europe, South and Central America (important because of the Amazon). It has one of the oldest constitutions in the world and it is interesting to see how they have developed and promulgated their forest protection laws since the recent adoption of international environmental instruments. It has also played a part in the active mobilization of environmental instruments in the Medditarrear region. Meanwhile, South Africa is a democratic country under its constitution¹⁰³⁴. South Africa has continuously utilized its natural resources for its own development. South Africa is recognized as a country with one of the most advanced constitutions that tries to protect every citizen and the environment. South Africa has also played a leading role in environmental law in Africa, by advocating for sustainable development and environmental protection.

Moreover, Australia is one of the largest countries in geographical extent and facing the elements of climate change. Every summer Australia confronts severe wildfires that threaten human life, development and biodiversity (this issue also affects some regions of Spain). It is also considered one of the driest countries, with forests playing a huge part in reducing desertification, soil erosion, siltation, flooding, mudslides and nutrient run-off. In this country, forests can play a contrasting role, few people feel they enable wildfires, whilst food security is mainly reliant on the soil protective and water conservation functions of natural forests. However, such efforts to protect forests are now left to regional and national duties of different States to enact and promote legislation, policies and regulations that protect their forests.¹⁰³⁵

¹⁰³⁴ The Constitution of the Republic of South Africa No 108 of 1996. See also website <https://www.gov.za/sites/www.gov.za/files/images/a108-96.pdf>. Accessed on 10 October 2018.

¹⁰³⁵ See website on <http://www.fao.org/3/a0146e/A0146E08.htm>. Accessed 16 January 2021.

These three disparate countries have introduced different measures to protect their forests through policies and regulations. These range from the use of enforcement tools (the adoption of civil/criminal law into environmental law); the creation of learning hubs for extensive research on forest protection; to the use of different mechanisms such as protected areas and EIAs to protect their forests. Whether these efforts are sufficient and have impact is still to be considered and an open debate.

Forest ecosystems consists of a combination of geology, topology, species and climate that is linked to the physical and biotical processes of the forest lands. The most important ecological part of forest ecosystems is the trees that control these physical and biotic processes. A forest ecosystems has small and bigger species that interact together. These species are interdependent with each other, mostly they share a habitat which is the natural forests. Forest ecosystems also have freshwater species such as fish and crocodiles which are important for water maintenance. That is, forests ecosystems are more complex and have more important potential interactions. There are many species on forest soil and leaves that require the forest to be healthy, for their own survival.

Importantly, this interation and influence between species in forests is complicated enough for humans to understand. The knowledge and amount of information captured in forest ecosystems is incredible, and would take a lifetime to understand or study them, yet we are starting to gain knowledge through current researches. Forests can be managed and protected successfully to sustainably meet these specific objectives. Forests can be left alone to perform these natural processes that determine the future of climate change, desertification and biodiversity because they are highly diverse and able to adapt.

However, climate change influenced by humans has the potential to change forests and some of the inhabitants dramatically. Moreover, this will directly affect and impact humans who depend on forest ecosystems for clean water and air, wood, recreation and other multiple resources or services. Importantly, humans can positively or negatively influence the future of all global forest ecosystems. Thus, forest protection and management plays a huge part in maintaining vital functions performed by these forest ecosystems.

2. Spain

Forests in Spain cover up to 27 million hectares, which is estimated to be more than half of the national territory.¹⁰³⁶ Spanish forests include all territories which are not intended for residential, industrial and commercial agriculture development.¹⁰³⁷ It is important to note that in Spanish law *Ley de montes* were a *monte* or a forest (bosque) may also be defined as of the subject of this thesis but with differences as forests are not *per se* mountains. The Autonomous Regions have to an extent developed definitions of what exactly is a mountain.¹⁰³⁸ That is, the concept of forests in Spain is broad, as it also includes pastures and desert areas. Throughout the years, the Spanish forest policy has experienced significant changes and also the approval of new regulations aimed at sustainable forest management. Forests have been traditionally been exploited in Spain, people pick wood, fruits and natural walks.¹⁰³⁹ The neighbouring towns could exploit forest services as long as they respected the nature of the environment. However, this now has been classified under community ownership of forests in Spain.

The topic of forest management in Spain includes multi-functionality; the integration of land-use planning principles with forest planning; integration of forest policy with all the international objectives; administrative co-operation; and public participation. Importantly, they are national and regional legislations and regulations that can be used for forest protection. Forest protection governance starts within the Constitution to the protected area, fauna and flora conservation, climate change mitigation and adaptation, spatial planning, impact assessments, public awareness and participation, access to justice, legal enforcement and forest stewardship.

2.1 The Spanish Constitution

The objectives of the Spanish environmental laws have been to adopt measures to protect and conserve natural resources; cultural heritage; protecting rural landscapes and creating urban environments which uses sustainable land-use management principles. Furthermore, the restoration of forest lands is shared amongst the State and the Autonomous Communities. This

¹⁰³⁶ Campins M *et al*, *Environmental Law in Spain*, 2nd (ed), Wolters Kluwer: Law & Business, 2014, page 166.

¹⁰³⁷ Moreno A J, *La proteccion ambiental de los bosques*, Prologo De Luis Ortega Alvarez, Marcial Pons, Ediciones Juridicas y Sociales, S.A, Madrid (1998), page 106-7.

¹⁰³⁸ *Ibid*.

¹⁰³⁹ See, Eduardo Garcia de Enterría, *Las formas comunitarias de propiedad forestal y su, posible proyeccion futura*, Epilogo: El nuevo regimen legal y el caso de Cantabria, Ediciones de Libreria ESTVDIO, Santander, (1986).

also focuses on the adaptation of forest ecosystems to climate change, soil corrections and maintaining water resources.

Spain has signed many international environmental instruments including the CBD, UNFCCC, UNCCD, CITES and ITTA. It also promotes various national laws in order to meet its international obligations. Nationally the Spanish environmental policy is based on Article 45 of the Spanish Constitution.¹⁰⁴⁰ Article 10 of the Constitution recognizes human dignity as a valuable right for free development, social peace and political order. This section relates to the interpretation of the *Universal Declaration of Human Rights*¹⁰⁴¹ and other international treaties which Spain has ratified. As Spain has ratified instruments, Article 10 ensures that it is an obligation to update the laws in accordance with the objectives of such instruments monitoring and evaluating human rights. Environmental protection is suppose to recognise and hold the dignity of all citizens of Spain. Thus, there has been development in the intersection of human and environmental rights. Article 15 also states that everyone has the right to life that has physical and moral integrity. That is, environmental damage that threaten health, quality of life and well-being should be reduced or prevented in Spain. This is also developed by the Environmental Liability Act 26/2007¹⁰⁴² which focuses on various enforcement measures that will be discussed below.

Furthermore, Article 24 of the Spanish Constitution states that everyone has the right to have their rights protected by judges and courts if their rights are legitimate rights and interests. That is, everyone should defend their rights and have the right to access of courts and legal assistance. Article 39 states that public authorities shall ensure the socio-economic and legal protection of the family. This Article is particularly important due to the intergenerational equity principle that aims to maintain and protect the environment. Such interpretations are now being adopted by Spain from international to the autonomous regional level. This is aimed at maintaining the use and development of economies at a balance with the protection of the environment in a sustainable way. Article 39 (2) goes further in stating that public authorities shall ensure the full protection of children; and 39 (4) states that children will be given protection in accordance with international agreements that safeguard their rights. Thus, section

¹⁰⁴⁰ Ley Orgánica de 29 de diciembre de 1978, Constitución Española. BOE núm. 311 - de 29 de Diciembre de 1978.

¹⁰⁴¹ Universal Declaration of Human Rights, Paris, 1948.

¹⁰⁴² Ley 26/2007, de 23 de octubre, de Responsabilidad Medioambiental, BOE núm. 255, de 24 d'octubre de 2007, BOE-A-2007-18475.

39 is focused on the sustainable development of Spain taking into account considerations of future generations.

To that regard, it may be recalled that the UNFCCC, Kyoto Protocol and the Paris Agreement focus on mitigation and adaptation of climate change, so that the future generations can inherit a habitable planet. It must also be emphasized here that the Federal State has obligations to protect the environment once it ratifies an international instrument. Thus, environment, culture, and socio-economic development must be in equilibrium and managed in a sustainable way to reduce and prevent environmental damage or degradation. As such, these are sustainable goals that were set in 2014 called the *2030 Agenda on Sustainable Development*.¹⁰⁴³ These Articles are important in the protection of the environment, and consideration of forests. The sustainable use of the environment should be also be for respecting people's dignity, property and health. That is, there is a convergence of human and environmental rights for maintaining the environment.

Importantly, Article 45 of the Spanish Constitution states that everyone has a right to enjoy an environment that is conducive for human and personal development, there is also a duty to preserve it. The public authorities are given a duty to safeguard the use of natural resources. This is meant to protect and improve the environment. Article 45 (3) also gives effect to criminal or administrative sanctions to reduce and remedy environmental damage and degradation. These sanctions are to be imposed to offenders under the established policies or regulations and if there is a violation of the laws.¹⁰⁴⁴

In Spain due to the European environmental directives, the General Directorate of Environment has been given competence as the established national authority with regard to certain legislation. In 1990, this led to the creation of the General Secretariat of Environment and the Secretariat of State on Water Policies and Environment created in 1991. The Minister of the Environment was created by the *Royal Decree 758/1996* of May 1996. This ministry oversees the conservation and protection of the environment in Spain. The administrative structure is explained in the *Royal Decree 1823/2011*, *Royal Decree 1887/2011* and the *Royal Decree*

¹⁰⁴³ This will be well explained later in this thesis. See also, Transforming our world: the 2030 Agenda for Sustainable Development <https://sustainabledevelopment.un.org/post2015/transformingourworld>. Accessed 20 December 2018.

¹⁰⁴⁴ Article 325 *et seq* Criminal Code.

401/2012. The Ministry executes policies regarding mitigation and adaptation of climate change, protection of natural heritage, biodiversity, the sea and marine resources. In general, the Ministry is constituted of the State Department for the Environment, which is responsible for the Spanish Office for Climate Change, which has a General Directorate status; and the General Directorate of Environment Quality, Environmental Assessment and Natural Heritage.

Importantly, in 1999 the Minister of Environment unveiled the Spanish Forest Strategy which was approved by the Environment Sectorial Conference. This resulted in structural reorganization and the Sectorial Conference on the Environment was made responsible for all forestry matters, including public administration. The *Royal Decree 948/2009* determines the functions of the State Council for Natural Heritage and Biodiversity, it also repealed the previous National Forest Council. The existence of the Forest Protection Service aims to preserve forest ecosystems and maintain the natural balance. State Act 43/2003¹⁰⁴⁵ in compliance with Article 149.1.23 of the Constitution is an elaboration of forest and forest uses. Incentives and financial institutions have been established that are aimed at contributing to the sustainable maintenance of private forests. Finally, the list of projects that require EIA has also been increased to better protect forest ecosystems.¹⁰⁴⁶

Moreover, the Spanish Constitution states that there is a sharing of competency powers between the State and the Autonomous Communities, the latter have specific legislative powers concerning their regions or communities.¹⁰⁴⁷ In accordance with Article 149.1.23 of the Constitution, the State holds the executive powers on ‘basic legislation on environmental protection without prejudice to the faculties of the Autonomous Communities to establish additional standards of protection’ and ‘basic legislation on woodlands and forestry projects’.¹⁰⁴⁸ The exclusive powers of the State are within the realm of the basic legislation, rather than broadly to the whole environmental sector. There has been development of self government regarding environmental protection on the Autonomous Region level.¹⁰⁴⁹

¹⁰⁴⁵ Ley 43/2003, de 21 de noviembre, de Montes, BOE núm. 280, de 22 de noviembre de 2003, BOE-A-2003-21339.

¹⁰⁴⁶ Benito Lazaro F, *La oerdecion constitucional de los recursos forestales*, Editorial Tecnus, S.A, Madrid, (1993), page 72.

¹⁰⁴⁷ See note 1046, page 102.

¹⁰⁴⁸ Eritja C M *et al*, *Environmental Law in Spain*, 2nd (ed), Wolters Kluwer: Law & Business, (2014), page 37.

¹⁰⁴⁹ See, Joan Manuel Trayter Jimenez *et al*, *El desenvolupament de l'autogovern en material de territori, paisatge, litoral i urbanisme*, Generalitat de Catalunya: Institut d'Estudis de l'Autogovern, Col·leccio Institut d'Estudis de l'Autogovern 13, Barcelona, (2017).

For example, Catalonia has developed certain parts of its own environmental liability law. This has seen the advancement of criminal, civil and administrative sanctions in Catalonia, that relate to environmental degradation. The Catalan Civil Code also regulates land stewardship contracts for the first time in Europe.¹⁰⁵⁰ These agreements which are convenient for a time period. This does not affect sale and lease of the land. However, prior public notification and publication is required. Furthermore, the land has to be taken care and degradation has to be minimised at all costs. The land should be kept for its natural purpose as the owner can ask for assistance to maintain the land.

Furthermore, Article 148.1.9 of the Constitution states that the Autonomous Communities have powers regarding environmental protection. They can develop, implement and enforce basic legislation, as well as other legislation to achieve higher levels of environmental protection. The Autonomous Communities have this generic power on any environmental matter and other specific powers that relate to the environment, for example woodlands and forestry as per Article 148.1.8. The State enacts basic legislation, whilst the Autonomous Communities have developmental and implementation powers.¹⁰⁵¹ They may also enact legislation in their regions to achieve a higher environmental protection, but these laws must not be in conflict with the Constitution and national laws. The Federal State can overrule the Autonomous Region decisions if they affect the environment negatively.

The Environmental Sectorial Conference, presided by the Ministry of the Environment, assists with the co-ordination and co-operation between the two sectors the central administration and the Autonomous administrations. The *Act 7/1985*¹⁰⁵² which regulates the Basics of the Local Regime, states that municipal local authorities have no legislative powers, but have regulatory powers in terms of their municipal ordinances. The municipalities (according to Article 137 of the Constitution) have a duty and competence to environmental protection in their regions to the extent of their interest concerned. Municipalities usually undertake two actions, which are the elaboration of their municipal ordinances in their local regions and the environmental management from their executive and regulatory powers. The municipals are well based on furnishing and deliver services delivery in their ordinances.

¹⁰⁵⁰ Ignacio Javier Boisan Canyamero, 'Custodia del territorio. Configuración jurídica. Titulación e inscribibilidad', in *El llibre sise del codi civil de Catalunya: Anàlisi del Projecte de Llei, Materials de les Divuitenes Jornades de dret Català a Tossa*, Institut de dret Privat Europeu L Comparat, Universitat de Girona (coord.), Documenta Universitària: Girona, (2015), 397-405, page 397.

¹⁰⁵¹ See note 1046, page 102.

¹⁰⁵² Ley 7/1985, de 2 de abril, Reguladora de las Bases del Régimen Local, BOE núm. 80, de 03/04/1985.

The Spanish Constitution of 1978 brought a definitive change to the State's power and the principle of decentralization on which it was based had a direct impact on the powers of planning. The Autonomous Communities were given exclusive powers in zoning and urban planning matters, meaning that the Autonomous Communities have legislative, management and the implementation of powers on this subject. The administrative bodies of the Autonomous Communities replaced and substituted the administrative bodies of the Spanish State administration in exercising the powers that had been given under the *Land Act of 1976*. These powers by the Autonomous Communities do not operate automatically since the State has exclusive powers over land and environmental matters.

Moreover, there are various legislations, regulations and policies that have been promulgated at Federal State level and regional level to protect the environment. Below, an analysis of some of the legislations in Spain that are deemed relevant for forest protection. These come from different fields such as protection of wild flora and fauna and land-use management (protected areas and heritage sites). The legal questions surrounding the issues of enforcement, public participation, right of court appearance and sentencing in Spain, from an environmental protection perspective.

Thus, governance of the environment in Spain is divided amongst the Federal State and the self-governing communities as provinces or regions and municipals (such as Catalonia, Andalusia, Basque Country etc...). The Minister of the Environment has responsibility for the preparation of basic legislation and compliance levels. The autonomous regions also implement plans that enforce legislation, policies and permits. The autonomous regions develop basic legislation in their regional scope and approve feasible environmental plans. They also have authority to grant environmental permits or licenses for their regions and implement primarily environmental procedures and planning. These autonomous regions (due to their difference in nature and economic worth) might have different policies, however they implement the same Federal State legislation. The local municipalities have competences in certain scenarios and sectors particularly at local level, for example noise pollution and waste management.

However, given the competences of the Autonomous Regions this has set out some issues with the Federal State. Mainly, in Catalonia, Andalusia and the Basque Country which are regions that favour political and economic independence from Spain. They have expressed key differences on how environmental protection should be governed and executed in their regions. There are also other regions which lack experts and financial resources to manage or protect

their natural resources such as the region of Extremadura. The problems of Extremadura are extended because it does not generate enough financial resources to protect its environment. It has mainly relied on the assistance of the Federal State. However, this issue usually raises problems with other regions which usually pay the financial deficit.

Furthermore, of the 17 Autonomous Communities hardly any analogous models of environmental protection can be found. That is, there is a spectrum of different types of procedures, administrative frameworks and the endowment of media which is being applied to environmental protection. The regional environmental regulations obviously are not the same or comparable, which manifests to contexts, resulting in different protection measures being applied to one protected area or forest if it extends territorial boundaries into another territory. An illustration will be projects that can affect the Guadarrama National Park or the National Park of the Picos de Europa.

Of equal importance can be tree species declared “on the verge of extinction” in one Autonomous Community can be regarded as “merely vulnerable” in another, resulting in the logging of this particular tree species adding to forest disturbances, fragmentation and vulnerability. The level of administration organisation, especially with the regional competences in terms of forest protection can be delegated to a council, community or municipal with no resources or experts. The result is lack of coordination and cooperation between the Autonomous Communities and also Communities – State. However, the serious issue is lack of effective forest protection measures and implementation of those laws already on the ground leading to illegal logging and degradation of the forest.

In addition, the Autonomous Communities’ competence framework has meant that the regions can decide what suites them playing along with Federal State’s decisions and proclamations. The results seem to reflect that, although Spain has ratified many environmental instruments of global importance, the implementation of these obligations on the Autonomous Community level through national laws and policies is difficult and weak. There is a fragmentation of delegated powers depending on social and economic status of each Autonomous Community. For example, Catalonia which does well in tourism in the Costa Brava region would want to extend its tourism chain throughout the region. This includes buiding of hotels and luxury facilities such as golf courses to entertain tourists. Such actions or proposals are a burden and obstacle to the implementation of international obligations and national legislations. It is reasonable and obvious that each community would want to do what is feasible and

economically viable for its people. There is a choice that has to be made between environmental protection and economic status of the region. In practice, this is a problem because these small differences and disparities have become a cause for ineffectiveness, inefficiency and incoherence in setting out forest protection strategies and programmes.

Importantly, this complicates the application and even sometimes blocks the use of the correct application of penalties in the Spanish Penal Code for sanctions against forest degradation. As the judicial system is set out different in each Autonomous Communities, this can result in another community not taking environmental sanctions seriously. The use of criminal sanctions is always difficult since people do not see the need for imprisonment when the crime is environmental degradation. The pursuit of crimes is also different, another region can see environmental crimes as a minor offence which can be the opposite of another. The sentencing is also different which results in one region posing minor terms than the other. This creates contradictory interpretations of how environmental laws work in Spain, since it depends on how the Autonomous Communities interpret the laws and regulations.

Moreover, environmental regulatory State bodies can also come into conflict with Autonomous Communities bodies. At the end of the day, this can result in experts refusing to work with one region because of differences. The Ministry of Environment can simply be affected by the lack of support of an official document, thus paralysing its duties and capacity to coordinate policies developed by the Federal State. This usually results in lack of elaboration of legislations and plans, the Spanish biodiversity can suffer serious consequences due to this neglect, because some of these plans are indispensable and essential for the effective protection of biodiversity.

Environmental protection in Spain has a number of facets, namely a right of the citizens of Spain which is linked to the development of the personal life, an environmental protection duty, and a commitment by the public authorities to protect the environment and respect human rights. The main focal point is that it is also a social right that depends on all positive actions by the public authorities. In the matter of forests, the Constitution is the highest law in Spain and recognises the protection of the environment under Article 45. That is, any development that can negatively affect forests will be stopped and prevented unless the Minister or a legislation (also regulations and policies) state otherwise. This is important in the protection of forests since it is a first step in building a forest framework or using other legislations and regulations that are deemed relevant to protect Spanish forests and prevent deforestation and degradation.

Furthermore, Article 45 means that there should be sustainable utilization of natural resources, protection, improvement and restoration of the environment. This also means the use and establishment of penal or administrative sanctions for environmental harm offenders. The public administration must also establish effective mechanisms to repair and remedy any environmental damage. Citizens of Spain have also a duty to preserve the environment, all citizens should recognise the importance of the environment. This duty is a limitation on activities that can cause environment damage and it is a form of collective solidarity for the protection of the environment. In terms of Article 45, public administrators are supposed to execute three different actions, namely to prevent, restore, and punish environmental degradation, which would include forests. Thus, deforestation and degradation of forests in Spain warrants a criminal, administrative or civil sanction.

The use of the prevention principle implies that citizens should be aware that not all restoration measures will repair the environment to its previous state and function. The repair of the environment can also be more expensive than the prevention of such damage. In addition in terms of sensitive ecosystem and threatened species, restoration is not always possible. Thus in Spain, the EIA has been made one of the most important processes to reduce significant damage to the environment. The activities that can lead to environmental damage require a prior assessment of environmental impact. The *Act 21/2003*¹⁰⁵³ is specifically for Environmental Assessment and its regulations set a list of activities that require such an EIA. These plans or projects are based on strategic evaluation and projects are subject to EIAs. The environmental audits are usually conducted by the EU Eco-Management and Audit Scheme or the UNE-EN ISO system (14001:2015). This process is regulated by environmental regulators as the public authority. They carry out inspections, supervisions and require information. If any regulations are infringed, they will issue penalties, fines or temporary closure of business.

In addition, the restoration principle gives the public authorities duty to act to reduce and prevent further damage once damage has occurred. Public authorities are given enough power to ensure that who ever causes such a damage should remedy and restore the environment with the associated and collective costs. Environmental crime was introduced in the *Criminal Code* by the *Organic Act 8/1983* (this was the previous criminal code, which was superseded by the

¹⁰⁵³ Ley 21/2013, de 9 de diciembre, de evaluación ambiental. BOE núm. 296, de 11 de diciembre de 2013, BOE-A-2013-12913.

*Organic Law 10/1995*¹⁰⁵⁴). Chapter (Articles 325-331) in the *Organic Act 10/1995* is now devoted to crimes against natural resources and the environment. Furthermore, Articles 332-337 relates to the crimes, protection of flora and fauna and has common provisions such as Articles 338-340. Article 325 states that the basic environmental crime as any breach of the Acts or general legislation protecting the environment that directly or indirectly involves deforestation and forest degradation. Importantly, there has been recent modifications to environmental crime in the *Organic Act 15/2003* of the *Penal Code* (BOE 26.11.2003) and *Organic Act 5/2010* (BOE 23.6.2010). Spain has established *Act 26/2007*¹⁰⁵⁵ on Environmental Liability which sets out the polluter-pays and prevention principles as the guidelines in Spain's environmental law.

Furthermore, *Act 10/2006* modified *Act 43/2003* on Mountains, which had modified *Act 50/1981*¹⁰⁵⁶ on the Regulation of the Organic Statute of the Public Prosecutor's Office to create environmental sections in each Public Prosecutor's Office of the Supreme and Provincial Courts (Courts of Appeal) that specialize in environmental crimes. These relate to territory organization, protection of heritage sites, natural resources and the environment, protection of flora and fauna and forest fires. It states that the public prosecutor is required to name a prosecutor who can deal with crimes that relate to territorial organization, protection of the environment, heritage sites and forest fires. This person has the status of a Chief Public Prosecutor and supervises, co-ordinates environmental sections and unifies the application of criteria. Nevertheless, they are various legislations in Spain that are deemed relevant for forest protection. Below is an analysis of those legislations and regulations operational in Spain.

2.2 Wild Flora and Fauna

The Spanish environmental regulation framework acts on four different levels – the international, national, autonomic regional and finally the local level. Spain is well equipped with a variety of legislative index that offer support to the legislative apparatus to defend and conserve nature, given that there is true will to implement laws in practice. The impulse, has been triggered by the local, international agreements Spain has ratified and incorporation to the

¹⁰⁵⁴ Ley Orgánica 10/1995, de 23 de noviembre, del Código Penal. Entry into force: May 25, 1996.

¹⁰⁵⁵ Ley 26/2007, de 23 de octubre, de Responsabilidad Medioambiental, BOE núm. 255, de 24 d'octubre de 2007, BOE-A-2007-18475.

¹⁰⁵⁶ Ley 50/1981, de 30 de diciembre, por la que se regula el Estatuto Orgánico del Ministerio Fiscal, BOE núm. 11, de 13/01/1982. BOE-A-1982-837.

European Union, by the important European directives. For a long time, Spain has been guided by these agreements, nowadays, this has become the main reference for the evaluation and monitoring of developmental projects nationally and also autonomic regional policies focused on nature protection.

The Spanish environmental law has been established through ratification of international instruments and the promulgation of national legislations. There are various that have since been used to protect wild flora and fauna since Spain is a large country with many different autonomous regions. The State has modified *Act 15/1975*¹⁰⁵⁷ by means of *Act 4/1987* on Natural Protected Areas and Wild Flora and Fauna Preservation (modified by several acts such as *40/1997*, *41/1997*, *53/2002*, *43/2003*, and *62/2003*) and recently by the *National Parks Act 5/2007* of 3 April and *National Heritage and Biodiversity Act 42/2007*¹⁰⁵⁸ which repeal and have substituted *Act 4/1989*. The *Preservation of Natural Areas and Wild Flora and Fauna Act 4/1989*¹⁰⁵⁹ related to nature and also forest matters relating to the effective conservation of forests in Spain. The law has introduced obligations that were internationally ratified by Spain as nature conservation law. This is deemed as one of the fields that are relevant for forest protection.

In addition, the *Act 4/1989* was promoted for the conservation of wild flora and fauna. Due to the development of Spain and the threat that such development posed on its wild flora and fauna, the Spanish government decided to promulgate *Act 4/1989*. The aim is to reduce the extinction and continued loss of wild flora and fauna. The environmental laws in Spain are also aimed at improving the quality of life of citizens and to sustainably utilise resources for future generations, and also aims to balance socio-economic, ecological and cultural considerations. Such a duty has been clearly stated in Article 45 of the Spanish Constitution, the duty to protect and preserve the environment with adequate legislations, policies and regulations.

The protection of wild fauna and flora is focused on the maintenance of ecological processes that can revive or restore other ecological processes or services. Spain also makes use of the National and Regional Development Plans for the conservation of natural resources for public utilisation. It also sets out guidelines for the management of natural resources in Spain. In

¹⁰⁵⁷ Law 15/1975 of Protected National Areas, BOE number 107, May 5, 1975.

¹⁰⁵⁸ Ley 42/2007, de 13 de diciembre, del Patrimonio Natural y de la Biodiversidad, BOE núm. 299, de 14/12/2007. BOE-A-2007-21490.

¹⁰⁵⁹ Ley 4/1989, de 27 de marzo, de Conservación de los Espacios Naturales y de la Flora y Fauna Silvestres, BOE núm. 74, de 28 de marzo de 1989, BOE-A-1989-6881.

addition, the environmental laws cooperate and coordinate works in accordance with any physical planning instruments if these are intended for the mitigation of serious deterioration of nature by human action. That is, it gives competent public administrations the power to approve National and Regional Development Plans that are aimed at mitigating and protecting natural resources in their Autonomous Communities, through certain legislations, policies or regulations in their regions. Furthermore, it recognises the creation of National Parks and reserves, without prejudice to integration. Thus, environmental laws in Spain offers a preventative protection regime applicable to nature areas that are preserved, but can be threatened or disturbed by any factor.

In addition, the Spain's wild flora and fauna framework follows that which has been set out by the European Economic Community directives and also through the *79/409/EEC* (conservation of wild birds). Such environmental laws are aimed at the protection of native species in Spain. It also regulates logging and gathering activities (fruits, leaves, roots or wood etc...). Furthermore, the environmental laws make it necessary for co-operation and co-ordination pathways between the State and the Autonomous Communities in matters that are of constitutional importance and relate to nature conservation policy. Such acts are encouraged between the National Commission which is aimed at the protection of nature, the consultative and co-operative bodies in the State and Autonomous Communities. There are also certain actions which conform to offenders who have damaged the environment. The offenders have an obligation to repair the environmental damage, regardless of the criminal or administrative penalties that may arise in that scenario. The Autonomous Communities are also granted the right to impose sanctions which they deem fit for the protection of the environment.

The purpose of the law to protect wild flora and fauna is to comply with Article 45.2 and provisions of Article 149.1.23 of the Spanish Constitution. This is meant to establish regulations to protect, improve and restore the natural spaces. The objectives of the law is to maintain the essential ecological processes, preserve genetic diversity, sustainable use of natural resources and preserve the variety and beauty of the natural landscape ecosystems. The administrations responsible are to ensure that such actions are held with a duty of care without reducing the potential and aspirations of future generations. Furthermore, public administrations, within the scope of their competencies, are required to maintain and conserve natural resources within Spain, irrespective of public or private ownership.

In addition, public administrations are encouraged to promote public participation and awareness programmes. This will enable democratic views to be shared on the use of natural resources, thus building on public utility and social interests in the conservation and protection of natural resources in Spain. The environmental laws ensure the need to make and implement Natural Resources Planning Plans which are aimed at delimiting natural resources, setting indicators and criteria for protection, promoting and formulating measures that are aimed at protecting natural resources. The regulations of the Plans should be approved by government and adjusted by the Autonomous Communities. Importantly, wild fauna and flora preservation framework states that the land that has been set aside for forestry must be to maintain the biological potential and productive capacity of those ecosystems. It thus states that the public administration in forestry must aim to achieve protection of these ecosystems no matter the ownership. These forests should also be managed for socio-economic, ecological and cultural functions.

Furthermore, Spanish environmental law establishes protected areas that are aimed at protecting natural resources. These natural resources are protected for scientific, educational, cultural, recreational and aesthetic interests. These protected areas should also contribute to the survival of these ecosystems and create a network of ecosystems to reduce fragmentation.¹⁰⁶⁰ The protected areas are also to achieve Spain's international obligations due to its ratification of international instruments. Moreover, it states that protected areas deserve protection from human disturbances and must be protected for their ecological, educational, scientific and aesthetic values which deserve special attention. The use of natural resources and human interaction can also be limited depending on how threatened and important are the species.

Moreover, buffer zones should be established through land planning methods to reduce outside activities affecting protected areas. The specific activities that can be prevented can be proposed under different regulations set by the Autonomous Communities. These protected areas must also be in line with the spatial planning laws and regulations of that local community in Spain, by zoning and delimiting areas for different uses, but also affirming the main focus of protecting the ecosystems and species. The priority for protection should be given for the preservation of habitats and specific protection should be established.

¹⁰⁶⁰ Rodríguez-Rodríguez D and Martínez-Vega J, 'Protected area effectiveness against land development in Spain', (2018) 215, *Journal of Environmental Management*, 345-357, page 345-6.

In order to achieve the purposes of this law and maintain a level of effectiveness the National Commission for Protection of Nature must co-operate and co-ordinate with the local communities, committees, state, corporations and the Autonomous Communities. It focuses on infractions and sanctions that can be given to environmental offenders. Environmental damage can result in administrative, criminal and civil sanctions. The offender is also required to repair the environmental damage or the administration may proceed to repair at the expense of the liable offender/s. Thus, the offender is required to pay all damages whether to repair, restore or remedy the environmental damage.

Importantly, Spanish environmental laws lists various activities that are prohibited and can cause significant environmental damage. These activities have also been recognised by different regions' regulations and policies as serious activities that can damage the environment. Like for instance the RD 1410/1986 of the 30th of May which approved the Management and Use Plan of the Caldera de Taburiente National Park (BOE, 8th of July 1986), Decree 39/2003 of 4 February, approving the Management and Use Plan of the Aigues Tortes and Sant Maurici Lake National Park (DOGC, 19th of February 2003) and Decree 106/2007, of the 22nd of May, which regulated the organisation and functioning of the Monfrague National Park (DOE, 29th of May 2007).

Nevertheless, there is a difference between how Autonomous Communities view these protected species. One community may see a specie as important another may not see it that way. This will lead to further hunting or cutting down of a tree specie resulting in the loss of the specie and vulnerability that can lead to extinction. The management of protected species is the responsibility of the Autonomous Communities. In respect of the landscape of Spain as a Federal State there is lack of co-ordination in the protection of the same species from one Autonomous Community to another. They are suppose to heighten the protection regime which have been established in the National Catalogue. They are also entrusted in endorsing and applying these conservation plans.

Furthermore, an Autonomous Community may protest the endorsement of such plans to protect a certain specie in its region. That can result in the lack of co-operation and implementation of environmental laws in an Autonomous Community. In some scandalous cases some Autonomous Community administrations are eager to remove these protection plans as they see them as obstacles to the development of their particular projects. This can go as further as denying the species even exist in that region which will be a contrast to scientific studies. For

example, the Iberian Imperial Eagle has been protected but some Autonomous Communities allow citizens to keep them as pets or in captive for breeding and selling purposes.¹⁰⁶¹

However, in other Autonomous Communities the issue will be different as it can result in hefty sanctions if seen with a vulnerable specie. Thus, there is a lack of co-ordination and co-operation between the Federal State and some Autonomous Communities since they resist and protest the blanket application of environmental laws across the whole of Spain. In the case of forests the law is insufficient since it protects one specie after another. In this thesis, the process of analysis is that forests are an ecosystem that exists with different functions and species. Like the CITES above in Chapter 5, this law is inadequate to protect forests. The resultant problems between the State and Autonomous Communities have actually made the relationship difficult to mend.

This a lack of cooperation and coordination in the implementation of environmental laws in Spain – this will be discussed below. This also has made environmental law fragmented and incoherent from one Autonomous Community to another. There appears to be a lack of cohesion between the penal terms and the recognised protected species. The implementation of the protection regime regarding the protected species seems weak and fragmented. The actual protection of these species is lower and the list of threatened species seems only procedural and appear only on paper.

2.3 Spatial Planning Law

The right of property that is embedded in the land-use planning and urban zoning laws in Spain is one of the most important tools of environmental law. The zoning of land means that land can only be used as it is stated in the spatial regulations and plans. That is, if an area has been zoned as a national park, no other development project can take place without exemptions from the latter plans. Nowadays, planning laws perform a greater role in the conservation and protection of biodiversity.¹⁰⁶² Through the use of spatial planning laws, environmental values

¹⁰⁶¹ JC Knobel, 'The legal status of the Spanish Imperial Eagle in Spain and thoughts on environmental law and policy as contributing factors in the conservation of species', 17 (5) (2014), *Potchefstroom Electronic Law Journal/Potchefstroomse Elektroniese Regsblad (PER)*, 1828- 1905, page 1828-9.

¹⁰⁶² Santos-Martín F *et al*, 'Protecting nature is necessary but not sufficient for conserving ecosystem services: A comprehensive assessment along a gradient of land-use intensity in Spain', (2019) 35, *Ecosystem Services*, 43-51, page 44.

can be protected and preventive actions can be implemented for the benefit of the environment. To achieve these objectives, spatial planning laws will need to co-ordinate and co-operate with different and competent bodies.¹⁰⁶³ That is, there is now an understood cooperative governance between the Federal State and the Autonomous Regions on self-government regarding environmental protection through the use of spatial planning laws.¹⁰⁶⁴

The Constitution in terms of Article 149.1.1 also states that these exclusive powers and guarantees fall within the State's powers. In accordance with Article 149.1.2 of the Constitution, the State has exclusive powers in the basic co-ordination of economic planning. The Constitution also guarantees that the State has exclusive power in drafting and enacting basic legislation that deals with environmental matters. This affects the whole regulation of environmental issues in Spain. Thus, the legislative powers of the Autonomous Communities on spatial planning laws and urban planning cannot be exercised in a single-handed manner.

Moreover, the application of the Strategic Environmental Assessment (SEA) in new plans in Spain has put in the process of drafting and modifying new plans that have a significant effect on the environment. This was first explained by the European Parliament and Council *Directive 2001/42/EC* of 27 June 2001 and has been transformed into the Spanish law by *Act 9/2006*¹⁰⁶⁵. This has been substituted by *Act 21/2013*¹⁰⁶⁶ which is an assessment of the effects of projects, plans and programs on the environment.

Before the *Land Act of 1956*, urban planning was essentially within the extent of power of the local communities. After the approval of this Act, the Spanish State was given power to guide, survey and approve the plans at the expense of the local communities. They are now two new entities that have been created after the 1976 amendment of the 1956 Act. This was also to solve the discrepancies between the Ministries and that of the Ministry of Public Works and Urban Development, as well as alignment with the new Constitution at that time. The Central Urban Planning Commission now represents the interest of these ministries.

¹⁰⁶³ Trayter M J *et al*, *El desenvolupament de l'autogovern en matèria de territori, paisatge, litoral i urbanisme*, Generalitat de Catalunya, Institut d'Estudis de l'Autogovern, Barcelona, (2017), page 180-1.

¹⁰⁶⁴ González M J, 'Urban Planning System in Contemporary Spain', (2007) 15 (1), *Journal European Planning Studies*, 29-50, page 29.

¹⁰⁶⁵ Ley 9/2006, de 28 de abril, sobre evaluación de los efectos de determinados planes y programas en el medio ambiente. BOE núm. 102, de 29 d'abril de 2006. BOE-A-2006-7677.

¹⁰⁶⁶ Ley 21/2013, de 9 de diciembre, de evaluación ambiental. BOE núm. 296, de 11 de diciembre de 2013, BOE-A-2013-12913.

Spatial planning laws in Spain are now being defined through the use of the principle of sustainable development. Policies should favour the sustainable utilization of natural resources, the protection of the environment, and the improvement of flora and fauna. These policies also state that there should be the protection of the rural environment and the preservation of the land in the rural areas not required for urban development. The Act now states that installations, constructions and buildings should be adapted to the natural environment of the area where located. The developments must be open and adapted to open and rural spaces. The Spanish planning laws prohibits the construction of buildings that breaks the harmony and degrades the character appearance of the landscapes.¹⁰⁶⁷

Furthermore, administrative actions that infringe on the regulations of the governing of natural space and the greenbelt are considered null and void. Any land that has been deemed protected will also remain protected, unless changes have been declared to its natural state which can be expressly authorized by laws that permit such actions. However, this is particularly difficult as land can only be removed from the protected natural spaces and the areas under the Natura 2000 Network when there is scientific justification for such removal of land spaces and area.¹⁰⁶⁸ In the case of the Natura 2000 Network, the proposed change would need to be verified, presented and accepted by the European Commission.¹⁰⁶⁹

Finally, any land development now requires SEA plans and programmes if there is a reasonable chance that there will be a significant environmental damage to the environment. The *Act 9/2006* points to the evaluation of all developmental projects on the environment. The plans and programmes that deal with land zoning and the regulation of land use should be subject to an environmental assessment before being approved in the procedure under the sectorial laws. This must be carried out in accordance with *Act 9/2006* and particular laws on the development of land in the Autonomous Communities. In addition, the re-draft of the text on the *Land Act* specifies that the basic contents need to be included regarding the procedural phases, and the importance of the monitoring aspects of the development plans that directly are related to the principle of sustainability.

¹⁰⁶⁷ See website <https://www.elra.eu/contact-point-contribution/spain/planningurbanisationbuilding-consent-13/>. Accessed 16 January 2021.

¹⁰⁶⁸ Blicharska M *et al*, 'Contribution of social science to large scale biodiversity conservation: A review of research about the Natura 2000 network', (2016) 199, *Biol. Conserv*, 110–122, page 110-1.

¹⁰⁶⁹ Virgilio Hermoso *et al*, 'Realising the potential of Natura 2000 to achieve EU conservation goals as 2020 approaches', Volume 9, Article number: 16087, *Scientific Reports*, (2019), page 1-2.

Any zoning plan can delimit a zone that can be developed and give it a special protection area status in which all the activities that could cause significant environmental damage are prohibited. The urban legislation has now administrative sanctions on any person who infringes upon its prescriptions. The *Criminal Code of 1995* has also criminal punishment in this regard. Thus, in terms of spatial planning law, certain actions can render a person criminally, delictually and administratively liable for actions that cause environmental damages. Directors of companies can also be found criminally liable for unauthorized development projects or tampering with boundaries of protected zones. These are usually natural green areas, landscapes and ecosystems which are legally or administratively recognized.

Nowadays, environmental considerations have to be incorporated into the scope of all development plans and there is now a requirement of the SEA for every developmental plan or projects in Spain. This has also been a consequence of the implementation of the *Directive 2001/42/EC* of the European Parliament and the Council of June 2001, in terms of the assessment of the effects of certain plans and programmes on the environment. In Spain this is specifically dealt with by the *Environmental Assessment Act 21/2013*¹⁰⁷⁰ which transposes the European directive into a Spanish national law. The Autonomous Communities have also enacted specific acts regarding this matter. Each region has its own legislation that governs and regulates the zoning and use of land. For example, the Andalusia Act 7 of 2002, of 17 December on Urban Planning, Castile-Leon, Act 5/1999 of the 8th of April 1999, on Urban Planning and Catalonia, LD 1/2010 of the 3rd of August, which approves the Redrafted Text of the Act on Land Development.

Furthermore, under the general municipal plans there has been some plans that have been put forward to protect the environment. Of particular importance the Special Plans have traditionally played a role in the protection of the environment within the planning framework. These plans can be to protect a particular landscape which has specific areas or ecosystems that need to be protected.¹⁰⁷¹ In many of the cases, the Special Plan usually is used to address areas such as parks or areas that have botanical species. The plan can also be used to address the protection of areas such as forests, and it can restrict the intended disappearance or transformation in forest areas. It is important for the plan to always consider the co-ordination

¹⁰⁷⁰ Ley 21/2013, de 9 de diciembre, de evaluación ambiental. BOE núm. 296, de 11 de diciembre de 2013, BOE-A-2013-12913.

¹⁰⁷¹ See note 1064, page 30.

of different actions and balancing of conflicting or different interests. In addition, the intention of the creator must be considered when reading or studying a Special Plan and a public participation phase to inform the public of such of these plans must always be respected.

2.4 Forest Law

The framework of the Forest Strategy, national forest planning has become an important factor, thus the *National Forest Plan* is the main instrument for the planning of policies that relate to forests. This Plan was approved in 2002 by the Council of Ministers. The Plan relates to the land (restoration, repopulation and sustainable forest management); institutional actions (co-operation and co-ordination of forest policies or policies that relate to forests); and socio-economic and cultural actions (promotion of forest industries, culture and social value of all forests).

The *Act 43/2003* and the *Act 10/2006*¹⁰⁷² have promoted the development of the Forest Strategy with a Forest Plan which should be reviewed by the Autonomous Communities to the development of the PORF (Management Plans of Forest Resources), together with the Management Plans of Natural Resources and the complemented Municipal Urban Planning is focused as the planning instrument. Article 33 requires both private and public forests to have a Forest Management Plan. The documents should be developed upon request by the owner or Autonomous Community forestry organisation. The Autonomous Communities should approve this document and Article 32 also states that the Autonomous Communities have a duty and responsibility for approving the use and management of forests in Spain.

Importantly, public forests are the properties of and managed by the local municipalities in Spain. Moreover, Article 148 of the Spanish Constitution state that municipal forests are under the management and responsibility of the Autonomous Community. The specific legislation that governs forests in Spain is *Act 10/2006* which amended the *Act 43/2003* on forests. The main objectives of the Act are to manage and protect forests in Spain. The Act repealed the *Forest Act of 1957* which was old and needed integration with the Spanish Constitution and obligations from the international instruments which Spain had ratified.

¹⁰⁷² Ley 10/2006, de 28 de abril, por la que se modifica la Ley 43/2003, de 21 de noviembre, de Montes. BOE núm. 102, de 29 d'abril de 2006, BOE-A-2006-7678.

The *Forest Act of 1957* did not have specific provisions regarding the conservation of forests and the ownership of forests. It had provisions for administrative interventions for the protection of privately owned forests and it also established economic projects. Its objectives were to instil discipline in the forest property regime, ease rights over it, and the establishment of a recognisable legal regime of the uses of forests and the forest industry. It also recognised dispositions for defending forests against fires and plagues, as well as building the institutions of National Parks. However, the Act did not consider forests as a whole subject that deserved protection. Furthermore, it only focused on specific forests, their characteristics and location were the most valued information for their protection. Due to this limited scope of the Act, it was seen as a mere forest property law rather than an important environmental law that was aimed for the protection of a valuable natural resource.

It was modified by the *Act 43/2003* which is intended to guarantee the effective conservation of forests, promoting restoration, improvements and sustainable use or exploitation. This Act is based on the principles of sustainable forest management. Forest planning must be integrated into territorial regulation, promotion of rural development and forest products, conservation of forest biodiversity, and the integration of national forest policies with international environmental objectives. The *Act 43/2003* is of great importance to forest protection in Spain. It is aimed at the effective preservation of forests, restoration, sustainable use, improvement, and collective support.¹⁰⁷³ It introduced a new planning instrument which could be used by the Autonomous Communities, known as the Forestry Resources Regulation Plan (FRRP). These plans are used for the planning in the framework of territorial regulation. The *Act 43/2003* as modified by *Act 10/2006* deals with the basic regulation of forest issues. This has introduced new management principles, which are aimed at deforestation prevention and the adaptation of forests to climate change. It also introduces new protective measures and regulations aimed at the prevention and management of forest fires.

The *Act 10/2006* was also amended by *Act 25/2009*¹⁰⁷⁴ which adapted various laws regarding the free access to activities and execution of services. The Act introduced a regulatory modification that states that the government is the one responsible for approving the basic

¹⁰⁷³ Araujo B M, Lobo M J and Moreno C J, 'The Effectiveness of Iberian Protected Areas in Conserving Terrestrial Biodiversity', (2007) 21 (6), *Conservation Biology*, 1423-1432, page 1423-4.

¹⁰⁷⁴ Ley 25/2009, de 22 de diciembre, de modificación de diversas leyes para su adaptación a la Ley sobre el libre acceso a las actividades de servicios y su ejercicio. BOE núm. 308, de 23 de diciembre de 2009, BOE-A-2009-20725.

directives regarding exploitation and regulation of forests. The Autonomous Communities were given the duties of approving instructions for regulating and exploiting forests. That is, the Autonomous Communities have also produced a regulatory forest framework that resembles much of the environmental evolution and great social relevance that has taken place in Spain.

Environmental laws in Spain are important because they recognise the various functions of forests. It creates the legal system for protective forests and forests with other levels of protection. Forests that perform important functions such as protecting human life from rock falls, floods, water regulation in deserts, reducing landslides are also recognised by a register so that the public administrations can ensure that they are protected and properly safeguarded. The duty is also put on the Autonomous Communities to protect such forests.¹⁰⁷⁵

The *Act 10/2006* also introduces another instrument to protect forests by using and adding Article 35bis to *Act 43/2003* which states that: public contracting procedures must be investigated and analysed by the public administrations to prevent and measure the acquisition of wood from illegal logging in Spain or from other countries. The public administrations will also disseminate important information to the general public to promote and encourage sustainable utilisation and consumption of forest products. This is to encourage the use of wood and other products from certified forests and sustainable use of woods to avoid overexploitation.

The land-use planning legislation is also a relevant tool that can be used for forest protection. One of the concept of the *RLD 2/2008* in its objectives is to reconcile land use with the principles of sustainable development. In the Preamble, it states that urban growth must recognise the requirements of sustainable development in order to reduce impact on the environment. The European Territory Strategy recognises that spatial planning in urban areas is important for the protection of natural forests to reduce development that might affect the environment.

Environmental laws in Spain have also been put in place to reduce the loss of soil and eventually desertification. It is to promote the recovery of ecosystems that have been affected immensely by the impact of deforestation in the previous decades. Since most of the land in

¹⁰⁷⁵ Spanish Constitution, Article 148 – (1) viii) *woodlands and forestry and (ix) environmental protection management.*

Spain is arid, the protection of hydrological resources, forests and soil is very important for water security and water for security. The Minister of the Environment has also set up the National Priority Action Plan for the restoration of forests in water resource areas, erosion control and reducing desertification. It participates with the Autonomous Communities in decision-making and co-ordination with the General Directorate on Biodiversity. Its main function is to protect the forests, reduce soil erosion and protect water resources in priority action areas. The Spanish Forest Strategy has also established the National Action Program against Desertification (PAND)¹⁰⁷⁶ to reduce desertification in Spain and with the participation of the Autonomous Communities in these programmes. An order recognised as *Order ARM/2444/2008* of August has been approved with the PAND, this is in compliance with the obligations of the UNCCD.

Forest fires are a major problem in Spain, thus the *Order of June 1989* approved the Basic Plan for forest fires which recognises that forest fires are a serious socio-economic problem that also have an impact on climatology and the environment. It recognises that forest fires reduce biodiversity and can lead to extinction of species. This Order was replaced and substituted by the *Order of 1993* as it was deemed outdated. The resolution by the Council of Ministers approved the Basic Directive which was aimed at emergency civil protection during and after forest fires in Spain.

In addition, the regulations on forest fires can be found in the *Act 43/2003*, on Forests (Chapter III of section IV, Articles 43-50), which revokes the *Act 81/1968*¹⁰⁷⁷ on the issue of forest fires, modified by *Act 10/2006*. The Act prohibits the burning of forests for any purposes, the use of burnt forest areas for at least thirty years, and any other activity that does not allow for the regrowth and regeneration of the forest. This section also prohibits the developments in forest areas affected by fire. These obligations are at the heart of sustainable forestry management in Spain.

However, the Autonomous Communities can make exceptions to remove those prohibitions if they can show that there has been a change of forest area use before the fire took place. The Act gives and grants responsibilities to the public administrators for the reduction of and

¹⁰⁷⁶ Orden ARM/2444/2008, de 12 de Agosto and the Programa De Acción Nacional Contra La Desertificación August 2008. See website on <https://climate-laws.org/cclow/geographies/spain/policies/national-action-program-against-desertification-pand>. Accessed 20 March 2020.

¹⁰⁷⁷ Ley 81/1968, de 5 de diciembre, sobre Incendios Forestales. BOE núm. 294, de 7 de diciembre de 1968, BOE-A-1968-1447.

organisation of defences against forest fires. The public administrators must co-operate with the community affected to adopt methods to prevent and extinguish forest fires irrespective of whether the property is private or public owned.

The Act sets out methods to reduce and prevent forest fires. It requires the State and the Autonomous communities' administrations to establish and co-ordinate specific programmes for preventing forest fire. They are also required to investigate the causes of forest fires in their communities. They are to promote public participation and awareness programmes to improve the prevention methods in sensitive areas. The Autonomous Communities must also set out fire watches and mobilisation of funds and finance to reduce species extinction after forest fires. Members of the public are also obligated to report fires or even extinguish small fires in forests. Spanish environmental laws also require the Autonomous Communities to list high risk zones and these areas must be observed continuously and also must appear in the fire defence plans which should be reported by the community's own administration.

In addition, the Action Plan for the Prevention and Fight against Forest Fires was approved by the Council of Ministers in June 2005. The Plan created the Inter-ministerial Commission on the Prevention and Fight against Forest Fires. The Commission was developed in accordance with ministerial departments so that it can co-ordinate with the Ministry of the Presidency focused on the monitoring and execution of the effective proposed measures. The *Royal Decree 11/2005* also proposed urgent measures to be taken on the issue of forests. These measures were intended to repair, compensate and alleviate, where possible, personal damage was caused by the fire (this Decree was after the Guadalajara fire in 2005, and the Extremadura, *Royal Decree 949/2005* of July 2005).

In addition, environmental laws focused such as *Act 3/2010*¹⁰⁷⁸ have been introduced to reduce damage caused by forest fires and any other natural disasters occurring in the Autonomous Communities. This is also aimed at reducing forest fires since they can destroy property, human lives and natural resources. It is necessary to manage emergencies with the efforts of the Minister to address issues that can also affect rural areas in Spain. These efforts are collaborated with the participation of the State Security Forces and Military Emergency Unit. The Act allows for the administrations to establish extraordinary measures within the constitutional

¹⁰⁷⁸ Ley 3/2010, de 18 de febrero, de prevención y seguridad en materia de incendios en establecimientos, actividades, infraestructuras y edificios. Publicado en DOGC núm. 5584 de 10 de Marzo de 2010 y BOE núm. 89 de 13 d'Abril de 2010.

framework, thus recognising the application of equity and equality of all citizens in Spain after a forest fire.

Article 1 states that the measures that will be established must apply to the areas where the communities were affected by the fires. Article 2 recognises that aid must be provided to personal injury, property, agriculture and natural resources or any other services. Furthermore, Article 6 states that there must be compensation for damages in the agricultural sector. Article 13 focuses on post-fire forest restoration. The Minister of Environment Affairs can authorise special action for affected forest areas and environmental restoration. The Minister can declare actions that have been recognised by the Department to restore these areas destroyed by fire.

Thus by *Royal Decree*,¹⁰⁷⁹ the government may declare, with delimitation of the municipalities and the forest area affected by the fire. The *Royal Decree 613/2001* also states that certain loans can be granted by government for the modernization and improvement of structures that reinforce the conservation and protection of agricultural and forest lands. These efforts can also be focused on erosion control and the reduction of desertification. The actions must make forests resilient against rain and effects of climate change. The actions need to reduce the loss of species recorded on the List of Wild Species in special protection regimes. This also extends to spaces that have been demarcated under the Natura 2000 Network, spaces that are particularly important for specie habitats, and different types of habitats of community interests.

2.5 Protected Nature Areas

In Spain, national parks are seen as natural areas that are important due to their ecosystems and ecological values. These are also governed by *Act 5/2007* of the National Parks Network. Natural reserves are natural spaces protected to preserve ecosystems, because of their rarity, importance and fragility. The exploitation of resources is limited in these areas, thus the collection of biological resources is prohibited unless permitted by prior administrative authorisations for educative and research reasons.

¹⁰⁷⁹ RD 344/2010 of March 19, extends the scope of Law 3/2010, approving urgent measures that can alleviate damages that has been caused by forest fire.

The zoning of this land will establish the relevant permits, the buffer area around the park, and the prohibited activities for each level of classification.¹⁰⁸⁰ These levels start from major to minor protection depending on the sort of ecological characteristics in the area.¹⁰⁸¹ As seen above, in Spain there are various zoning categories, namely the reserved zone, restricted use zone, moderate use zone, traditional settlements zones and special use zone.¹⁰⁸² These areas are now included and integrated into a system of protection and management which is the National Parks Network.

The *Act 5/2007*¹⁰⁸³ on the National Parks Network aims to establish the legal system of National Parks Network, its objectives are a general interest by the State. The management of National Parks means that the area becomes zoned and there are delimitations of its distinctive different areas and uses. That means the area will be zoned for natural resource protection and with restrictions for development projects.¹⁰⁸⁴ The main objectives of the protected landscape management is to conserve everything that makes an ecosystem special and preserve the harmonious interactions between human beings and other species. In addition, the responsibility to protect natural spaces is usually given to the Autonomous Communities.

There has been some controversial Constitutional Court judgements, for example the *194/2004* of November¹⁰⁸⁵; the *35/2005* and the *36/2005* of the 17th of February have declared the co-joint collaborative management system of parks between the State and the Autonomous Communities unconstitutional for the parks that were being controlled or owned inter-community.¹⁰⁸⁶ The court has also granted the States administration in inter-regional national parks unconstitutional, even though it was stated before as a co-management system. This was because it violated the Autonomous Region's jurisdiction on protected areas and independence

¹⁰⁸⁰ Mas J, 'Assessing protected area effectiveness using surrounding (buffer) areas environmentally similar to the target area', (2005) 105, *Environmental Monitoring and Assessment*, 69–80, page 69-70.

¹⁰⁸¹ Scott J *et al*, 'Nature reserves: Do they capture the full range of America's biological diversity?', *Ecological Applications*, (2001) 11, 999–1007, page 999-1000.

¹⁰⁸² Rodríguez-Rodríguez D and Martínez-Vega J, 'Assessing recent environmental sustainability in the Spanish network of National Parks and their statutory peripheral areas', (2017) 89, *Applied Geography*, pages 22-4.

¹⁰⁸³ Ley 5/2007, de 3 de abril, de la Red de Parques Nacionales. BOE núm. 81, de 04/04/2007. BOE-A-2007-7108.

¹⁰⁸⁴ Andam K S *et al*, 'Measuring the effectiveness of protected area networks in reducing deforestation', (2008) 105 (42), *PNAS*, 16089–16094, pages 16089-91. See also Naidoo R *et al*, 'Integrating economic costs into conservation planning', (2006) 21, *Trends Ecol Evol*, 681–687, pages 681-3.

¹⁰⁸⁵ Pleno. Judgment 194/2004, of 04 of November of 2004 (BOE núm. 279, de 01 de December de 2004). See case on <http://hj.tribunalconstitucional.es/docs/BOE/BOE-T-2004-20437.pdf>. Accessed on March 19, 2020.

¹⁰⁸⁶ Pleno. Judgment 35/2005, of 17 of February of 2005 (BOE núm. 69, de 21 de March de 2005). See case on <http://hj.tribunalconstitucional.es/docs/BOE/BOE-T-2005-4667.pdf>. Accessed on March 19, 2020.

or self-organisation of their regional services. The Court explained that the State was a co-ordinator which was supposed to implement methods which affected the Autonomous Communities. Thus, the duties are now embedded in the administrations of the Autonomous Regions.

Autonomous Communities can now manage their parks which fall in their jurisdictions and territories, and this needs to be integrated in a sustainable and suitable planning manner with all their activities. The *Act 5/2007* states that with regard to the National Park Network, established national parks are to be managed by the Autonomous Communities who have power within their boundaries; this is except sovereign national parks which are not linked physically to the land that is situated in the Autonomous Community. If the park crosses over regional boundaries the two Communities will decide how to manage the area.

The declaration of a national park is the responsibility of the Autonomous Communities or National Government. The plan of the national park will have to also be approved by the Autonomous Communities in which the park will be located. Importantly, national laws will have to be used in various ways to incorporate the national park into the National Parks Network. A proposal for a new national park must be viewed and debated by the public for at least a two month period and must also be submitted to the Network Council before it is submitted to the Ministry of the Environment. Thus, national parks are seen as autonomous administrative public bodies, dependent on the Ministry of the Environment. The Ministry is responsible for the development, planning, management and co-ordination of the National Parks Network, this body is also responsible for the management of forests and lands.¹⁰⁸⁷

Every development project in and around the buffer zones will need to have an EIA process before any project commences. These are areas around national parks and protected areas which can span to a radius of ten kilometers or more. The EIA process will also take into account the ecological character of the area, fragility and how this ecosystem can be preserved.¹⁰⁸⁸

¹⁰⁸⁷ Eulàlia Comas, Santi Pérez, Sara Pont and Carles Castell, Natural heritage and biodiversity strategy of Catalonia 2030, Government of Catalonia, 1-258, page 62. See website on http://mediambient.gencat.cat/web/.content/home/ambits_dactuacio/patrimoni_natural/estrategia_patrimoni_biodiversitat/Estrategia_patnat_biodiversitat_EN.pdf. Accessed on 16 January 2021.

¹⁰⁸⁸ Naughton-Treves L, Holland M and Brandon K, 'The role of protected areas in conserving biodiversity and sustaining local livelihoods', (2005) 30, *Annual Review of Environment and Resources*, 219–252, page 220-1.

In addition, Article 2 of the Act specifies that the public bodies and the Public Administrations have the obligation in their respective areas of competence to ensure the required protection of National Parks Network. The National Parks in Article 3 (a) have been defined as natural spaces with high ecological value and where human exploitation has to be reduced, because of their outstanding beauty and diverse ecosystems. This can also include aesthetic, cultural, scientific and educational values that need to be conserved and that are of general interest to the State.¹⁰⁸⁹ Article 3 (b) states that National Parks Network is explained as a system of declared National Parks which are valuable, the basic regulatory framework and the many systems that are related to the functioning of the national parks.

Furthermore, Article 6 of the Act regulates the Network Council which is a consultant body established by the *Act 4/1989*¹⁰⁹⁰. The *Act 5/2007* has now expanded its powers and now governs broader aspects of national parks. The Network Council composes of the Autonomous Communities in which the park is located, community or municipal representatives in the parks' area, representatives of associations and the heads of boards which are involved in the protection of the environment, and the owners of properties around the borders of the park. The Council is responsible for providing valid and required information on any proposals for new parks, modifying the already existing parks, the Master Plan of the Parks Network and revisions, State provisions that affect national parks, the annual report of the Spanish National Parks Network, the Ministry for the Environment triennial reports that will be reported to the Senate, and also the Management and Use Master Plans of the different national parks before they are reported.

In addition, Article 7 of the *Act 5/2007* maintains a Master Plan for all national parks in the Networks. The Master Plan is the basic instrument that can be used for co-ordinating and achieving the objectives of the National Parks Network and the Master Plan was approved by the *RD 1803/1999*. The Plan usually has a basic plan on how to protect the national parks and include actions to preserve the image and internal coherence of the park networks. It must also provide guidelines which must be followed by the Management and Use Master Plans of the National Parks. The Master Plan sets out the ten year plan on the preservation, research,

¹⁰⁸⁹ Bruner A *et al*, 'Effectiveness of parks in protecting tropical biodiversity', (2001) 291, *Science*, 125–128, page 125.

¹⁰⁹⁰ Ley 4/1989, de 27 de marzo, de Conservación de los Espacios Naturales y de la Flora y Fauna Silvestres, BOE núm. 74, de 28 de marzo de 1989, BOE-A-1989-6881.

education, public use and awareness of all national parks. It makes sure that there is collaboration and co-operation between administrations, national and international bodies.

The Act also has established the basic concepts of the Management and Use Master Plans, this has to be approved by the management team of the national parks in terms of Article 17. It also establishes the basic contents of the Management Board which participates in the socialisation of the national parks (Article 18). These Boards issue reports on all aspects regarding the management of the park and must also choose the representatives, the institutions, associations and administrations that are linked with the activities and environmental organisation of the park.

Further, Article 9 specifies exactly what constitutes a National Park and states that it is highly representative in terms of species and the natural characteristics, natural systems of species and communities; or that are threatened in Spain and requires conservation and protection. The National Park must also be continuous and unregimented. This area will have to exclude human actions such as agriculture, mining, forestry or water extraction.

Importantly, Article 13 explains that national parks are put forward to establish activities and that the public administrations must take note of public utility and social regulations to achieve the functions of the Network; the legal purposes of a declaration of national parks also establishes the competent administration which has the duty for legal acts. This also establishes the various activities that can be performed in national parks. Furthermore, this will ensure that decisions are made by the right public authority on which land should be set aside for water resources.¹⁰⁹¹

Currently, this National Parks Network constitutes more than fourteen National Parks. This will require the drafting of a Natural Resources Regulation Plan that needs to be approved. Thus, buffer zones will need also to be zoned out under specific planning from the Autonomous Communities and municipalities where such an area is protected. The areas of socio-economic influence should also be established to ensure that there is contribution and compensation socially and economically to the population in that region or community.

¹⁰⁹¹ Brandon K, Redford K and Sanderson S, *Parks in Peril: People, Politics and Protected Areas*, Washington DC: Island Press; (1998), page 441.

The Spanish authorities are also strict in the application and supervision of environmental obligations.¹⁰⁹² Developmental permits or economic licences usually include conditions and regular supervision or inspections are carried out. Serious infringements can result in any environmental crimes being reported to the Public Prosecutor who can initiate criminal, civil or administrative sanctions.

The *Act 5/2007* also creates the Spanish Inventory of Protected Natural Spaces, Natura 2000 Network, and areas which are protected by international agreements. This has been included in the Spanish Inventory for Natural Heritage and Biodiversity and will also be dependent on the Ministry of the Environment. The Spanish Inventory of Protected Natural Spaces is aligned with the international commitments (especially the CBD) and the internationally established categories, likewise those established by the International Union for the Conservation of Nature (IUCN). There is also a section on the creation of a network of biological and genetic material banks. The Spanish Inventory of Wild Species' Biological and Genetic Material Banks will contain all the relevant information regarding this matter.

Furthermore, the Act has also established measures to reduce invasive species in Spanish forests. The creation of the Spanish Catalogue of Invasive Species will contain all the exotic species and other sub-species that can cause a serious threat to the habitats, ecosystems, and also native species. In addition, Section IV has a primary focus on promoting the sustainable utilisation of biodiversity. This is centred on the Spanish Biosphere reserves that form part of the World Biosphere Reserves Network of the MaB (Man and Biosphere Reserve) Programme of UNESCO. The regulation, characterization and promotion of these important Biosphere Reserves has been based on the fact that the integration, participatory and sustainable management of natural resources aims to combine biodiversity conservation and sustainable development of ecosystems. This will improve the welfare of the population, recognise public participation in research and education in the integration of development and the environment, and training on how to protect the resources.¹⁰⁹³

The *Act 5/2007* regulates functions of the General State Administration for achieving its main objectives. It also sets the objectives of the Network Council and the main characteristics of

¹⁰⁹² Domenech J and Herreros F, 'Land reform and peasant revolution. Evidence from 1930s Spain', (2017) 64, *Explorations in Economic History*, 82–103, page 82-3.

¹⁰⁹³ Cynthia C *et al*, 'The evolution of soil conservation policies targeting land abandonment and soil erosion in Spain: A review', (2019) 83, *Land Use Policy*, 174–186, page 183.

the Administrative Plan for the National Parks Network. The functions of the General State Administration includes the review and creation of the Administrative Plan for National Park Networks. This also includes monitoring and evaluating the Network, thus also the development and funding of the specific programmes of the actions of the Network, including the Plan; as well as proposing co-operation mechanisms that can help in achieving the objectives of the National Parks and the Network. This is also aimed at the promotion of the improved knowledge of issues which relates to the Network, giving information and representing the country of Spain within its international networks. The Act establishes ways to monitor and assess the degree to which the Network's objectives are being complied with. A report has to be compiled every three years, to report on the protection and threats that are facing the Park's administrative bodies and the situation in each National Park.

In addition, the Natural Resources Plans, also known as *Plan de Ordenación de los Recursos Naturales* (PORN) and the Management and Use Rector Plans (PRUG) have been put forward regarding some of the specific natural spaces that are important and deserve special protection. The PORNs objectives are to identify the conservation processes; sustainable use of biodiversity; establish protected regimes for ecosystems and natural resources; and promote measures for the conservation of biodiversity and natural resources. In addition, it also helps to establish and consolidate ecological networks composed of spaces with highest values of plants and animals which guarantees the functionality of ecosystems. The Special Plan is binding on the Autonomous Community's substantive environmental legislation. This is to say, if the urban planning and the Special Plan was in contradiction, the urban plans would have to be developed and adapted to protect the environment.

Over the years the number of declared protected areas in Spain have increased. These areas have been approved under various Autonomous Communities for the protection of the environment under national or regional normative which represents Spanish territories. However, as any environmental matter in Spain this has also encountered some burdens. The implementation of the important Natura 2000 Network, just like any other ENPs, depends on the Autonomous Communities. Some Autonomous Communities administrative authorities have opposed the application of these plans in their regions and displayed opposition as anti-conservation collectives.¹⁰⁹⁴

¹⁰⁹⁴ Sergi Nuss-Girona et al, '50 Years of Environmental Activism in Girona, Catalonia: From Case Advocacy to Regional Planning, (2020), (9) (172), *Land*, 1-21, page 5 and 18.

Moreover, the strategy of these Autonomous Community authorities is to reduce the size of protected areas and stick to the areas that are essential. That means also closing zones which can start conflicts and are planned for developmental projects with impacts on the environment. The number of cases where protected areas have been minimised and fragmented to give way to developmental projects continues to increase yearly in Spain. The main actors in refusing the demarcation of protected areas seems to be the Autonomous Communities of Catalonia, Basque Country, Galicia, Valencia, Extremadura, Andalusia and Canary Islands.¹⁰⁹⁵

Demarcation of protected areas in general means activities that affect the environment should be stopped, the area should be condoned off and protected through regulation and policies in theory. The overall impression in Spain is that this is not the case, since there are many aggressions to these protected areas and these are numerous. The reporting, monitoring and evaluation also seems to be a contentious issue and has become simply impossible.

However, a number of environmental groups in communities have been set up to dedicate their efforts of protecting these areas and fighting all types of environmental degradation. The well known ones have been fighting transport infrastructure development such as highways, railway tracks, harbours and airports. These groups also expand their activities in Catalonia (Girona) in activities they protest such as huge tourism and leisure complexes, disproportionate urban expansion, industrial and energy projects to name a few.¹⁰⁹⁶

Many of the Natura 2000 Network areas have been damaged by activities in Spain. For example, Tablas de Daimiel National Park has seen issues between Murcia which aimed in the past to demarcate certain parts of the park as urban areas, doubling the M-501 highway road to Madrid. The expansion of the Ciudad Real Airport is another striking example that has caused conflict. In Catalonia there has been protest between environmental activists and the tourism lobbyist in areas such as Lloret del Mar. The tourism sector wants to continue building hotels and tourism facilities for tourists. Many residents oppose this as during the winters of Spain these areas are left deserted and this has also increased rental prices in areas near the beach.

¹⁰⁹⁵ Ann McFall, 'The Spanish greens and the political ecology social movement: A regional perspective', PhD in Politics, the University of Edinburgh, (2012), page 1-356. See website on <https://era.ed.ac.uk/bitstream/handle/1842/6443/McFall2012.pdf?isAllowed=y&sequence=2>. Accessed on 16 January 2021.

¹⁰⁹⁶ See note 1094.

These environmental activists have claimed that the Autonomous Communities should stop financing these government tender drawn projects immediately.¹⁰⁹⁷

The protection of forests in Spain is a serious problem that has been aggravated by the serious political issues. There are also other factors that have affected the environment in Spain because of its natural characteristics of hot summers. The issue of climate change which will affect all of specie life in Spain. Given that the impacts of climate change will severe for the environment, Spain needs to improve on its political governance.

Thus, the relation between State and the Communities need to be coherent to allow effeciency and effectiveness in the application/implementation of environmental laws in Spain. Harmony, cooperation and coordination will certainly help Spain fight off some of these climate induced changes on the environment. Secondly, the nature of economic issues facing every region has defined how each Autonomous Community reacts and implements environmental laws and regulations. Moreover, the Ministry of Environment is now seen as a scapegoat and an obstacle to the development of some Autonomous Communities.

2.6 National Heritage and Biodiversity

The *Act 42/2007*¹⁰⁹⁸ on *Natural Heritage and Biodiversity* together with *Act 5/2007* on the National Parks Network are the basic nucleus legislation for nature conservation and management. The Autonomous Communities have important roles in this issue, in that they have legislative and management competencies. The *Act 42/2007* has established protection, restoration, preservation and management measures regarding natural resources in Spain. The Act also focuses on protected natural areas and the protection of wild flora and fauna. This legislation on natural spaces also deals with the protection of ecosystems. The *Act 42/2007* declares that protected natural areas are areas that contain systems that are natural and special as they have been set aside for the protection and maintenance of biodiversity, natural resources and are then declared protected natural areas.

¹⁰⁹⁷ See note 1094.

¹⁰⁹⁸ Ley 42/2007, de 13 de diciembre, del Patrimonio Natural y de la Biodiversidad, BOE núm. 299, de 14/12/2007. BOE-A-2007-21490.

Furthermore, in Spain the *Act 47/2007* is a special Act that protects landscapes. The Act has maintained the regulation of *Act 4/1989* which was a step forward in protection and preservation of landscapes. It created the concept of ‘protected landscape’ as a protected natural space in Spain. The protected landscapes are places protected due to their aesthetic, natural beauty and cultural value. These protected landscapes can also be included into the Natural Parks Network.

Spanish environmental laws have established several limitations on activities which could be carried out in protected areas if they are likely to cause significant environmental damage. It has promoted an EIA on any project or development that could cause a significant damage to the environment (including deforestation); any activity that could result in the significant transformation of the area is prohibited any activity to be carried out should respect the surrounding ecosystems; the use of natural resources will be limited in the National Parks; zoning of boundaries are to be respected; dumping of waste is prohibited; altering the landscape conditions is prohibited; and the storage of waste is also prohibited.

The *Act 42/2007* has established the basic legal system for the conservation, improvement, sustainable use and restoration of Spanish biodiversity. This brings the Spanish law in line with the European and international instruments that Spain has ratified. The Autonomous Communities have specific internal organisation for nature preservation, although some have not taken relevant competences to protect natural spaces. Those communities that have taken exclusive responsibilities in their regions have the necessary competencies to draft and execute their legislation and creating basic legislation for nature conservation.

In addition, an important innovation in *Act 10/2006*¹⁰⁹⁹ was the creation of the natural heritage fund. The fund has not been absorbed by the Fund for Natural Heritage and Biodiversity which was created by the Article 74 of the *Act 42/2007* on Natural Heritage and Biodiversity. The main objectives are to implement measures that can support the purposes of this Act, namely sustainable forest management, prevention of fires in forests, forest protection, and natural areas which are funded by the General State Administration.

The General Directorate for Natural Environment and Forestry Policy which is under the Secretary General for the Rural Environment exercises the national powers according to the

¹⁰⁹⁹ Ley 10/2006, de 28 de abril, por la que se modifica la Ley 43/2003, de 21 de noviembre, de Montes. BOE núm. 102, de 29 d’abril de 2006, BOE-A-2006-7678.

RD 1130/2008, falling within the given powers and competences of the Ministry of Environment. These powers are as follows, namely the formulation of the Spanish strategies on National Heritage and Biodiversity and its sectorial plans; the drafting of reports prior to the Declaration of Environment Impact (which are then submitted by the General Directorate of Quality and Environmental Evaluation); drafting the common criteria for development, financing and management of the Nature 2000 Network and of the protected natural spaces; actions that are specific to the scientific authority on the CITES and the promotion of biodiversity conservation. This also is aimed at the promotion of the co-operation, co-ordination, and participation and monitoring of ministries, international organisations and communities.

There are also bodies which are sub-directorates within the General Directorate for the National Environment and Forestry Policy. The sub-directorates are as follows: the General Sub-Directorate for Biodiversity which has competencies to formulate the Spanish strategy for Natural Heritage and Biodiversity and its sectorial plans; and the General Sub-Directorate for Natural Heritage and Biodiversity which is responsible for the creation of the Spanish Inventory for Natural Heritage and Biodiversity in accordance with Article 9 of the *Act 42/2007* on Natural Heritage and Biodiversity, the development of the EIONETNaturaleza Network and the important centre of the European Environment Agency.

Importantly, Article 9 explains the use of the National Heritage and Biodiversity Inventory which also has information regarding Inventory and Forestry Statistics in Spain, Traditional Knowledge, Protected and Threatened Wild Species, and Inventory of Protected Natural Spaces, the Natura 2000 Network, and Internationally Protected Areas. Furthermore, the Strategic Natural Heritage and Biodiversity Plan (Articles 12-14) detail the important function of protecting habitats and species. It defines objectives, actions and criteria that can promote conservation, restoration and sustainable use of natural resources and biodiversity. It diagnoses the state of natural resources in Spain and whether or not the objectives have been reached on actions identified and taken by the General State Administration. This maintains its instruments for planning natural resources used in the PORN and Directives for the Regulation of Natural Resources, created by the *Act 4/1989* (Articles 15-23).

The Strategic State Plan for Natural Heritage and Biodiversity, the Ministry of the Environment and the Spanish Autonomous Communities craft and draft together some of the directives that regulate natural resources. The Autonomous Communities' PORNs should comply with these

directives, and define criteria and regulations that can govern both the management and use of natural resources. Furthermore, the Natural Heritage and Biodiversity Fund under Article 74 seeks to co-fund and ensure the objectives and territory cohesion of the Act is achieved. It seeks to apply measures that are designed to support sustainable forest management, prevention of fire, and protection of forests that are funded by the General State Administration.

The complicated situation that affects Spain's biodiversity, is its current social and economic climate. In particular, the existence of political lobby that can be labelled anti-conservation. These lobbies are not structured as normal lobby as they have political power vested in political parties. If any legal or administrative initiative is proposed by the Federal State these lobbies will react in an inadmissible manner, which is sometimes aggressive and employing misleading information to the general public at large. This problem has been reflected in the processes of approval of the much important Natura 2000 Network and the Law of Natural Heritage and Biodiversity. The conglomerate which was led by a section of the hunting, agriculture and right-wing political parties were determined to stop this bill and mobilised a number of social groups. These pressure groups hinder the general view that greater attention should be given to environmental protection.¹¹⁰⁰

2.7 Climate Change and Emissions

In addition, *Act 1/2005*¹¹⁰¹ regulates the greenhouse gas emissions rights trading regime in Spain. Forests also sequester carbon dioxide from the atmosphere. This is important in the protection of forests because deforestation increases the carbon emissions, thus affecting climate change as we have seen in the previous Chapters. This law was under the *Directive 2003/87/EC* of the European Parliament and Council which established schemes for the green gas emission trading allowances in the European Community and also amending the *Directive 96/61/EC*. These Directives have been agreed within the European Climate Change Programmes so that Member States can reduce emissions, after ratifying the UNFCCC. The scheme is based on the trading of clean technologies with developing countries under the Kyoto Protocol.

¹¹⁰⁰ See note 1094.

¹¹⁰¹ Ley 1/2005, de 9 de marzo, por la que se regula el régimen del comercio de derechos de emisión de gases de efecto invernadero, BOE núm. 59 de 10 de Marzo de 2005.

The *Directive 2003/87/EC*¹¹⁰² is based on the objectives derived from the Kyoto Protocol and the Convention by reducing the costs of reducing emissions; complementary efforts be carried out within the internal measures and policies; and reduction of distortions and functioning of the internal markets. The Act has been passed in Spain for the reduction of greenhouse gas emissions in trying to mitigate and adapt climate change. The General State Administration and the Autonomous Communities are required to communicate, co-operate and collaborate in matters aimed at mitigating climate change in different sectors. This will also allow technological improvements such as green technology, and also allowing for clean development and joint implementation programmes of the Kyoto Protocol.

Moreover, Article 4 states that any project to take place in the Autonomous Regions must be monitored, evaluated and inspected on stated dates. These authorisations should also be certified and a greenhouse gas emission authorisation must be given by an authorised competent body. That is, proper notification and assessment of the project must be done by a regional body. The obligations to monitor emissions according to specific methodology are in accordance with Annex III of this law and with *Decision 2004/156/CE* of the *Commission of 2004*, which established the guidelines for monitoring and reporting of greenhouse gas emissions in accordance with the *Directive 2003/87/EC*. The obligation to provide information also follows this pattern but with the stated or implemented regulations.

The Article 14 state that Spain has a *National Allocation Plan* to reduce greenhouse gas emissions. This determines the amount of emission rights reserved for new and old projects. It also gives a detailed account of which sectors contribute the highest greenhouse gas emissions, with deforestation recognised. These obligations are assumed from the Kyoto Protocol and the UNFCCC. The National Allocation Plan must also promulgate laws and regulations that are meant to reduce greenhouse gas emissions as per the required obligations of the international instruments; and the Plan should be approved by the government through proposal under a Royal Decree. The Ministers of Finance, Industry, Trade, Economy and Environment must also participate and report through the National Climate Council and the various commissions that co-ordinate climate change policies.

¹¹⁰² Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003. This Directive creates GHGs trading within the Communities. See website on <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32003L0087&from=EN>. Amending Directive 96/61/EC. Accessed on March 12, 2020.

An assurance right to emit greenhouse gases can be outside Spain in a developing country. This usually happens when Spain carbon trades with another developing country, but can also offer scientific knowledge and green technology. If certain corporations have infringed these rights, they can be charged in terms of criminal, civil or administrative sanctions.

2.8 Impact Assessments

The Spanish legal system incorporates the EIA, which evaluates projects that can cause a significant environmental damage, as a member of the EU. It assesses the effects of certain plans on the environment. In the EU this is regulated by the two different Directives, namely *Directive 2011/92/EU* of 13 December 2011 (this Directive codifies the *Directive 85/337/EEC* and its amendments) and the *Directive 2001/42/EC*. In Spain the basic law that applies to the EIA is *Act 21/2013*¹¹⁰³. It unifies the EIA and the Strategic Environmental Assessment (SEA) that deals with plans and programmes that reduce environmental degradation. The *Act 21/2013* establishes the certain provisions that should be applied to State legislation and also adds other provisions that are applicable to EIA State projects, plans and programmes. The *Act 21/2013* incorporates the *Directive 2011/92/EU* into the Spanish Law.

Article 7.1 of the *Act 21/2013* establishes that public and private projects that consist of installations or works or any other activity listed on Annex I must follow a general ordinary EIA procedure. These are the projects with a higher probability of causing a significant environmental damage. The activities listed in Annex II must follow the general ordinary process of screening if the competent administrative environmental body has decided to carry out these screening procedure on a case by case basis. The environmental body relies on the decision and criteria that have been established by Annex III of the Act. Furthermore, *Act 42/2007* on Natural Heritage and Biodiversity also considers landscape environmental assessments on sensitive zones and protected natural zones.

In addition, Article 33 of *Act 21/2013* states that the ordinary procedure of the EIA of projects includes scoping, environmental impact study, consultation and public participation, and the statement which is the environmental impact declaration. The EIA procedure includes a public consultation and awareness process of interested persons. This includes the description of the

¹¹⁰³ Ley 21/2013, de 9 de diciembre, de evaluación ambiental. BOE núm. 296, de 11 de diciembre de 2013, BOE-A-2013-12913.

project and its relevant activities, an analysis of the alternatives and a justification for these alternatives, an environmental inventory, and the description of ecological or environmental interacts, prevention measures, synthesis documents and an environmental monitoring programme. The final procedure regards the environmental impact statement which is an administrative decision which must be adopted into the authorisation framework of the projects submitted to the EIA. The lack of such a statement means that the process is null, this is under Article 62 for example of the *Act 30/1992*¹¹⁰⁴ on the Legal Regime of the Public Administrations and Common Administrative Procedure. The environmental statement prevents projects taking place on outdated assessments.

The Act *21/2013* has a number of sanctions that can be imposed on a list of violations. The nature of the EIA procedure means that it is subject to specific sanctions systems of the authorisation procedure. The legislation has specific sanctions that should be taken if any EIA procedure has been improperly executed. These may include suspension of activities (if a project started without the compulsory EIA); restitution of the environment (if the EIA was not taken properly and this led to an environmental damage); and compensation for loss and damages (if the project has resulted in any losses and the damages which arose). This decision can be made by the environmental body. In addition, the Autonomous Communities can also regulate the EIA procedure within their powers to legislate in their regions.

Various protected areas have been demarcated around Spain since it ratified a number of international environmental instruments. Over the years, Spain has strengthened its environmental regulations, institutions and policies through the initiatives of the Organisation for Economic Co-operation and Development (OECD) and on the basis of the EU directives. There has been more focus on biodiversity conservation due to the Natura 2000 proposals. Spain also co-operates with its Mediterranean regional neighbours in reducing environmental degradation and damage through transboundary co-operation and co-ordination.

With the negative impacts of climate change starting to emerge, Spain's environmental assessment procedures appears hastier as they can be pushed aside by an Autonomous Community which seeks to invest on infrastructure. Further, Spain has no mechanism to punish Autonomous Communities if they do not follow their State guidelines. It is simply based on

¹¹⁰⁴ Ley 30/1992, de 26 de noviembre, de Régimen Jurídico de las Administraciones Públicas y del Procedimiento Administrativo Común. BOE núm. 285, de 27 de noviembre de 1992, BOE-A-1992-26318.

moral, encouragement and hope that the Communities follow. Moreover, Autonomous Communities can publish planning and environmental assessment processes, taking into consideration some or a few guidelines that have been promulgated or proposed by the State.

Since the economic crisis in Spain (2008), every Autonomous Community is providing human and economic resources to development at the expense of the environment. In full view of the situation, it seems Spain environmental laws and regulations are failing to deal with intergration sectorial policy issues in order to protect the environment. There is a human - environmental conflicts that need to be addressed, public awareness and education is also needed. However, it seems political prospect and landscape is difficult to manoeuvre and the issue is complicated more if climate change is taken into account. The effects of climate change certainly will have unquestionable effects on some of Spain's biodiversity and ecosystems.

2.9 Liability Questions

The Spanish Constitution has established provisions that relate to liability with regard to environmental matters. Article 45 (3) states that criminal or administrative sanctions can be established for violation of environmental legislations, and that wrongdoers will be required to remedy and repair the environmental damage caused. The legislators aim to take action against anyone who breaches environmental regulations. With Article 53 (3) of the Constitution in mind, it is necessary to return to the general legislation that established environmental liability in the Spanish legal system. The mention of environmental liability in the Spanish Constitution enhances the importance of these questions in the Spanish environmental law system.

Historically, Article 45 of the Constitution dealt with environmental crimes and was included in the *Criminal Code in 1983*. The Article 347bis of the Criminal Code was also introduced in 1983, but had certain deficiencies. However, the new Criminal Code has been provided and approved by the *Organic Act 10/1995* which brought significant progress and clarified environmental criminal liability in Spanish environmental law. Such environmental crimes may include illegal logging, forest damage and degradation.

Individuals who breach criminal norms with criminal intent or negligence, may well be prosecuted and convicted for a criminal offence. Article 31 of the *Criminal Code* states that managers or company representatives are deemed liable for criminal offences that are

committed by the company since they are in charge and have the power to make decisions. Importantly, the *Criminal Code of 2010* has modified and amended this section in that the new Article 319 allows for a legal person such as company to be held criminally responsible for committed environmental crimes on behalf or by these legal persons who own or work for the company. This is because of their *de facto or de jure* legal and administrative representation of the company.

Criminal sanction arises when specific conditions are met; there is breach of administrative environmental legislation; and this breach is a serious infringement. It is usually the decision of the court to decide on what constitutes such serious infringements and that a fine is not sufficient punishment for the infringement committed. There is currently a debate in Spain on the acceptability and limits to the criminal sanction's use in environmental offences. Forests are well represented in Article 332-337 which specifically makes it a criminal offence to cut, burn, uproot, harvest and illegally traffic any tree species. Criminal proceedings can eventually lead to a prison sentence.

The *Criminal Code* amendment is in line with the European Parliament and Council *Directive 2008/99/EC* of November 2008 which is focused on the use of criminal law to protect the environment. This Directive encourages Member States to adopt the necessary measures to recognize criminal prosecutions when environmental offences are committed. The Article 8 of the Directive goes further in stating that Member States may adopt necessary measures to comply with this Directive provisions before December 2010. The Spanish State has passed the *Organic Act 5/2010* which came into force in December 2010 with a new set of provisions under the *Criminal Code*.

In addition, this has also brought a set of criminal codes that relate to the dumping of waste. Moreover, if there is a case of forest land contamination the *Royal Decree 9/2005* also lists activities that potentially can contaminate the land. It states that this land should be decontaminated and a regional authority must certify that it has been done. Thus, if issues occur with the decontamination, the regional authorities can include additional measures to fully decontaminate the land. The government can also obtain aesthetic monetary damages from the polluter who has damaged public assets.

The State has the power as the public administration to impose sanctions for breaches of any environmental legislation. Alternatively, a public administration can be sued or is liable for

actions any damage they cause (this can be omission or commission). An administrative fine can also result when a court of law which can set administrative fines, the term and method of payment in accordance with the *Criminal Code*. Additional changes have also been made due to the *Environmental Liability Directive of 2004/35/CE* with regard to Prevention and Remedying of Environmental Damage. This Directive promoted the establishment of the *Environmental Liability Act 26/2007*¹¹⁰⁵.

Spanish citizens can hold any public administration liable by broad monitoring, participation and enforcement of powers. The *Act 4/1999* (amended the *Act 30/1992*¹¹⁰⁶) established a legal route in applying this legal issue of access to justice and public participation. The *Act 30/1992* also established strict liability in Spanish environmental law. Claims against the Spanish public administration should follow a definite route under the *Act 30/1992* and the *RD 429/1993*. This proceeding starts *ex officio* or with the interested party, as the public administration collects and gathers evidence or information of the interested party.

In addition, a public citizen in Spain can also be held responsible by an administrative sanction. The public administrator can impose fines, installations and shut down these establishments that damage and degrade the environment. The above recourse options are indicative of the powers in Spain are given to the State, Autonomous Community or the local municipal. In the absence of a specific environmental regulation that clarifies the whole issue, the general rule that has been established by the *Act 30/1992* on the legal regime of the Public Administrations and the Common Administrative Procedure, which was amended by the *Act 4/1999*¹¹⁰⁷, will then apply. The penalties for administrative sanctions in Spain are usually fines which have a deterrent effect. Administrative sanctions can also be accompanied by an obligation to repair the environmental damage which can include restoration of the environment and the compensation of the damages that have been caused. Administrative sanctions can also be used and exercised by individuals and companies. If they are many parties who have caused the environmental damage, they all can be held jointly liable. However, well-known administrative

¹¹⁰⁵ Ley 26/2007, de 23 de octubre, de Responsabilidad Medioambiental, BOE núm. 255, de 24 d'octubre de 2007, BOE-A-2007-18475.

¹¹⁰⁶ Ley 30/1992, de 26 de noviembre, de Régimen Jurídico de las Administraciones Públicas y del Procedimiento Administrativo Común. BOE núm. 285, de 27 de noviembre de 1992, BOE-A-1992-26318.

¹¹⁰⁷ Ley 4/1999, de 13 de enero, de modificación de la Ley 30/1992, de 26 de noviembre, de Régimen Jurídico de las Administraciones Públicas y del Procedimiento Administrativo Común. Publicado en BOE de 14 d'Enero de 1999.

sanctions include deregistering of companies or contracts and the restriction of development projects through the use of written letters and directives.

Public bodies usually follow a public route which is a specific administrative proceeding for an administrative sanction. Regulation *RD 138/1993* details the procedure that has to be followed for the exercise of the administration's powers of punishment. In Spain it is also necessary to review the particular substantive environmental law or the regulation in question, within which the final decision of an administrative authority can also grant an injunction. The injunction relief is usually given to reduce further environmental damage to the environment.

Private law liability can also be used as a civil liability that relates to environmental matters. There are two forms of civil liability, contractual and non-contractual, it is non-contractual that is used mainly in environmental issues. The *Civil Code*, Article 1.902, establishes the classical civil liability. There has to be an environmental damage to a person's goods, suffering of an economic loss, the goods were affected and certainly caused by the act. The damages that come into the future must be quantifiable and can certainly be determined. The *Civil Code* allows a plaintiff a period of one year within which to present a case. This period starts when the plaintiff acquired knowledge of the environmental damage. Civil liability applies only when the plaintiff is injured or suffered property or non-pecuniary loss from an environmental damage. There must always be a causation link between the damage and the action that caused it. The burden of proof lies on the plaintiff and environmental legislation allow for the use of strict liability.¹¹⁰⁸

Due to the *EU Directive 2004/35/CE*, Spain compiled the *Environmental Liability of Act 26/2007*¹¹⁰⁹ to implement a new system of the responsibility for damage on the environment in Spain. The Act follows the polluter pays principle and establishes a regime, with the aim of preventing and remedying damage to plants, animals, water resources, the land and natural habitats. This liability scheme applies to environmental damage that has already occurred or one which is of an imminent threat of damage to the environment. The liability scheme also applies directly to certain fields or activities (which have been specifically listed in Annexure III) and many other activities which are seen as the operator's fault or negligence.

¹¹⁰⁸ See Art. 1908.2 CC (and compare it to Art. 1908.4).

¹¹⁰⁹ Ley 26/2007, de 23 de octubre, de Responsabilidad Medioambiental, BOE núm. 255, de 24 d'octubre de 2007, BOE-A-2007-18475.

Natural or legal persons, if affected by the environmental damage, might seek action for compensation from the competent authorities. The *Royal Decree 2090/2008* approved for the implementation of *Act 26/2007* which established a methodologies frame to help determine when an environmental damage exists and then outline the general system that can be followed when an environmental damage occurs. The *Act 26/2007* has contributed constructively in the Spanish environmental system, in that it has widened the circumstances under which environmental liability can be attributed in Spain. Article 6 of the Act specifies how the new liability regime is compatible with the traditional criminal and administrative law. However, when environmental responsibility under the *Act 26/2007* coincides with liability under the criminal or the administrative punitive procedures, a sort of compensatory measure should be always be adopted. If the person is required by law to restore and remedy the environment then *Act 26/2007* does not apply, *Act 26/2007* should be applied completely independent from all the procedures when the operators took steps to prevent the environmental damage.

In addition, Article 45 of the Constitution provides the necessary public participation for citizens in environmental matters. Article 9 (2) of the Constitution also states that all citizens must participate in the political, economic and social life of the country. Article 23 (1) recognizes that the citizens have the right to participate in public affairs, this can be directly or through their representatives. In addition, through the parliamentary procedure of the presentation of Bills by representative institutions and political parties, the Constitution also foresees Article 87 (3). The *Organic Act 3/1984* regulates this procedure in a more precise manner. It must be stated that no fewer than 500 000 signatures are required. Article 125 also states that citizens may participate in the administration of the criminal justice system through jury trials, in a manner which the law deems fit.

The *Act 27/2006*¹¹¹⁰ also regulates the right of access to environmental information, public participation and access to justice in environmental matters, incorporating also *Directives 2003/4/CE* and *2003/35/EC*. Article 45 of the Constitution gives everyone the right to demand that public officials and authorities adopt the necessary measures to ensure adequate environmental protection. This law gives the citizens the right to hold the government to protect the environment and for them to fully enjoy their rights, including mechanisms for public

¹¹¹⁰ Ley 27/2006, de 18 de julio, por la que se regulan los derechos de acceso a la información, de participación pública y de acceso a la justicia en materia de medio ambiente (incorpora las Directivas 2003/4/CE y 2003/35/CE). BOE núm. 171, de 19/07/2006, BOE-A-2006-13010.

participation in decision-making processes, public awareness and access to courts. The Articles 9 (2) and 105 of the Constitution are also important in that Article 9 (2) gives citizens the right to participation, whilst Article 105 offers the right in administrative spheres. This ensures effectiveness in the democratic decision-making process and allows citizens to be mindful of their environmental and human rights. The *Act 27/2006* also provides right of access to Non-Governmental Organisations (NGOs) which are dedicated to environmental protection. Consumer associations can offer representation and defend collective environmental protection interests.

This follows international environmental instruments that Spain has ratified in order to afford citizens their participatory, access and equal rights. These instruments have been promoted to recognise access to information and courts, public participation and awareness to effectively protect the environment on the international arena. In order citizens to enjoy their basic socio-economic rights, there is a need to give them access to relevant environmental information to participate in the environmental decision-making process. The right to access to information can be separated into two parts, firstly, the right to be told and given information that is in the hands of public officials; and the second, for the public authority to give relevant environmental information to the public.

The right to public participation can be divided into three positions that relate to public action. The first is the authorization of activities, approval of plans and programmes that relate to the general provisions of legal and regulatory status. This then leads to the right of access to justice and the courts which ensures that the citizens hold the government responsible and uphold environmental democracy. The issues concern *Directive 2003/4/EC* of the European Parliament and of the Council, public access to environmental information recognised under *Directive 90/313/EEC* of the Council and *Directive 2003/35/EC* of the European Parliament and of the Council, also establishing the rules for the participation of the public in certain plans related to the environment.

The Title III deals with the important right of public participation in matters relating to issues of an environmental nature. This can be in relation to the preparation, revision and modification of plans, regulations or programmes. These guarantees are stated in Article 17 and must conform to the *Directive 2003/35/EC*. The law must establish the principles of participation and must also be recognised and respected by the Autonomous Communities. Furthermore, Title IV deals with access to justice and administrative guardianship. This Title is to ensure

and guarantee that there is judicial and administrative protection. Citizens through this Title are guaranteed effective and proper information and also participatory rights. For example, Article 20 has procedures on how to appeal administrative decisions that may attribute to an omission by the public authorities or can result in individual and group rights being violated. The law in Article 9 also provide measures for how non-governmental and non-profit organizations can provide support in environmental matters.

Importantly, this law is dictated by Article 149.1.23 of the Constitution and further Articles are also important as it sets out the prices that should be paid by applicants for environmental information. This notion was presented by Article 10 of the Rio Declaration on Environment and Development. It states that the best way to protect and manage the environment is to allow the participation of all citizens. This will strengthen the institutions and arms of government, thus allowing democracy to be recognised in Spain. That is, the participation of citizens increases the chances of success and legitimizes environmentally sound solutions by the government of Spain.

There are various ways in which citizens can participate in the public administration processes. The Constitution through Article 105 (a) and (c) foresees the hearing of public citizens, directly as individuals or through groups, organizations and associations in both administrative rule and decision-making rules. Article 105 (b) also gives citizens the right of access to administrative files and registers. This right is limited to the effect of national security and defence of the Spanish State.

A Supreme Court decision of 1999 states that Greenpeace Spain in accordance with the Spanish Constitution was already afforded an entitlement to be provided with information from the public administration. Thus, Greenpeace Spain already enjoys legal standing to challenge any administrative refusals to provide environmental information which it has requested before any administrative tribunals. Article 129 (1) states that citizens have a right to participate in activities of any public bodies that might affect their quality of life and general welfare. Furthermore, it can be stated that every Spanish citizen has a right of association, this right facilitates the creation of any environmental protection associations, protest and strikes or any other environmental activism activity that is legal. Thus, they also have a right to access to justice as in the Constitution and the due process of the law.

The education and information of public citizens is important for their fruitful, effective and successful public participation. Citizens deserve up-to-date information from the public administration to constitute effective public participation. This right has been enlarged by the European Law and the Spanish Constitution. The *Directive 2003/04/EC* on the public access on environmental information and *Directive 2003/35/EC* with regard to public participation in the environmental procedures have both been transposed into the *Act 27/2006* which regulates the rights of access to information, public participation and justice regarding environmental matters in Spain. The *Act 27/2006* establishes the right of any person to access public documents or information concerning the environment at a reasonable cost, regardless of their nationality and without having to prove any interest. This has become mandatory in Spain for all public entities.

There are also other rights granted to Spanish citizens such as participation in the administrative decision-making processes and procedures, suit provisions, public hearings, consultative referendums, the reporting administrative and criminal infringements, and the right to administrative remedies. In addition, Article 19 of *Act 29/1998*¹¹¹¹ establishes citizen access to justice and legal standing in judicial review proceedings. Article 7 of the *Organic Act 6/1985* on judicial powers recognizes and protects the public citizen's individual rights, collective rights and their interests. It also recognizes the collective rights of associations, groups and corporations which express an interest to protect or are legally recognized to protect and promote these environmental rights and interests. Importantly, *Free Legal Aid Act 1/1996*¹¹¹² has established free legal aid for those who lack resources and funds (for example *tasas judiciales* have been removed, same as an extended kind of free aid to NGOs).

Given the privilege that Spain has regarding its biodiversity, it has a responsibility to protect its environment. Spain has signed many international instruments and played a part in the writing of some representing the Spanish speaking world. It has also attended and submitted decisions to the EU and the UN accepting and updating its laws and regulations, thus trying to reduce actions that can degrade the environment. The conservation of biodiversity is now a top priority for the State.

¹¹¹¹ Ley 29/1998, de 13 de julio, reguladora de la Jurisdicción Contencioso-administrativa. BOE núm. 167, de 14/07/1998, BOE-A-1998-16718.

¹¹¹² Ley 1/1996, de 10 de enero, de asistencia jurídica gratuita. BOE núm. 11, de 12/01/1996. BOE-A-1996-750.

However, problems seem to emerge at Autonomous Community governance level where actions to protect the environment are seen as obstacles to development. At Autonomous Community level the laws are being broken (picking and choosing what is relevant to regions), leading to the lack of coordination and cooperation. It is rather difficult to assess, monitor and evaluate how Spain protects its environment. The procedure is made problematic since you will need to assess all the 17 Autonomous Communities as well. Particularly, when discussing forests, these natural resources are usually neglected. The lack of application of the EC Directives shows that they are problems once the competences to protect the environment are given to the Autonomous Communities. Today, Spain is one of those European countries with a highest number of complaints, sanctions and reports which relate to breach and/or insufficient implementation and fulfilment of the European directives of nature protection. This lack of responsibility in Spain should be avoided at all times.

A few recommendations can be given, there is a need to increase economic support to Autonomous Communities to reduce forest loss, co-ordinating and co-operating with all administrations and unite certain areas of common interest between State-Communities and Communities relationships. There is also much needed emphasis in increasing participation and public awareness through the use of public platforms, research institutions and NGOs. Stronger mechanisms have to be put above board to recognise environmental assessment and reduces projects that negatively affect the environment.

Further, there is a need for coherence in the application of environmental procedures and reduce conflicts before certain issues arise. The Ministry of Environment should also work with other Ministries in executing the duty to protect the environment, but moreso with leaders of the Autonomous Communities. Some other actions that can be taken include solving the issues such as repairing electric fences, establishing ecological corridors network and preparing the environmental guidelines for the mitigation and adaptation of climate change in all Autonomous Communities as this will affect forest protection in Spain.

Forest protection is missing in the Spanish environmental laws.¹¹¹³ There is a need for a forest law since definitions and concepts for forest protection are not clearly defined.¹¹¹⁴ This goes back to the power of the State to make new laws and the division of development of laws by

¹¹¹³ See note 1037, page 107.

¹¹¹⁴ Ricardo de Vicente Domingo, *Espacios forestales (su ordenación jurídica como recurso natural)*, Generalitat Valenciana, Conselleria D'Agricultura I Medi Ambient, Editorial Civitas, S.A, (1995), page 133.

the Autonomous Regions. Such delegation of powers and the overwhelming authority by the regions needs to be observed carefully. Many of the regions need to be brought together and Spain must collectively work together through coordination and cooperation efforts forest protection. There is also a need for a unitary regime that focus on the importance of forests and how forests can be effectively protected, setting out market incentives, command and compliance measures to effectively reduce forest degradation. This needs to be in line with the Spanish Constitution and the international instruments Spain has ratified. Furthermore, there is a need for proper planning and zoning of land especially to recognise forest functions and services. Moreover, protection and recognition of buffer zones is essential for the protection of forests in Spain.

In addition, there is failure to act when forests are privately owned, essentially if the owner is left to protect the forests by his/her accord which can be expensive and many do not have these expertise. Nevertheless, it needs to be emphasized that degradation of forests should lead to restoration of the forests to its previous functions.¹¹¹⁵ Furthermore, even damaged severely the functions of the land in the spatial planning ordinances should never change as this is prone to mischevious acts by construction companies or land owner. For example, a construction company or land owner may start a fire in forest, later apply to the municipal to change the zoning and planning of forest lands to infrastructure developmental projects.

There is also a need to coordinate other uses of land with forest protection to reduce land uses that might cause land degradation and humper forest functions.¹¹¹⁶ There is also a need to clearly define forest ownership in Spain and recognise the immediate land owner to ensure communication is immediate in the eventuality of fires or other forest degradation activities. Environmental laws should focus on biodiversity protection, providing a natural equilibrium to human development and ecological environmental values. There is also a need to protect forests with laws that connect with the need of the people and communities surrounding the forests respecting the public laws of these communities.¹¹¹⁷

¹¹¹⁵ Jose Esteve Pardo, *Realidad y perspectivas de la ordenacion juridica de los montes, Funcion ecologica y explotacion racional*), Generalitat de Catalunya, Escola d'Administracio publica de Catalunya, Editorial Civitas, S.A, Madrid, Primera Edicion, (1995), page 274.

¹¹¹⁶ See note 1114, page 133-4.

¹¹¹⁷ See note 1115, page 34.

There is also a terminology issue which must be clarified, especially what is a mountain and forest with regards to Spain, and their similarities and differences.¹¹¹⁸ This has caused much debate in Spain, as to are, forests same as mountains and how does the legislations relate to this. The issue of *aprovechamientos* is broad and must be represented by forest laws that cooperate contract, property and environmental laws. In short, forest laws in Spain will need to be transposed and re-knitted into a unitary unit than a web it represents currently. Importantly, cooperation and coordination between State and regions and region to region must be strengthened.

The Ministerial Conference on the Protection of Forests in Europe (MCPFE) – years of commitment to European forests was established to offer collaboration between European states.¹¹¹⁹ It offers states a pathway to cooperate and coordinate for sustainable forest management. It also recognises certain criteria and indicators that can be used by states to monitor and collect forest information. Furthermore, the MCPFE recognises efforts with other instruments for conservation of biodiversity and combating climate change. The MCPFE Work Programme recognises the three dimensions of sustainable development which are social, economic and environmental – the need to balance these is seen as important in Europe for forest protection and mangement. The MCPFE recognises agreements between states can play a huge part in forest protection and management – thus it offers ways for negotiating agreements. With the dialogue expanding the MCPFE has recognised and welcomed various stakeholders such as NGOs, governments, forest managers, owners, intergovernmental and social organisations, and corporations to communicate and participate in the dissemination of information that can lead to sustainable forest management in Europe.

The MCPFE also recognises the UNFF as a huge player in the sustainable forest management at a global level. Its main focus is to uplift efforts in Europe for sustainable forest management. It encourages Member States in the EU to strengthen, monitor, assess and report forest trends in their states. Spain as an EU member is encouraged by the MCPFE to recognise such important principles when it comes to forest protection and management in its jurisdiction. The MCPFE is a perfect example of a cross-border cooperation and political framework that allows

¹¹¹⁸ Jose Francisco Fernandez Garcia, *Los Montes de particulares en el derecho administrativo Espanyol*, Editorial Thomson Aranzadi, S.A, Madrid, (2004), page 469.

¹¹¹⁹ T. Juszczak, B. Kornatowska, R. Michalak and M. Buszko-Briggs, 'The Ministerial Conference on the Protection of Forests in Europe – years of commitment to European forests'. See website on <http://www.fao.org/3/y5841e/y5841e06.htm>. Accessed on 22 Jan. 21.

European states to integrate sustainable forest management efforts. It has quickly realised the lack of funding in forest protection and has allowed entrepreneurship and the building of innovative economic structures for membering states in the EU.

The increase of forest fires has been attributed to the monoculture and elusive growth of gum trees or non-native eucalyptus trees in Southern Europe, Australia and South Africa. They are among the world fastest-growing trees and are a profitable cash tree crop for paper and pulp. However, the trees have an inherent problem of being quick to dry and being highly flammable. During the rainy season a single strike by lightning can result in a huge forest fire that can cover and burn a huge area in a small amount of time. Their sap is highly flammable and so is their tree bark, which is known to fly-off when burning, igniting new flames a couple of yards away.

The next section on South African laws will focus on the Constitution and the few important environmental laws that have promulgated after South Africa ratified international environmental instruments. The National Environmental Management Act (NEMA) has created the body framework for environmental law in South Africa. Further, there are specific legislations that protect forests, protected areas and biodiversity. It is important to look at these legislations as they are the main legislations that relate and deal with forest protection. However, other legislations and regulations will be mentioned in-passing in this section.

3. South Africa

South Africa has signed a number of important international environmental instruments, including the CBD, UNFCCC, UNCCD and CITES. To accelerate its efforts in environmental protection, it has the *National Environmental Management Act* (NEMA)¹¹²⁰ which is the guiding legislation on environmental principles and is empowered by section 24 of the Constitution of South Africa. Besides, it has important legislation and regulations that deals specifically with different environmental issues. In relation to forest protection, it has promulgated the *National Forest Act*¹¹²¹, *National Environmental Management: Protected*

¹¹²⁰ National Environmental Management Act 107 of 1998. See website on <http://kruger2canyons.org/029%20-%20NEMA.pdf>. Accessed on 10 October 2018.

¹¹²¹ National Forest Act 84 of 1998. See website <https://www.daff.gov.za/daffweb3/LinkClick.aspx?fileticket=JigtiG7lrGM%3D&portalid=0>. Accessed March 11, 2020.

*Areas Act*¹¹²² and *Biodiversity Act*¹¹²³. These national legislations have their principles in the NEMA and must be in accordance and alignment with section 24 of the Constitution of the Republic of South Africa¹¹²⁴ (the Constitution).

There are also important judiciary decisions that have been made by South Africa's High Courts. The courts in South Africa have played a critical part in realizing the international obligations to which South Africa is a party. The courts have also played a part as interpretation experts, allowing evidence to be heard and addressing the issue of international instruments being in line with the Constitution. However, courts in South Africa also serve as a recognition of the longstanding campaigns by civil society to address environmental protection issues.

Section 24 of the Constitution protects the environment and gives the State the duty to protect the environment. It states that everyone has the right to an environment that is not harmful to their health or well-being.¹¹²⁵ It also goes further in stating that everyone has the right to have the environment protected, for the use and benefit of the present and future generations using legislative standards and other measures.¹¹²⁶ This section also realizes ecological sustainable development in its themes and the use of the EIA. Furthermore, s24 (b) (i) and (ii) state that government must take actions to prevent pollution and ecological degradation, and promote conservation. The section goes further in stating that the use of natural resources must be to promote a justifiable economic and social development.

Section 24 gives powers to the many environmental legislation, regulations and policies in South Africa. South Africa, as with other countries in Africa, has a technical and a highly developed national Constitution. This Constitution incorporates several rights contained in the Bill of Rights that are important for the proper and effective implementation of environmental laws. For instance, s9 states that everyone has an equal right to enjoy all rights and freedoms and the State cannot unfairly discriminate.¹¹²⁷ That is, the State has a duty to protect any environment irrespective of the local communities who are living in that area, and

¹¹²² National Environmental Management: Protected Areas Act No. 57 of 2003. See website on https://www.environment.gov.za/sites/default/files/legislations/nema_amendment_act57.pdf. Accessed March 11, 2020.

¹¹²³ National Environmental Management: Biodiversity Act No. 10 of 2004. See website on https://www.environment.gov.za/sites/default/files/legislations/nema_amendment_act10.pdf. Accessed March 11, 2020.

¹¹²⁴ See note 1034. See website <https://www.gov.za/sites/www.gov.za/files/images/a108-96.pdf>. Accessed on 10 October 2018.

¹¹²⁵ *Ibid*, Section 24 (a).

¹¹²⁶ *Ibid*, Section 24 (b).

¹¹²⁷ *Ibid*, Section 9 (1) and (2).

environmental rights are afforded to everyone without any discrimination. Other sections include the right to dignity¹¹²⁸, life¹¹²⁹, demonstration, assembly and strike¹¹³⁰, and property¹¹³¹. These rights are important for the protection of the environment and the realization of human rights by affording the society, a safe and clean environment in South Africa.

In addition, South Africa has also enacted the *National Environmental Management Act*¹¹³² (NEMA). This Act provides co-operation in all environmental governance institutions and establish principles for decision-making on environmental matters. It also provides for procedures that promote co-operative and co-ordinating governance and procedures organized and exercised by state organs when making environmental decisions. The Preamble of NEMA states that everyone has a right to an environment that is not harmful to their health and wellbeing; and the State must protect, respect, fulfil and promote the socio-economic and environmental rights of everyone. It also states that the State has a duty to alleviate poverty in previously disadvantaged communities.

Furthermore, the Preamble also articulates that the State has a duty to integrate sustainable development with socio-economic and environmental factors in national development plans. The Act also serves to promote co-operation, co-ordination and integration of duties in all spheres of government and State organs as the environment is a concurrent functional area of national and provincial legislative competences. The Act establishes that the government should establish laws to protect the environment, promote certainty with regard to decision-making in organs of State, and establish principles to guide the exercise of functions affecting the environment. Finally, these laws should promote public participation and effective enforcement by the State, further allowing the enforcement of environmental laws by the public as a society.

NEMA has ten chapters, Section 2 states clearly its principles in order to reduce significant damage to the environment and protect the environment. It further explains that the disturbance of ecosystems and loss of biodiversity must be avoided at all costs, if not these should be remedied. It further encourages that the disturbance of landscapes and sites of cultural heritage should be avoided, minimized and remedied. In addition, the Act recognizes that the use of

¹¹²⁸ Ibid, Section 10.

¹¹²⁹ Ibid, Section 11.

¹¹³⁰ Ibid, Section 17.

¹¹³¹ Ibid, Section 25.

¹¹³² See note 1120.

non-renewable resources should be responsible and equitable, and take into account the consequences of the depletion of these natural resources. Section 2 also recognizes the rights of local communities and the need for public awareness in communities to reduce and protect the environment. It also recognizes the use of the precautionary principle in reducing effects to the environment that are uncertain and take into account limits of current knowledge. Importantly, section 2 recognizes that the development, exploitation and use of the resources must not jeopardize the integrity of ecosystems. These decisions from the State must also harness traditional knowledge, improving on public awareness and recognizing the rights of local and indigenous communities. The decisions must also be in co-operation and co-ordination with other national legislations to avoid conflicts of power.

In addition, Chapter 2 establishes the National Environmental Advisory Forum¹¹³³. Its function is to inform the Minister of the many stakeholder views regarding the environmental principles set out in Section 2. It also advises the Minister of matters concerning environmental management and governance, and how to achieve specified objectives, targets or priorities for environmental governance. The Minister may also lay down rules of the function of this forum. This forum (as it consists of environmental experts and society leaders) is an important institution as it serves to bridge the gap between the Minister (politics), society (social) and the environment (ecology). Furthermore, the Act also has procedures for co-operative governance as this tries to reduce conflicts between State organs in Chapter 3.

In addition, Chapter 5, Section 23 promotes the use and application of proper environmental management tools to ensure the effective integration of environmental management of activities. The objective plan is to integrate principles of environmental management that have been set out in Section 2 in all decisions that are significant effect on the environment. This section is also aimed at the socio-economic conditions, risks and consequences, mitigation activities maximizing benefits, and evaluating the potential impact of the environment. Further, it also integrates EIA procedures to ensure that the effects of projects and activities on the environment receive adequate consideration. In accordance with the principles of with sustainable development, Section 24 states that integrated environmental management must take cognisance of the environment, socio-economic conditions and cultural heritage of the activities that require authorization. This states that projects which require authorization must

¹¹³³ Ibid, Section 3 (1).

be investigated and assessed prior to their implementation, and must also be reported to the appropriate organ of state as authorized by law.

Importantly, as South Africa is a Party to the CBD, UNFCCC, CITES and UNCCD, it has obligations to promulgate laws that reduce environmental damage and degradation. Section 25 of NEMA relates to the use of soft laws in South Africa and the Minister can notify or recommend the Cabinet and Parliament to these laws that might be beneficial to the protection of the environment¹¹³⁴ where South Africa is a Party to the international instrument and this instrument complies with the Constitution of South Africa. The Minister may publish the provisions of the instrument in the Government Gazette or any amendment and additions to the instrument. Furthermore, the Minister may introduce legislation in Parliament, if such and their appropriate regulations are necessary to give effect to the instrument to which South Africa is a party.

Moreover, Chapter 7 deals with compliance and enforcement and protection; Section 28 deals with the duty of care and the remediation of environmental degradation and damage. Section 28(1) states that everyone who causes environmental damage must take reasonable steps to prevent such degradation from occurring or continuing. This person is also given the duty to take reasonable measures irrespective of whether this harm could have been committed in the past or any situation which is likely to cause degradation.¹¹³⁵ These measures can be to investigate, evaluate, inform, educate, cease, control, prevent, eliminate or remedy the degradation. The Director-General or a provincial head of department may, after consultation, direct someone who fails to take measures to complete them before a specified reasonable date.

Furthermore, the Director-General may also take steps to remedy the environmental harm, but will claim all costs from the person who was supposed to have remedied the environmental harm. This section is one of the most important sections in South African environmental law. It explains the precepts of the polluter-pays principle, such that whoever pollutes the environment has a duty to remedy the environmental harm and degradation. If necessary, further steps should also be taken to terminate and eliminate the environmental harm. If more than one person is liable for the environmental harm, such actions can be apportioned among the individuals according to the degree which each was responsible for this harm.

¹¹³⁴ Ibid, Section 25 (1).

¹¹³⁵ Ibid, Section 28 (2) (a-b).

In addition, Section 32 gives legal standing in the enforcement of environmental laws. It states that any person or group of persons may seek legal recourse or appropriate relief in respect of any breach or threat of a provision of this Act. That is, anyone has legal standing to go to court and seek the appropriate relief if there was environmental damage or degradation. The person or group of persons might be concerned with their own interests, on behalf of others, act in the public interest, or in the interest of protecting the environment. Thus, if the person or individuals secures the relief sought in respect of the environmental harm, the court may also award costs to a person or persons entitled to legal representation. It can also order the person who has committed the harm to pay the person or persons who brought the case if they incurred costs during the investigation of the harm. This legal standing also extends to the prosecution of the State duty, in national, provincial and municipal bylaws, policies or regulation as long as the duty is concerned with the protection of the environment and breach of such a duty is an offence.¹¹³⁶

Section 34 also recognizes that environmental harm can result in criminal proceedings. If there was any damage incurred by any public person or persons or any organ of State, the court can also (in the same proceedings) inquire and seek the amount of damages caused. This judgment will have the same effect as the criminal proceedings and is executable in the same manner as given in a civil action instituted in a competent court. Employers and managers are also liable for their commission or omission. If such acts resonates from the acts of their employees, the employer can be found criminally guilty or civilly liable even through vicarious liability. The employer will thus be liable to pay and remedy the environmental damages or degradation. Directors of firms and companies can be found liable for any environmental damage and harms committed by their firms. This can also refer to directors who once held the position when the environmental harm or degradation was committed.

Important to this thesis is the *National Forest Act*¹¹³⁷. Without any binding international instrument, South Africa has promulgated a national legislation that is specific to forest protection. The Preamble of the Act states that everyone has a constitutional right to have the environment protected and the protection of the environment must be for the greater good of the future and present generation. It recognizes that forests form an important part of the ecosystems and environment, thus there is a need to conserve and manage them under the

¹¹³⁶ Ibid, Section 33 (1).

¹¹³⁷ See note 1121.

principles of sustainable forest management. The section also recognizes that the State's role needs to change as socio-economic and ecological benefits of forests have been distributed and recognized unfairly in the past.

The purpose of the *National Forest Act* is to promote sustainable management and development of forests for all of their benefits.¹¹³⁸ The Act also encourages the provincial structures of government to create conditions, provide measures for protection, promote community forestry, promote the sustainable use of forests and promote participation in aspects of forests. Furthermore, Chapter 2 of the Act lists the principles for sustainable forest management which apply to official decisions that can affect forests. These powers are vested in the Minister who can set indicators and standards for assessing and enforcing sustainable forest management. The Minister can also create incentives for managing forests in a sustainable way. Sustainable forest management must be considered in all the development and government policies that affect forests. The principles emphasise that natural forests should never be destroyed only in exceptional circumstances and the Minister must provide reasons. The Minister is also required to publish criteria and indicators for forest owners.¹¹³⁹

Furthermore, the Minister is obliged to monitor forest area and oversee relevant research on sustainable forest management.¹¹⁴⁰ This research must conform to other national policies and science and technology related programmes. In addition, Chapter 3 of the Act prohibits the destruction of natural forests. It sets out special measures to protect forests and threatened trees. Section 7 states that no person may cut or damage any natural forests or tree without a license or exemption from the provisions made by the Minister. The Minister can also declare certain forests as forest protected areas. The Minister can also purchase or expropriate land and declare it a protected area.

The Minister can also declare a forest protected if it is deemed to not being adequately protected in terms of national laws. The Minister makes such a declaration by publishing a notice in the Government Gazette, recording the decision, naming the forest protected area and describing the area as it has been set aside. No one can cut down trees or damage the forest in protected areas.¹¹⁴¹ These protected areas as declared by the Minister will be governed under State organs. This decision by the Minister is binding and cannot be revoked by anyone in the

¹¹³⁸ Ibid, Section 1.

¹¹³⁹ Ibid, Section 4.

¹¹⁴⁰ Ibid, Section 5.

¹¹⁴¹ Ibid, Section 10.

Republic and such protected areas cannot be sold nor a servitude granted to anybody in a protected area. The Minister can also declare protected a tree, certain group of trees or species that are threatened with immediate harm. This effect serves the same effects such as declaration of protected areas as no person can no longer destroy or damage forests. However, when faced with forest degradation and deforestation, the Minister can take measures to control and remedy forest degradation and deforestation.¹¹⁴²

The Minister can intervene immediately to prevent forest degradation or deforestation. This section also provides that the Minister can enter into an agreement with an owner of a forest to remedy such a situation. The Minister can declare such forest area as controlled by publication of a notice in newspapers or radio stations in that local area. This notice will serve to stop and prohibit right to access, removal of trees and other activities that relate to deforestation. It also suspends licenses issued under this Act and requires the owner to take specific actions to prevent further deforestation. Furthermore, it can require the owner to take steps to reduce deforestation and apply the principles of sustainable forest management. The Minister in this instance can also offer support in terms of experts and financial assistance. In addition, the Act recognizes different types of uses of forests ranging from recreational uses, commercial to community forest uses. This has been important in the realization of forest valuation in South Africa since forests were not previously seen in this context. These many uses have been recognized and explained in Chapter 2.

Section 33 establishes the National Forests Advisory Council which is an important institution in the protection and management of forests. The Council also establishes the Committee for Sustainable Forest Management which advises the Council, the Department of Environmental Affairs and the Minister in all matters concerning sustainable forest management. The Council advises the Minister in matters that relate to forests and research in South Africa. The Minister can also create the Forestry Industry Fund. The Council is required to present annually on forest management in South Africa and the way forward.¹¹⁴³ The Minister can appoint facilitators, mediators and arbitrators for the purposes of dispute resolution.¹¹⁴⁴ The administration of this Act is well vested within the Minister of Environmental Affairs. The Minister must also develop and implement other policies for forests and their management; and the Minister can

¹¹⁴² Ibid, Section 17.

¹¹⁴³ Ibid, Section 40.

¹¹⁴⁴ Ibid, Section 45.

consult with any person, State organ and province concerned in forest issues. The Minister can also purchase or expropriate any property and reserve it for forest protection.

Importantly, Section 58 deals with offences and sentencing relating to the Act and penalties that are applicable. A person guilty of any category offence listed in Sections 62 or 63 can be convicted for imprisonment, fined or both. Forest crimes in South Africa carry a prison sentence, civil liability carries a fine, or the convicted person can be handed both. A court may also revoke the person's license, commute sentence to community service, and such service must be remedial beneficial to the environment. If a court convicts any person of any offence related to this Act, they may order the person to return any of the forest products or trees removed or cut down illegally.¹¹⁴⁵ A court that orders a fine can also take a sum of the fine to remedy the environmental harm.

Section 62 explains different offences that can lead to a person being convicted for imprisonment, fine or both. It states that any person who contravenes the prohibition of acts to trees in natural forests, as has been referred in Section 7(1), is deemed guilty of a second category offence. That is, any person who contravenes prohibition on the damage, cutting or destruction of natural forest produce can be found guilty of a second category offence. As for rules relating to Section 11(2)(b), this will result in a third category offence as also referred to in Section 15(1)(a) and any person guilty of an offence under 15(1)(b) is guilty of a first category offence. Furthermore, a person that contravenes a prohibition or other provisions declared by notice in a controlled forest area under Section 17(3) and (4) can be found guilty of a second category offence. In addition, Section 63 lists certain offences relating to the use of forests. For example, entering a protected area without permission, contravening rules made by a private owner, damage to property, making signs and marks on rocks and dumping of litter can be liable for prosecution under this section.

Forest officers have also been given powers under Section 64 of the Act, and anyone who refuses to produce a license or prevents the officers from their duty is guilty of a category four offence. The Director-General may appoint forest officers in the Department of Forest Affairs or in any provincial and local authority. Their powers are usually vested in policies, regulations and laws. These forest officials have the same powers vested by law in a police official, and upon exercising powers under this Act is seen as a peace officer. These forest officers can enter

¹¹⁴⁵ Ibid, Section 59.

and search any premises without a given warrant if they so believe that an offence is or has been committed. These officers can seize items that have been collected illegally without a warrant.

South Africa has also promulgated the *National Environmental Management: Protected Areas Act*¹¹⁴⁶. This is aimed to protect and conserve ecologically areas in South Africa. It is also to provide protection of biodiversity and natural landscapes. These areas are now registered under national, provincial and local registers. Its main objective is to manage protected areas within the ambits of NEMA. This is also focused on the sustainable use of land for the benefit of local communities and promoting public participation. It aims to fulfil Section 24 of the Constitution. The Act is an assertion of public and State efforts to protect the environment from damage and degradation.

Section 10 of the *Protected Areas Act* states that the Minister must maintain a register of all the protected areas. The Minister is also given powers to set norms and standards for the protection of protected areas. Section 15 states that this specifically refers to forest nature reserves and forest wilderness areas. This section and Section 48 refer to forest areas that have been deemed protected by the *National Forest Act*. It is aimed at protecting all ecosystems and species naturally. It is also manages the relationship between environmental biodiversity, human settlement and economic development. Section 18 states that the Minister can declare high sensitive areas and areas of outstanding ecosystems as special nature reserves.

The Minister, according to Section 23, can declare an area as a nature reserve if it has a significant natural biodiversity or is in need of long-term protection for the maintenance of biological diversity. These declarations must also realize public participation norms and use by local communities. After the declaration as a natural reserve area, a Minister can then make a management plan on how this area will be protected. The management plan must recognize and in line with the *National Environmental Management: Biodiversity Act*¹¹⁴⁷ (Biodiversity Act) and *National Forest Act*. The objective of the management plan is to ensure that protected areas are managed in a consistent manner and for the purposes for which they are declared. The management plan may therefore contain performance criteria, regulation of human activities, planning measures, funding plans, procedures for public participation and zoning of the

¹¹⁴⁶ National Environmental Management: Protected Areas Act No. 57 of 2003.

¹¹⁴⁷ National Environmental Management: Biodiversity Act No. 10 of 2004.

area.¹¹⁴⁸ Furthermore, the Minister may establish indicators that are focused on monitoring the protected area's performance and the conservation of biological diversity.¹¹⁴⁹

In addition, if a certain area is deemed a protected area, no person can reside, perform any activities or enter without a license or authorization. The Act also restricts prospecting or mining activities in protected areas. The Minister of Environmental Affairs and the Minister of Land Affairs can acquire any land that has been declared to be a protected area according to this Act. The Minister can also exchange or buy land and can terminate an existing servitude existing over any land that has been declared a protected area. Importantly, a person can be found guilty of an offence if they fail to comply with Sections 45(1), 46(1), 47(2) and (3), 48(1) and 50(5), or hinders a process of the management authority and contravenes section 51. A person can also be guilty of an offence if they illegally profess to be a member of staff of the management authority or an assistant for a management authority.

Furthermore, South Africa has enacted the *National Environmental Management: Biodiversity Act*¹¹⁵⁰. This Act is aimed at the management of biodiversity, protection of species and ecosystems, sustainable utilization of biological resources, fair and equitable sharing of benefits with local communities from bioprospecting of indigenous resources. Within the framework of NEMA, the objective of this Act is to use biological resources in a sustainable way; give effect to binding international agreements that relate to biodiversity; solve co-operative governance issues in biodiversity management; and provide the South African National Biodiversity Institute¹¹⁵¹ with assistance in protecting and conserving biodiversity resources. The Act also gives full effect to international agreements (CBD and CITES) to which South Africa is a party, and is aimed at the conservation of biodiversity. Section 9 states that the Minister can set norms and standards, restrict activities and set indicators and measures of compliance.

The Act in Section 10 establishes the South African National Biodiversity Institute as a juristic person. The Institute's duties are to monitor and report to the Minister on the status and conservation of threatened and protected species, and the status of listed invasive species of biodiversity in South Africa. Furthermore, the Minister (working with the Minister of Land Affairs) can declare any land a botanical garden or part of a botanical garden. The Minister

¹¹⁴⁸ Ibid, Section 41.

¹¹⁴⁹ Ibid, Section 43.

¹¹⁵⁰ See note 1123.

¹¹⁵¹ See website on <https://www.sanbi.org/>. Accessed 10 December 2018.

oversees the protection and conservation of biodiversity in South Africa.¹¹⁵² In addition, the Minister monitors the performance of the Institute, may set standards for better performance of the Institute, and may also issue directives on policies to the Institute. The Minister and the provincial leader can also determine a region as a bioregion when it contains nested ecosystems and biodiversity in a provincial or municipal area.¹¹⁵³ The Minister can then publish a bioregional plan for the conservation of biodiversity in that region. The Minister can also enter into agreements with neighboring countries for the establishment of a transboundary bioregional plan. This bioregional plan must contain measures for effective management of biodiversity, provide monitoring of the plan, and be consistent with the components of biological diversity in a region.¹¹⁵⁴

Furthermore, a person, organ of State or an organization can contribute to the biodiversity management plan if they so desire with a submission to the Minister who then approves or rejects the draft management plan for any ecosystem and indigenous species. Biodiversity management plans are aimed at the long-term survival of nature, provide for monitoring as consistent with an ecosystem to which the plan relates, and report on the progress of the plan.¹¹⁵⁵ Importantly, the bioregional and biodiversity management plan should be consistent with the NEMA, *Local Government: Municipal Systems Act*¹¹⁵⁶, any integrated development plans and spatial planning administered by the Cabinet member responsible for Land Affairs and any other national or provincial legislations.

In addition, the Minister must monitor mechanisms and set the indicators to determine if the conservation of biodiversity is being achieved effectively, negative effects on the conservation status and as well as positive impacts. Furthermore, the Minister may require an organization or organ of State to monitor and publish this report. The Minister must also promote research undertaken by the Institute and any other research institutions on biodiversity resources. This may include the collection of components of the conservation status of biodiversity, negative or positive treats that are affecting biodiversity, and activities that threaten biodiversity components. Moreover, the Minister can promote sustainable use of resources, protection,

¹¹⁵² See note 1150, Section 35.

¹¹⁵³ *Ibid*, Section 40.

¹¹⁵⁴ *Ibid*, Section 41.

¹¹⁵⁵ *Ibid*, Section 45.

¹¹⁵⁶ *Local Government: Municipal Systems Act No. 32 of 2000.*

assessment of strategies and techniques, and determine the needs and priorities of biodiversity conservation.

Section 51 states that the Minister can protect threatened ecosystems and species, giving effect to the international agreements and obligations to which South Africa is party. The Minister should ensure that there is a list of threatened ecosystems, regulate trade, maintain ecological integrity, and the sustainable use of species and specimen.¹¹⁵⁷ Furthermore, before any permits are issued for bioprospecting or any research, the issuing authority must consider any biodiversity specie or ecosystem that can be degraded or damaged in this process. This must also allow benefit-sharing with local communities, use of traditional knowledge and standards for public participation.¹¹⁵⁸ The Minister can issue permits restricting activities that can threaten protected species.¹¹⁵⁹ In addition, any person who is interested in the conservation of any specie or ecosystem can lodge an application, if any activity they know will cause environmental damage and degradation. The Minister may also make regulations or policies which are related to the monitoring of compliance and enforcement of environmental norms and standards.¹¹⁶⁰

Furthermore, the Minister, as stated by Section 100 of the Act, must give a notice of public participation in the Government Gazette and at least in one newspaper that is distributed nationally.¹¹⁶¹ This must allow any interested person/s to submit presentations or any objections to the Minister. The Minister must give recognition to all presentations and objections. This publication must contain sufficient information to enable the public to make meaningful contributions and also invite members to submit comments. Section 101 explains the offences and penalties of which a person can be found liable or guilty of contravening. Such offences listed in Section 101 can lead to different penalties that have been listed in Section 102. They can be liable to remedial action; fine or imprisonment for a maximum period of five years, or both.

South Africa has also implemented the *Spatial Planning and Land Use Management Act*¹¹⁶². Its objective is to provide a recognized framework for spatial planning and land-use

¹¹⁵⁷ See note 1120, Section 52.

¹¹⁵⁸ Ibid, Section 83.

¹¹⁵⁹ Ibid, Section 87.

¹¹⁶⁰ Ibid, Section 97.

¹¹⁶¹ Ibid, Section 100.

¹¹⁶² Spatial Planning and Land Use Management Act No. 16 of 2013.

management.¹¹⁶³ This is meant to monitor, co-ordinate and review the use of land, and to ensure that there is proper planning to reduce conflicts and environmental degradation. The Act is also to provide ways in the sustainable utilization of land. This creates consistency and uniformity in land application procedures and policy decision-making. The Act allows certain parts of land to be demarcated as zoned off, by-laws restrict people from developing these lands, for example areas with sensitive ecosystems such as natural forests. This allows such areas to be protected by law; and a map is drawn showing the boundaries where human development can then take place.

The South African courts have also played a critical role in developing environmental principles from international agreements into the national legislation and also interpreting the principles. The notable example being the *Fuel Retailers Association of SA (Pty) Ltd v Director General, Environmental Management Mpumalanga and Others (Fuel Retailers)*¹¹⁶⁴ case which recognized the sustainable development concept into NEMA. The court went further in stating that all developments should take socio-economic and ecological considerations.¹¹⁶⁵ In addition the case *Earthlife Africa Johannesburg v. Minister of Environmental Affairs and others, (Earthlife Africa Johannesburg)*¹¹⁶⁶ also realized environmental authorizations into the national legislation, by stating that the Minister should consider EIAs should also have climate change impact assessments. In South Africa, environmental law has been written on paper but there are some difficulties being faced. It is difficult to effectively implement environmental laws in a developing country with one of the most unequal societies in the world.

The primary protection of the environment is contained in section 24 of the Bill of Rights in the South African Constitution, the primary legal document of the country which cannot be amended. The right contained in section 24 is not simply about protecting the environment for the benefit of humans currently occupying it, but rather it is about ensuring that all use and extraction is not only beneficial for human development but also economically and socially

¹¹⁶³ Ibid, Section 3.

¹¹⁶⁴ *Fuel Retailers Association of SA (Pty) Ltd v Director General, Environmental Management Mpumalanga and Others*, Case CCT 67/06, (2007), ZACC 13. *Fuel Retailers Association v DG, Environmental Management, Mpumalanga*, (2006), (SCA) 109 RSA.

¹¹⁶⁵ See also *BP SA (Pty) Ltd v MEC, Agriculture, Conservation and Environment and Land Affairs, Gauteng*, (2004) (5), SA 124 (W), especially at 144B-D.

¹¹⁶⁶ See also *Earthlife Africa Johannesburg v. Minister of Environmental Affairs and others*, Case no. 65662/16 (2017).

justifiable, in addition to being sustainable while preventing ecological degradation and pollution.

The extent of environmental protection in the South African Constitution and accompanying legislations such as the National Environmental Management Act (NEMA), are the reasons that ordinary citizens feel so empowered to speak for the environment, against any persons or organisations that may harm it or a person's right to its enjoyment for any purpose. The activism is evident in big name cases against organisations or state entities not protecting the environment such as the ongoing "fight" in *Xolobeni* in the Eastern Cape where the community is fighting against a titanium mine being built on the West Coast of Eastern Cape Coast, despite the threats of death, by an international Australian mining company. What is interesting about this case, but not necessarily unique, is how capital (and its influence) has no real swing vote despite its attempt at using the environment to try and build the mine facing objections by the communities. This is because the NEMA protects forests in various ways from exploitation, that is it requires actually verifiable environmental impact assessments to be conducted before the development of a mine; secondly it requires these assessments to be conducted every five years to ensure that the operations are indeed sustainable and protect the environment which is held in trust by the current generation; and lastly the aesthetic beauty of the environment is just as important in these decisions because the Constitution acknowledges the societal and individual benefit that has to the quality and enjoyment of life of all citizens.

Although as shown by the various attempts at bypassing communities by mining companies, all this legislation would be meaningless if South Africa did not have a strong judiciary with the authority to enforce laws and make sure that the government complies with its duties. If the South African courts had little power to make such rulings or took long in making the decisions such as in the USA, then all the lobbying and court action by environmental activists would have little impact as it would not translate to law that can be used by everyone.

South African citizens are recognised as important players in protecting and growing forests, not just the government. Legal action is enforceable against those who try to harm the environment, but all citizens need to protect the environment themselves. This includes assessment of environmental impact in housing developments. The interplay between government, the judiciary and citizens has made the forest conservation and protection comfortable despite all the risks associated with going against capital.

4. Australia

Australia has signed and is a party to the UNFCCC, CBD, and UNCCD and CITES. In its attempts to conserve its forests in the dry regions of Australia, the Australian Commonwealth government has promulgated legislation, regulations and policies to protect forests which are facing huge problems of urban and agriculture expansion, desertification, wild fires and illegal logging. The *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)*, *Regional Forest Agreements Act 2002 (RFA)*¹¹⁶⁷, *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*, *Illegal Logging Prohibition Act 2012* and the *1992 National Forest Policy Statement (NFPS)*¹¹⁶⁸ are some of the important national legislation and policies concerned with forest protection in Australia.

The Australian Constitution of 1990¹¹⁶⁹ promotes that the state governments are responsible for the everyday management of forest areas and commercial activities, which are governed by legislation in a number of strict laws and the *Codes of Practice*. The Constitution ensures that the national and state laws comply with international obligations which Australia has ratified. Australia has ratified instruments and has obligations relating to climate change, desertification and biodiversity conservation. The Australian government is responsible for the implementation of the national policies that relate to forest protection.¹¹⁷⁰

Several High Court cases have stated that although it might seem like the Commonwealth government was never given any mandate in the Constitution, there is no obstacle to the Commonwealth to make environmental laws, regulations and policies.¹¹⁷¹ The Commonwealth government has also had some implied national powers recognized through judicial precedent, the *Victoria*¹¹⁷² case stated, in order to pass environmental legislation which is needed in the national government to protect the environment.¹¹⁷³ The Minister for Environment and Heritage has been given power to administer the 35 Commonwealth Acts that relate to

¹¹⁶⁷ The RFA has been the brain child and bedrock of the territories' legislation and policies, regulations to achieve sustainable forest management.

¹¹⁶⁸ National forest policy statement: a new focus for Australia's forests, December 1992, Second edition 1995, Commonwealth of Australia. See website http://www.agriculture.gov.au/SiteCollectionDocuments/forestry/australias-forest-policies/nat_nfps.pdf. Accessed 20 December 2018.

¹¹⁶⁹ The Australian Constitution, Commonwealth of Australia Constitution Act. See website https://www.aph.gov.au/About_Parliament/Senate/Powers_practice_n_procedures/Constitution.aspx. Accessed March 12, 2020.

¹¹⁷⁰ Crawford J, 'The Constitution', in Bonyhady T (ed), *Environmental Protection and Legal Change*, (1992), page 4.

¹¹⁷¹ Mason J, *Murphyores Inc. Pty Ltd v. Commonwealth*, (1976), 136 CLR 1 at 22.

¹¹⁷² *Victoria v Commonwealth* (1975) 134 CLR 338.

¹¹⁷³ At this time it was the National Parks and Wildlife Conservation Act 1975.

environmental protection. As the adjudication of environmental cases has increased and the complexity of environmental protection has increased, many cases have interpreted the Constitution and in light of these, the Commonwealth government has substantive constitutional powers to solve modern-day environmental problems.¹¹⁷⁴

The States and Territories have conditional general powers to make laws; however in matters of concurrent powers, a confusion or conflict, the Commonwealth's powers will prevail.¹¹⁷⁵ The Australian government has relied on its constitutional powers over trade, commerce and external affairs, to pass many policies and laws that relate to environmental matters including the *Environment Protection and Biodiversity Conservation Act*¹¹⁷⁶ (EPBC Act) and on matters relating to national environmental protection and significance. There are several constitutional powers that can be used by the Commonwealth government for enacting environmental laws and policies, as contained in the following (*section 51(i)*), (*section 51(ii)*), (*section 51(ix)*), (*section 51(x)*), (*section 51(xx)*), (*section 51(xvi)*), (*section 51(xxix)*), (*section 51(xxxix)*), *the power over Commonwealth instrumentalities and public service (section 52)*, (*section 90*), (*section 96*), *and the territories power (section 122)*.¹¹⁷⁷ Importantly, the Australian government has external affairs powers under Section 51(xxix) of the Constitution, allowing the Commonwealth government to legislate, enable and implement obligations of international treaties ratified by Australia. The Commonwealth also has powers to make laws for the state government under Section 122 of the Constitution.

Furthermore, regional Acts are focused on regional sustainable forest management, forest protection and sustainable development. Australia has thus established institutional frameworks for sustainable forest management which have been developed and implemented at national, state and territory levels. The States' and territory levels of government have the primary duty and responsibility for forest protection and management. The different territories classified as regions in Australia are New South Wales, Victoria, Western Australia, Tasmania and South-East Queensland.

¹¹⁷⁴ *Commonwealth v Tasmania*, (1983) 158 CLR 1. *Richardson v Forestry Commission*, (1988) 164 CLR 261. *Queensland v Commonwealth*, [36] (1989) 167 CLR 232.

¹¹⁷⁵ Australian Constitution Act, section 109.

¹¹⁷⁶ Environment Protection and Biodiversity Conservation Act No. 91, 1999. See also Environment Protection and Biodiversity Conservation Regulations 2000.

¹¹⁷⁷ See Australian and New Zealand Environment and Conservation Council, *Guide to Environmental Legislation in Australia and New Zealand*, 5th (ed), (Rept No 31, 1997), Chap. 3, Commonwealth Environmental Legislation.

Thus, Australia has become one of the leading nation in the implementation of sustainable forest management and has improved its provision of assistance to other countries which are trying to implement sustainability in forest areas. It has also observed several international forest-related agreements and has participated in the United Nations Conference on Environment and Development, and endorsed the *Global Statement of Principles on Forests*¹¹⁷⁸. It has always promoted the ITTA in its efforts to sustainable use of timber and wood products. The Australian government has also vowed to continue supporting bilateral, multilateral agreements and initiatives which are consistent with international efforts to protect forests. Moreover, each region in Australia is required to promulgate any legislation and policies in its jurisdiction. Thus, they are required to implement the principle of environmental care in all their developmental programmes and projects.

The Australian government has ratified and is a Party to the CBD. The CBD aims to conserve biodiversity, sustainable use, fair and equitable sharing of the benefits from the utilization of genetic resources. It requires Parties to develop national strategies, plans and programmes for the implementation of these measures. That is, the CBD promotes sustainable development in that Article 7 focuses on effective monitoring of biodiversity conservation programmes; Article 10 on sustainable uses of components of biodiversity; and Article 14 on impact assessments and reducing adverse impacts.

The EPBC Act is the principal central piece of Australian environmental legislation and one of the most important legislations promoted in Australia. Its aim is to provide a legal framework to protect national and internationally important flora, fauna, ecological communities, and heritage places. These are now defined by the Act as matters of national environmental significance.¹¹⁷⁹ The Act has allowed the Australian government in co-joining efforts with the States and territories in trying to provide an honest national scheme of environment, heritage protection and biodiversity conservation. The Act has focused the Australian government's interests on the environmental protection of matters that are of national significance. The States

¹¹⁷⁸ United Nations General Assembly, Report of the United Nations conference on environment and development, (Rio de Janeiro, 3-14 June 1992). See website <https://www.un.org/documents/ga/conf151/aconf15126-3annex3.htm>. Accessed on 29 December 2018.

¹¹⁷⁹ Australia's State of the Forests Report 2018, Australian Bureau of Agricultural and Resource Economics and Sciences, Department of Agriculture and Water Resources. See website http://www.agriculture.gov.au/abares/forestsaustralia/Documents/SOFR_2018/Web%20accessible%20PDFs/SOFR_2018_web3.pdf, 1-600, page 462. Accessed 20 March 2020.

and the territories now have responsibility on matters of state and local environmental protection significance.

Importantly, the Minister can make decisions as to whether any assessments and approvals are needed under the Act. The *Environment Protection and Biodiversity Conservation Regulations*¹¹⁸⁰ have been approved for the issuing of permits for matters or activities on Commonwealth land and significant projects that can affect the environment. The Act and Regulations are now being administered by the Department of the Environment. Actions that have been deemed matters that can have a significant impact on national significance require the approval by the Minister for the Environment. The framework has now created an environmental approval process in respect to state planning systems coordinated under national environmental law, which has now created a single environmental assessment and approval process dedicated for nationally environmental protected matters.

Expert advisory committees have been appointed by the Minister of the Environment to advise the government on matters of threatened species, indigenous management of land and the conservation of biodiversity under the EPBC Act. These include the Biological Diversity Advisory Committee, Indigenous Advisory Committee, Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (IESC), Interim Independent Expert Scientific Committee on Coal Seam Gas and Coal Mining and Threatened Species Scientific Committee. The Act since then has established a strong environmental framework network for the conservation of biodiversity and includes a broad range of enforcement mechanisms for non-compliance on environmental protection. The Australian Government's approach seems to be using all efforts of compliance as outlined in the EPBC Act Compliance and Enforcement Policy, this include proactive compliance measures and enforcement that can help address non-compliance. These mechanisms are civil or criminal penalties¹¹⁸¹, remediation orders and other determinations¹¹⁸², and enforceable undertaking.¹¹⁸³ If any public individual or group witnesses or has an interest that there has been a significant environmental damage, they can approach the Department of Environment.

¹¹⁸⁰ Environment Protection and Biodiversity Conservation Regulations No. 181, 2000.

¹¹⁸¹ These can apply to corporations and individuals that contravene environmental approval requirements under the Act, this also include false and misleading information to obtain any approvals.

¹¹⁸² This can be for repairing and restoring environmental damage that was caused resulting in the contravention of the EPBC Act.

¹¹⁸³ This mainly refers to civil penalties and future compliance.

Section 3 explains the objectives of the Act and Section 3A the principles of ecological sustainable development. The Act protects the environment on matters that are of national environmental significance and promotes sustainable development through sustainable use of natural resources. Furthermore, the Act is aimed at promoting a co-operative approach in the protection and management of the environment which involves governments, land owners and local communities. This co-operation also extends to the implementation of Australia's international environmental responsibilities. Section 3(f) recognizes the role played by local communities in the sustainable use and protection of Australia's biodiversity, Section 3(g) promotes the use of traditional knowledge of biodiversity with its use, involvement and co-operation.

Section 3(2) recognizes the role to be played by the Commonwealth in the protection of the environment and the involvement in matters of national environmental significance. The objectives of the Act are to strengthen intergovernmental co-operation through bilateral agreements. Furthermore, the section fosters intergovernmental accreditation of environmental impact assessments with its approval processes. It encourages the Commonwealth to adopt effective and efficient environmental assessments that can protect the environment. Thus, this Act tries to enhance Australia's capacity to ensure that the environment is being protected effectively, and reduce or prevent activities that can impact the environment. The section encourages Australia to increase capacity and ensure the conservation of its biodiversity by protecting native species and ecosystems, and identifying activities that threaten biodiversity. Such identification of activities would lead to the implementation of plans that address such processes and reduce or prevent the loss of biodiversity.

Section 3A focuses on the principles of ecologically sustainable development which are the decision-making processes which are effective and integrate both long-term and short-term socio-economic, ecological and equitable considerations. The section also recognizes the implementation of the precautionary and the prevention principle to prevent significant environmental degradation. Section 3A(c-e) also recognizes the inter-generational equity, fundamental considerations to decision-making in the conservation of biodiversity and ecological integrity, and improved valuation of natural resources through pricing and other market incentive mechanisms.

Section 12 recognizes that certain natural reserves can be identified as World Heritage Sites. Such sites are then protected by law and no person shall cause significant damage to these sites.

These environmental sites can be ecosystems, national parks and reserves that Australia finds nationally important for conservation and protection. If damage is done, the person is liable for civil, criminal or even administrative sanctions can be imposed. The person responsible can also be held criminally liable for causing this damage to the environment and site. The use of criminal law is used in Australia as a deterrent mechanism to prevent environmental harm and damage. The imprisonment of such a person can amount to a maximum of seven years. Furthermore, Section 18 states that no person or corporate shall degrade or damage listed threatened species or ecosystems. That is, actions that can lead to the degradation and damage of national reserves and protected areas of Commonwealth lands are prohibited.

The Minister according to Section 37 can declare a region a bioregional area which prohibits any activities that cause degradation and damage to this environmental region. The Minister will have to approve the bioregional plan to protect this region. The Minister will have to be satisfied that the plan satisfies the CBD and CITES, and will promote the conservation status of the ecosystem or species in that region. In addition, Section 39 states that there are certain regions and areas where certain acts cannot be performed, especially in regional forest areas that are protected under the Regional Forest Agreements Act (RFA)¹¹⁸⁴. Thus, for any actions, development or activities that might have a significant effect on the environment, the regional assessment and the assessment under the *Environment Protection (Impact of Proposals) Act*¹¹⁸⁵ 1974 has to be performed.

Moreover, Chapter 4 of the Act focuses on the environmental assessments and their approvals. These assessments are taken to reduce significant damage to the environment according to Section 66. It also prohibits without approval certain controlled actions (prohibited actions without approval as of Section 67) that can lead to environmental degradation or damage. Section 74A states that it is an offence to take action and start a project before a decision has been approved. It must be noted that such actions would result in a penalty and Chapter 2 of the *Criminal Code*¹¹⁸⁶ is also applicable as it sets out the general principles of criminal responsibility.

¹¹⁸⁴ Regional Forest Agreements Act No. 30, 2002. Regional Forest Agreements, Australian Government, Department of Agriculture, Canberra City. See website <http://www.agriculture.gov.au/forestry/policies/rfa>. Accessed 20 December 2018.

¹¹⁸⁵ Environment Protection (Impact of Proposals) Act No. 164 of 1974.

¹¹⁸⁶ Criminal Code Act No. 12 of 1995.

The Minister can list and protect critical habitats in accordance with legislation and regulations for the survival of threatened ecological communities. Such ecological communities can be forest areas or wetlands areas that are threatened with loss of their ecosystem functions and species. This register of critical habitats must be open for public inspection. It is an offence under Section 207B to knowingly damage a critical habitat (this also covers forests, especially intentionally or negligently causing wildfires). Thus, Chapter 2 of the *Criminal Code* applies as it establishes the general principles of criminal responsibility, strict liability, a conviction of up to two years and fine, or even both. The sale or lease of the land with a critical habitat does not matter as long as the contract honors the critical habitat's protection.

The Governor-General can also proclaim an area as a conservation zone to protect biodiversity. Furthermore, regulations and policies can be made to protect the conservation zone and list a wide range of activities. The objective of the conservation zones is to protect biodiversity. Section 390E states that the activities that have to be regulated in the conservation zones to reduce environmental degradation. These include prohibit the pollution of soil that will cause harm to people and biodiversity, regulate tourism, provide for protection of the conservation zone, prohibit access, regulate camping, removal of trespassers, regulate use of fire, regulate conduct of persons in these zones, regulate trade or commerce in the zones, regulate the taking of animals and plants, regulate use of explosives, regulate mining activities, regulate construction, regulate taking and felling of timber, provide for the powers and functions of wardens and rangers in these zones, give securities for compliance with regulations, provide for the issue of licenses or permits, regulate vehicles and removal of aircraft.

In addition, Chapter 2 provides the bases for the Minister to make decisions. Section 391 states that the Minister must consider the precautionary principle in taking all decisions that might significantly affect the environment. Subsection 2 defines the precautionary principle as 'is that lack of full scientific certainty should not be used as a reason for postponing a measure to prevent degradation of the environment where there are threats of serious or irreversible environmental damage'. In addition, Part 17 recognizes the use of enforcement mechanisms to reduce environmental degradation. It gives various functions to wardens, rangers and inspectors by the Minister. These officers are supposed to monitor ecological communities, protected areas and any specie that is classified as threatened.

The Minister can make conservation orders to control activities and instruct people to take actions or required activities to protect listed threatened species or ecosystems. Contravention

of such a conservation order is an offence under this Act which focuses on protecting species and ecosystems that are listed as threatened. The Minister can also write orders restricting certain activities in these areas. The Minister must also consider socio-economic and ecological matters in making such a declaration and decision. The Minister can also consult any expert or agency in making such a declaration which is to be published on radio, local newspapers and in the Gazette.

In addition, a person who contravenes the Act can be given an injunction according to Section 475. These can be prohibitory injunctions, additional orders, mandatory injunctions and interim injunctions. These injunctions are focused on restraining a person from engaging or performing any activities that might significantly affect the environment or they might be requiring a person to act and prevent environmental degradation.

Furthermore, Section 480A states that after the commencement of this Act, any person who engages in activities that are an offence or have contravened this Act or its regulations, the Federal Court can make a remediation order which requires such a person to take remedial actions to repair, mitigate and restore the environmental damage and degradation that has taken place. Section 499 states that if the Minister believes that an act or omission has caused damage or degradation to the environment, s/he can make an order to prevent, repair, mitigate and restore the damaged environment. Furthermore, the *Biological Control Act*¹¹⁸⁷ has been promulgated to reduce invasive species in forests and other ecosystems in Australia.

Section 480D also states that the Minister may make remediation determinations if the person contravened a civil liability provision of Part 3 of the Act. Section 481 states that the Federal Court may order someone who has contravened the Act to pay a civil penalty under certain provisions. The Court may order a wrongdoer to pay a monetary penalty which relates to the environmental damage that has occurred. Landholders can also be criminally charged and civil penalty can be imposed for contravening this Act if they do not take reasonable steps to reduce environmental degradation or damage. The conduct of directors, agents and employees of a corporation is also subject to questioning if the provisions of this Act have been contravened and such actions can lead to criminal or civil liability.

¹¹⁸⁷ Biological Control Act No. 139 of 1984 as amended. This compilation was prepared on 9 July 2008 taking into account amendments up to Act, No. 73 of 2008.

The *Australian Criminal Code* applies to all environmental offences in this Act. Chapter 2 of the *Criminal Code* has set out the general principles of criminal responsibility on environmental harm and degradation. However, corporate criminal responsibility has been excluded from applying to the offences in this Act. In addition, the Act recognizes the operation of Section 211 of the *Native Title Act*¹¹⁸⁸. This section explains that holders of native title rights which cover certain activities do not need authorization by other policies or laws to engage in those activities. Thus, the Act recognizes and does not affect the operation of the *Aboriginal Land Rights (Northern Territory) Act*¹¹⁸⁹.

The *Aboriginal and Torres Strait Islander Heritage Protection Act*¹¹⁹⁰, provides for the environmental protection of areas with particular significance to indigenous Australians and Torres Strait Islanders and in accordance with indigenous traditions. In addition, the *Aboriginal Land Rights (Northern Territory) Act* has been promulgated which aims to recognize the land tenure rights of indigenous communities who have security over their lands and consultations should be held whenever a decision needs to be taken about such lands and regions. Indigenous Australians and Torres Strait Islanders are also afforded public awareness forums and participate in the debates or policies that might affect their lands. In addition, the *Native Title Act*¹¹⁹¹ protects native title rights and interests. It also provides mechanisms for matters concerning native title and also allows for the validation of past actions. Thus, the Act constrains the Commonwealth, State and Territory governments in making decisions that will affect native title rights and interests.

The *Aboriginal and Torres Strait Islander Heritage Protection Act* does not carry any assessment processes, but these can be activated by Indigenous and Torres Strait Islander communities if they perceive that any project will cause a significant impact on the environment. The Act offers a way for local communities to protect themselves and their environment. It provides that the Minister for Aboriginal and Torres Strait Islander Affairs can take immediate measures and emergency declarations that can be permanent in order to protect the values of Indigenous and Torres Strait Islander communities. The Minister must consider reports and redressing the matter under Section 10(4) which includes the significance of the

¹¹⁸⁸ Native Title Act No. 110 of 1993.

¹¹⁸⁹ Aboriginal Land Rights (Northern Territory) Act No. 191 of 1976.

¹¹⁹⁰ Aboriginal and Torres Strait Islander Heritage Protection Act No. 79, 1984.

¹¹⁹¹ Native Title Act No. 110 of 1993, Compilation No. 43. Compilation date: 22 June 2017. Includes amendments up to: Act No. 53 of 2017.

place, nature of the threat, potential impacts on the rights of communities and the degree of protection that must be offered to the area, state or territory.

The objective of an assessment on the native title, heritage and cultural values includes protecting native title rights, protection of environmental features that are important to the local communities, establishment of co-operative arrangements, protection of traditional knowledge and protection of forests. This Act is coordinated with the *Australian Heritage Commission Act*¹¹⁹² and the *Environmental Protection (Impact of Proposals) Act*¹¹⁹³. An environmental impact assessment under the *Environmental Protection (Impact of Proposals) Act* (EP (IP) Act) requires attention to the environmental issues that are being faced and relevant to the Aboriginal and Torres Strait Islander communities.

The Biodiversity Assessment under the CBD has also been promoted in Australia to identify components biodiversity for their conservation and sustainable use, monitor, and identify processes and activities that pose a threat to the environment. Furthermore, this is focused on developing protected areas if required, and the promotion of environmentally sound and sustainable development in buffer zones areas adjacent to protected areas. It is also focused on the protection of the customary use of biodiversity resources in accordance with traditional cultural practices, the promotion of intellectual property, and the protection of traditional knowledge.

Consistent with the CBD, an assessment of the biodiversity will also examine how to protect biological resources, the role of local communities and the use of traditional knowledge in maintaining an environment that is consistent of heritage and cultural values. The Agenda 21 and the *Statement of Forest Principles* recognizes the role of local communities in protecting and managing forest resources. The National Estate assessment which is conducted by the Australian Heritage Commission¹¹⁹⁴ also provides information on the protection and management of protected sites and requires a wider assessment.

Furthermore, the main objective of the EP (IP) Act is to make sure that projects that might cause a significant environmental damage or degradation are fully examined; and that actions are taken into account in relationship to actions, proposals and decisions which are being taken

¹¹⁹² Heritage Commission Act No. 57 of 1975.

¹¹⁹³ Environmental Protection (Impact of Proposals) Act No. 36 of 1975.

¹¹⁹⁴ See website <https://www.environment.gov.au/heritage/organisations/australian-heritage-council>. Accessed 2 January 2019.

on behalf of the Commonwealth Government. This includes the formulation of proposals, processing of projects, enforcement of agreements, participation in decision making and incurring of expenditure on behalf of the Commonwealth government. The Act defines the environment as all aspects of the surroundings which affect human beings. This broad definition encompasses the need of a regional assessment process that includes a National Estate, World Heritage, endangered species and local community values.

Due to the increase in illegal logging, the Commonwealth government has promoted the *Illegal Logging Prohibition Act and the Illegal Logging Prohibition Regulation*¹¹⁹⁵ (*the Regulation*) which is for imported timber. This has been partly due to the linkages between illegal trade and other international crimes. The Act is aimed at supporting the domestic and international trade of legally harvested wood and also wood products by giving consumers and the broader business sector certainty about the wood they wish to purchase and its legality. It also makes it a criminal offence to process illegally logged timber whether intentionally, negligently or even the possession.

It also prescribes due diligence requirements to reduce the risk of buying or obtaining illegally logged wood, and lists wood products subject to those many requirements. These due diligence requirements are meant for use by the importers of the legally listed wood products, and by the processors of the domestically grown raw logs. The due diligence processes require the corporations and businesses to have a system that documents and explains how illegal logging and such actions to reduce it are being met; gather information about their supply chain and products which they import; assess the risk of illegal logged wood and products; mitigate the risks and keep a written record of the many processes being undertaken. State-specific guidelines have also developed and released to help ensure that the processors understand the legal frameworks in South Australia, Western Australia, Tasmania, New South Wales, Queensland and Victoria; and to help regulate wood harvesting. In addition, there are also Country Specific Guidelines that have been developed between Australia and its trading partners such that importers understand the timber harvesting laws and set due diligence arrangements in their countries so that they trade with Australia.

Section 6 ‘prohibits the importation of illegally logged wood and the final processing of illegally logged raw logs’. It also requires importers and processors to conduct a due diligence

¹¹⁹⁵ Illegal Logging Prohibition Regulation No. 271 of 2012.

to reduce risk of trading in illegally logged timber. The importers must provide declarations, at the time of import, to customs about the due diligence measures which they have undertaken. Inspectors are also empowered by Part 4 of the Act to monitor, investigate and enforce the purposes of the Act.

Section 15 of the Act states that the processing of illegally logged raw logs will result in a penalty of five years imprisonment or penalty. The Act establishes the illegal logging framework and makes it a criminal offence to intentionally import pulp, timber, wood and paper products into Australia or raw logs that has been taken without licenses. The regulations also promote the Timber Development Association and the Australian Timber Importers Federation funded by the Government and develops Legal Compliance Toolkits. These provide industry guidelines and innovative ways of satisfying the new due diligence requirements.

Section 60 further states the procedures of obtaining a civil penalty and how they can be enforced under section 61. Furthermore, section 67, 68, 69 and 70 states the criminal proceedings under this Act. Section 70 also states that an infringement of this Act can also result in an infringement notice which can result in loss of business and trading licenses. Currently, the Act has been focused on enforcing the legal trade and logging of timber and wood. The Act also comes with a number of regulations under the *Regulation*¹¹⁹⁶.

Furthermore, each time an importer brings wood or timber products into Australia they are required to declare that they have complied with due diligence requirements. Section 18(3) states that the due diligence requirements for processing raw logs include gathering information for assessing risk (kind, origin and the details of the harvest of the raw logs, name and business addresses of the suppliers of logs, evidence of compliance with State or the territory laws and accuracy and reliability of the information gathered); identifying the risk; mitigation of the risk; auditing; provide statements of compliance; taking remedial action; publishing information; providing reports and information to the Minister. Regulations can also be promulgated to the Act that can state exactly what is required by the due diligence report.

Furthermore, the *Resource Assessment Commission Act*¹¹⁹⁷ has also been promulgated. Its objective is upholding the work of the Resource Assessment Commission. The function of the

¹¹⁹⁶ Ibid.

¹¹⁹⁷ Resource Assessment Commission Act No. 94 of 1989 as amended, (This Act was repealed by Act No. 73 of 2008 on 3 July 2008), and this compilation was prepared on 1 January 2004 taking into account amendments up to Act No. 86 of 2003.

Commission is to hold inquiries and make reports regarding the resources of Australia. The Commission counts and writes the Australia's natural resources. This is important in identifying resources that need protection measures. It also identifies the use of these resources by local communities. The Commission also provides an account to government on what solutions or actions should be taken in protecting these resources. Section 7 states that there should be an integrated approach in the conservation and use of resources. The decisions taken must always recognize and priorities community use of those resources. However, sustainable means of utilization of resources in all regions must always be followed.

In addition, since the establishment of national parks, the Minister can now elect the Director of National Parks who oversees the management of national parks. The functions of the Director include administering, control and management of the conservation zones, protecting biodiversity, contribute to their protection, co-operate with other countries in matters that relate to the establishment of national parks, and make recommendations to the Minister. Moreover, Australia has an institutional framework that can support the sustainable management of forests. Over the years, forest policy in Australia has developed and it is being implemented nationally and in all territories. The primary responsibility for sustainable forest management has been both at State and territory levels.

The State and territory governments are signatories to the *1992 National Forest Policy Statement*¹¹⁹⁸ (NFPS). It provides the framework for governments to co-operate and achieve sustainable forest management, while also alleviating poverty. The key element for the NFPS has been implemented by the *Regional Forest Agreements Act*¹¹⁹⁹ (RFAs) between the Australian government and territory governments. These agreements are 20 year plans for sustainable forest management and are designed to provide co-ordination and bring certainty in local communities dependent on forests, forest-based industries and achieve sustainable forest management. The NFPS has been adopted by the RFAs that have been set up in every region in Australia to manage and protect regional and native forests. This has been designed for forest-based industries, local communities dependent on forests and to achieve sustainable

¹¹⁹⁸ National forest policy statement: A new focus for Australia's forests, December 1992, Second edition 1995, Commonwealth of Australia. See website http://www.agriculture.gov.au/SiteCollectionDocuments/forestry/australias-forest-policies/nat_nfps.pdf. Accessed 20 December 2018.

¹¹⁹⁹ Regional Forest Agreements Act No. 30 of 2002. Regional Forest Agreements, Australian Government, Department of Agriculture, Canberra City. See website <http://www.agriculture.gov.au/forestry/policies/rfa>. Accessed 20 December 2018.

forest management. The NFPS provides the institutions and framework within which the Australian government can co-operate and achieve sustainable forest management.

In addition, the Australian government, NFPS and the RFAs have a number of agreements which are focused on achieving forest protection and conservation in Australian forests. They have also helped to enact several legislations and policies for example the *National forest Industries Plan in 2017*¹²⁰⁰, *Illegal Logging Prohibition Act*¹²⁰¹, *Plantations for Australia: the 2020 Vision*¹²⁰² and the *National Indigenous Forestry Strategy*¹²⁰³. The Australian Government has agreed that local communities can promote poverty alleviation goals and tenure rights from all forests in their territory. These goals are being pursued regionally with planning frameworks that integrate environmental, social and commercial goals. Furthermore, Australia aims to maintain permanent forests in all of its regions in an ecologically sustainable manner and also for future generations.

The objective of the regional assessment is to uphold the values of the NFPS which are the commitments to sustainable forest management and protection of nature reserves and values of forests. The NFPS promotes the protection of forests for ecologically sustainable forest management - this entails maintenance of environmental processes that can sustain forest ecosystems; conservation of biodiversity associated with forests; and protection of water resources. The Commonwealth Government has agreed to protect forests for the conservation of species, cultural value, heritage significance and the aesthetic attributes in Australia. Nature protection in Australia has been pursued through the use of national parks and reserve systems, which are then complimented by community management of forests outside national parks. The use of private management of forests has also been adopted in some regions and territories.

The international community has been grappling with the application of ecosystem approach and sustainable forest management. The operational guidelines and the principles of ecosystem approach and the sustainable forest management has been implemented effectively using the

¹²⁰⁰ Growing a better Australia: A billion trees for jobs and growth. See website <http://www.agriculture.gov.au/SiteCollectionDocuments/forestry/national-forest-industries-plan.pdf>. Accessed on 20 December 2018.

¹²⁰¹ Illegal Logging Prohibition Act No. 166 of 2012.

¹²⁰² Plantations for Australia: The 2020 Vision. An industry/government initiative for plantation forestry in Australia. See website http://www.agriculture.gov.au/Style%20Library/Images/DAFF/_data/assets/pdffile/0009/2398185/plantations-australia-2020-vision.pdf. Accessed 20 December 2018.

¹²⁰³ The National Indigenous Forestry Strategy (May 2005). See website http://www.agriculture.gov.au/SiteCollectionDocuments/forestry/australias-forest-policies/nifs_strategy.pdf. Accessed on 20 December 2018.

Comprehensive Regional Assessment and the RFA processes in Australia's forest areas. The ecologically forest sustainable forest management has been equated to the ecosystem approach. The ecosystem approach provides an ecosystem-based strategy that uses specified guidelines to support protection and sustainable use of biodiversity resources for present and future generations.¹²⁰⁴

The use of the ecosystem approach under the RFAs is now based on societal needs and scientific assessments, and this has developed forest policies that are aimed at sustainable utilization of forest resources. The NFPS has become a key element in Australia to achieve sustainable forest management, ensuring that the ecosystem approach is implemented in a secured institutional arrangement. These elements have provided Australia with an adaptive management that continues to progress and improve, providing approaches that can help achieve sustainable forest management under certain conditions of changing socio-economic, ecological and cultural factors.

Market place and public acceptance of forest instruments are important in the protection of forests in Australia. This has been started earlier by forest certification which was a voluntary instrument, and now an obligation on the timber producers. The marking and labelling of forest products has reduced the selling of illegally logged logs, which has made it easier to track illegal logged timber. The most important part in Australia has been the importance of valuing forests and the role of local communities in forest protection. They have educated the public about the importance of forests, this has led to many instruments and role players getting involved in reducing deforestation and forest degradation as seen above.

The NFPS has been aligned with the ecosystem approach in addressing the forest issues and values, as this is pointed out in the Operating Guideline 1. The Principle 12 considers the importance of all industries, society and scientific disciplines. The engagement and participation of local communities is recognized as an important element in the protection of forests. The objective of the RFAs process is to protect forests whilst increasing forest uses and values as stated in Operational Guideline 2 within the environmental constraints, the management of land and water biodiversity in forest areas for future use. The Operational Guideline 5 integrates public participation and involvement, regional committee and policy-

¹²⁰⁴ The Convention on Biological Diversity. Ecosystem Approach. See website <https://www.cbd.int/ecosystem#:~:text=The%20ecosystem%20approach%20is%20a,three%20objectives%20of%20the%20Convention>. Accessed on 16 Jan. 21.

makers to co-operate and co-ordinate in developing forest standards. Thus, Principle 1 gives the public and stakeholders the right to comment on the regional assessment processes and the policies set out in their regions. The RFAs have been established not only to protect forests in protected areas, but also forest protection and conservation outside reserves and protected areas as stated in Principle 3. The promulgation of management plans, policies and codes for forest practice in both regional and local communities has been aimed at achieving Principle 2, 5 and Operational Guideline 4.

The integral part of the RFA has been the evaluation of economic costs and benefits; employment in the regions; development of international trade-offs to ensure communities are compensated; and sustainable forest use. Furthermore, social assessments are necessary to assess the impacts of decisions that result in resource allocation and use of forests within the regions. The Agreements also aim to reduce market distortions which can cause adverse effects on the conservation of biodiversity. The Australian government has promoted permanent protected areas by legislation and ensuring there is a balance between sustainable use and effective management of forest resources. The Principle 7, 8 and 9 state that indicators are practical, cost-effective and measure changes in forest uses in different spatial areas and time scales. This approach will allow for a wide range of ecosystem values that recognize adaptive management on spatial and temporal basis. These indicators apply to many and all forest tenures, and are then used to report and monitor on forest protection and management outcomes that can be achieved under RFAs Operational Guideline 3.

The RFA performance thus far has been assessed through monitoring the sustainability indicators together with review of commitments that have been made formal after every five years. In addition, trends of change are being used in indicators to determine long-term policy formulations and the continuous improvements in forest conservation and management. The government has also established criteria and indicators of sustainable forest management and ecological management systems for achieving sustainable forest management at the forest management unit level as stated in Principle 2. It has also laid the foundation for adaptive management and development of effective forest certification schemes. These schemes provide for market-based incentives and the improvement of sustainable forest management by allowing forest managers to independently and objectively demonstrate their environmental credentials to forest resource consumers.

In addition, Australia is setting 20 year goals to develop internationally competitive and ecologically sustainable means for timber and wood production and also wood product industries through its National Development Plans and NFPS. These programmes are set to provide Australia with the best profits using efficient environmentally sustainable friendly means to grow and harvest forests. Such decisions will require integrating and coordinating environmental sustainable decision-making and management. This is meant to reduce fragmentation and duplication in the land-use management and decision-making processes. It ensures that private forests are conserved under the same sustainable manner and goals as with community forests. In these regions the government has also set out goals to improve employment, education and training. This is meant to expand the workforce of forest working class and provide proper opportunities to local communities.

There are channels that have been created by the NFPS for public awareness, education and involvement in forest decision-making programmes. This is to help communities understand forest valuation and help communities understand and support sustainable forest management in Australia, thus also providing understanding for effective public participation in decision-making. Moreover, the NFPS encourages goals that develop and increases research and development. This allows for co-operation and co-ordination in integrating knowledge about aspects of forests, sustainable forest management and timber product development. In addition, Australia has international responsibilities under international environmental instruments which it has ratified. These goals are the promotion of sustainable forest management and the promotion of forest protection in Australia.

The government of Australia has also set broad national goals to achieve sustainable forest management, namely that governments should set regulatory frameworks for socio-economic and ecological use of forests; sustainable utilization of forests based on appropriate activities; governments will continue to seek complimentary solutions for sustainable forest management; and there should research and study that will provide for sound scientific basis for efficient use of resources and sustainable forest management. However, the main objectives of this Statement are to protect and maintain a permanent native forest and forest protection.¹²⁰⁵

Furthermore, the NFPS recognizes the use of the precautionary principle when dealing with forests and developmental projects. If these principles are not achieved, the government can

¹²⁰⁵ See website <https://www.agriculture.gov.au/forestry/policies/forest-policy-statement>. Accessed on 16 January 2021.

purchase private lands for the conservation and protection of forests. Thus, the government will continue to monitor development projects and reduce their effects on the environment. The Australian government has taken measures and will continue to take measures to reduce deforestation and forest degradation. These RFAs use methodologies that are evidence-based to determine how to use forests, uses of forests, forest protection and management strategies. They are the results of scientific study, negotiation and consultation on forest functions, forest markets and forest protection. The Act also establishes a comprehensive and public body source of information for the national and regional monitoring and reporting in all Australia's forests, to support decisions making.¹²⁰⁶

Furthermore, the Australian government has set the *Plantations for Australia: the 2020 Vision*¹²⁰⁷ which is a strategic partnership to enhance sustainable plantations for timber. It has been a partnership between State and territory governments and the timber growing and processing industries. The main objective of the Vision is to enhance regional wealth creation and continue to build an international competitiveness through sustainable forest management by 2020. The *National Indigenous Forestry Strategy*¹²⁰⁸ encourages local indigenous communities to participate in the timber and forest industry by forming business partnerships.

There are ten RFAs that have been promulgated which cover commercial native forestry regions, five are in Victoria, three in New South Wales and one of each in Western Australia and Tasmania. They seek to balance socio-economic, cultural and environmental demands on forests by setting regional obligations and commitments to forest management. They aim to deliver certainty in resource access and the supply to industry, sustainable forest management, and expanding permanent forests and biodiversity conservation in Australia.

The NFPS had already set out national goals which could be pursued at these regional levels. The framework was focused on socio-economic, commercial and ecological objectives to ensure Australia returns to the fundamental sustainable utilization of forests. This enables the

¹²⁰⁶ Australia's state of the forests report (2018), Criterion 7, Legal, institutional and economic framework for forest conservation and sustainable management, page 462. See website on https://www.agriculture.gov.au/sites/default/files/abares/forestsaustralia/documents/sofr_2018/web%20accessible%20pdfs/SOFR_2018_Criterion7_web.pdf. Accessed on 17 January 2021.

¹²⁰⁷ Plantations for Australia: The 2020 Vision an industry/government initiative for plantation forestry in Australia, (2002) Revision. See website http://www.agriculture.gov.au/Style%20Library/Images/DAFF/_data/assets/pdffile/0009/2398185/plantations-australia-2020-vision.pdf. Accessed on 23 December 2018.

¹²⁰⁸ The National Indigenous Forestry Strategy, (May 2005). See website http://www.agriculture.gov.au/SiteCollectionDocuments/forestry/australias-forest-policies/nifs_strategy.pdf. Accessed 20 December 2018.

overall mandate of government to achieve sustainable forest management. The RFAs sought an economic and recreation function of forests in Australia. The Commonwealth government's role has been to co-ordinate national approaches to environmental and industry development issues. That is, State and Territory have a constitutional mandate and responsibility for sustainable forest management. These 20 year plan agreements are focused on the ecological, socio-economic and cultural values that natural forests can provide for current and also future generations beyond 2020.

The Scientific Comprehensive Regional Assessments of values and uses of forests are important for the consultation with stakeholders. This has resulted in a multi-faceted forest conservation reserve system which protects biodiversity, old forests, and secure access to wood and certainty to the wood industry. Thus, the RFAs describe the commitments that have been made by each government to promote and achieve sustainable forest management. The key elements of the RFAs include sustainable forest management, sustainable forest products industries, the development of international competitive timber and wood industries, integration and strategic forest management systems that can respond to new information.

The forest operations in the RFA regions are not subject to Part 3 of the legislation *Environmental Protection and Biodiversity Conservation Act* as a requirement of a license under the *Export Control Act*¹²⁰⁹. This has removed the Commonwealth government from the day-to-day forest protection and management in the recognition that the regional assessments taken prior to the RFA signing had addressed the socio-economic and ecological impacts of forest operations; sustainable forest management protects the environment; protecting threatened species; maintaining and establishing reserves; promoting monitoring and evaluation; and revising, developing and implementing the forest management plans. The RFAs also provide for the protection of threatened species and ecological communities. Each region has a list of threatened species or communities that need further protection and thus must develop recovery plans and threat abatement plans with consistence to the *Environment Protection and Biodiversity Conservation Act* and other State legislation.

The Commonwealth position is focused on the development of RFAs. The process offers an efficient mechanism whereby the regional government and the Commonwealth can reach agreements on the long-term use, protection and management of forests in a particular region.

¹²⁰⁹ Export Control Act No. 47 of 1982 as amended, this compilation was prepared on 22 February 2012 taking into account amendments up to Act No. 46 of 2011.

The State governments initiate this process by inviting the Commonwealth to assess a specific region to develop a Commonwealth-State forest agreement in a particular region. Thus, RFAs co-ordinate the decision-making processes relating to government's obligations and interests in forest uses. This reduces uncertainty, duplication and fragmentation in the decision-making processes in government producing an effective and efficient agreement on forest management and uses. This will also facilitate proper land-use planning and project development approvals, protect the environment and culture values.¹²¹⁰

The Commonwealth's purpose is then to finalize the RFAs (it must be recognised that the RFAs are about 20 years old and consultations are being done to renew) to be consistent with the necessary data, discussing the options and undertaking the assessments. There are timeous identified stages in the regional forest agreement processes. The scoping agreement stage is the first and is focused on identifying government obligations and regional objectives. The forest values viewed as the identification and assessment of cultural, environmental, socio-economic impacts and taking account of local communities. The generation of forest resource use which are options based on the environment, heritage, economic and social assessments. This involves the participation of the local governments, unions, industry, conservation groups and regional economic development. The regional territories are required by government to ensure that they design policies that are aimed at management, land conservation programmes and also codes of practices. Furthermore, the government also facilitates the conservation of private forests and providing measures, technical support, education programmes, codes of forest practice and land clearing controls to reduce forest degradation. The last stage involves the Commonwealth and the State concerned negotiating RFAs after the regional assessment.

Importantly, New South Wales promulgated the *National Parks and Wildlife Conservation Act*¹²¹¹ with the aim of protecting, control, and research on their biodiversity. The Act also establishes national parks and reserves across the State. The *National Parks and Wildlife Regulations*¹²¹² have also been promulgated under the *National Parks and Wildlife Conservation Act*. These regulations prohibit certain actions that can degrade forest ecosystems. Those include camping and starting of fires, certain activities also require licenses and permits. The contravention of such an Act results in penalties amounting to a thousand Australian Dollars or a criminal conviction, or even both. The enforcement of such actions is

¹²¹⁰ See website on <http://www.fao.org/3/w7706e/w7706e02.htm>. Accessed on 18 January 2021.

¹²¹¹ National Parks and Wildlife Conservation Act No 80 of 1974.

¹²¹² National Parks and Wildlife Regulation No. 427 of 2009.

taken by the game wardens that have the power to arrest or confiscate species or materials that can cause environmental degradation. This allows the Australian Government to promote protected areas, conservation of biodiversity and also prevent actions that can lead to significant environmental damage. These protected areas promote health, economic, social, and educational benefits, and protect significant cultural values.

In addition, the Commonwealth also partake in *Environmental and Heritage Obligations and Assessments*¹²¹³. The Heritage Assessments have been guided by international instruments and also the *Australian Heritage Commission Act*¹²¹⁴. The Act provides the protection of heritage sites such as natural and cultural environments that are of national significance. The obligations of the Act are to identify places in the National Estate and prepare a register of all such places that should be protected under national laws. The NFPS also describes the meaning of a comprehensive regional assessment process. The Commonwealth also focuses on identifying endangered species under the *Endangered Species Protection Act*¹²¹⁵ and also wilderness values for developing wilderness systems which are protected under the NFPS. It also drives initiatives to conserve biodiversity and sustainable use under the CBD and protection of Aboriginal and Torres Strait Islander's heritage and forests under the *Aboriginal and Torres Strait Islander Heritage Protection Act*. The EP (IP) Act requires the Commonwealth to take an impact assessment and fully examine projects that can significantly affect the environment.

Furthermore, there is a requirement of economic and social assessments which has been the responsibility of the Commonwealth. This is aimed at improving the socio-economic welfare of all Australians by protecting the environment. The Australian government when making decisions that can have broader implications consider the community's socio-economic and social well-being. Thus, an economic and social assessment will be taken as it is an integral part of full assessment on the basis of negotiating a regional forest agreement. Governments recognize the non-commercial and commercial opportunities from the use of forest resources. That is, the socio-economic assessments can also account for forest uses and how to accommodate these extended uses through sustainable forest management and utilization of

¹²¹³ Environmental and Heritage Assessments, Australian Government, Department of Agriculture and Environment. See website <http://www.agriculture.gov.au/forestry/policies/rfa/about/process/environmental-heritage>. Accessed on 21 December 2018.

¹²¹⁴ Australian Heritage Commission Act No. 57 of 1975 as amended. This Act is to be repealed by Act No. 86 of 2003.

¹²¹⁵ Endangered Species Protection Act No. 194 of 1992.

products. Mainly, the assessment is focused on integrating sustainable utilization and industry development opportunities in these regions.

The NFPS has been promulgated to provide an assessment of ecologically sustainable forest management. This is aimed at forest management systems, practices and processes, whilst also focusing on biodiversity conservation, local community participation and forestry industry development within the principles of ecosystem approach. This statement seeks to balance local communities' forest uses within a confined region-based planning framework. This integrates environmental socio-economic, heritage and cultural objectives so that provisions can be made that recognizes forest functions. It has become Australia's national strategy for sustainable forest management envisaged under the CBD Article 6(a) and (b) and the UNCED Forest Principles. The ecosystem approach is an important component in the NFPS and the Australia's government implementation of sustainable forest management.

The government of Australia under the NFPS has also availed plans to promote forest research and development. These efforts are meant to provide for solutions that are focused and innovative in the protection forests. This research can be focused on forest ecosystems, biodiversity, EIA, market aspects, forest valuation or any other field that enhances forest protection. Adequate research is being facilitated through universities, forest management agencies, Commonwealth Scientific and Industrial Research Organization (CSIRO), NGOs and other research bodies.

The National Forest Inventory¹²¹⁶ (NFI), governed by the National Forest Inventory Steering Committee¹²¹⁷ (NFISC) and established in 1988, has continued to develop and direct committee representations in the government. Under the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) lies the NFI management team and the secretariat support for the NFISC. It is composed of the members representing the States, territories and the Australian government agencies which are involved in forest information management. The committees have defined information requirements and data exchange programmes between government and other institutions or databases. As an entity, the NFI has enabled the much

¹²¹⁶ Australia's National Forest Inventory, Australian Government, Department of Agriculture, ABARES. See website <http://www.agriculture.gov.au/abares/forestsaustralia/australias-national-forest-inventory>. Accessed 23 December 2018.

¹²¹⁷ National Forest Inventory Steering Committee, The Australian Government Department of Agriculture and Water Resources and the Australian Government Department of the Environment. See website <http://www.agriculture.gov.au/abares/forestsaustralia/australias-national-forest-inventory/national-forest-inventory-steering-committee>. Accessed on the 5th of January 2019.

needed calculation of the nationally consistent and comprehensive attributes describing the Australian forests.

The main objectives of the NFI is to be the authoritative source of integrated national forest data; promote and develop the Australian national standards and protocols that relate to forest data collection; management and support forest policy development and policies that relate to sustainable forest management; provide forest information and products; decision-making; monitoring and reporting. The NFI is the key repository for data that concerns Australia's forests. It is also the main focus for the source of data for the public communication of information and mandated national reporting as required to produce Australia's *State of the Forests Report*¹²¹⁸.

The results of these research processes are disseminated effectively in a timely manner in Australia. Annually a *State of the Forest* is published in Australia and the Forest and Wood Products Research and Development Corporation¹²¹⁹ has been established, the latter identifies priorities, commission and evaluate research. It is also focused on effective communication of research by scientists, the private sector and the wider community. Such efforts have been collaborated with the Rural Industries Research and Development Corporation¹²²⁰ and the Land and Water Resources Research and Development Corporation.¹²²¹

In addition, the conservation and protection of forests must be based on sound well-researched and understood principles of forest ecosystems and their functions. The Australian government has required all territories to co-operate and improve their forest databases to make sure that policy, decision-making and management are prioritized with the best information available. The government has set out plans for forest protection from harmful effects such as weeds, pests and wildfires. Forest management plans are being implemented to identify priorities and cover forest threats. The government will also continue to co-operate and co-ordinate efforts between the environmental affairs and agriculture departments to reduce invasive species and

¹²¹⁸ Australia's State of the Forests Report, Department of Agriculture. See website <http://www.agriculture.gov.au/abares/forestsaustralia/sofr>. Accessed on 28 December 2018.

¹²¹⁹ See website Forest and wood products research and development corporation regulations No 209 of 1993: - <https://www.legislation.gov.au/Details/F2004C00314>. Accessed on 20 December 2018.

¹²²⁰ Rural Industries Research and Development Corporation (trading as AgriFutures Australia). See website <https://www.directory.gov.au/portfolios/agriculture/rural-industries-research-and-development-corporation-trading-agrifutures-australia>. Accessed 20 December 2018.

¹²²¹ Land and Water Resources Research and Development Corporation (Repeal and Consequential Amendments) Regulations No 349 of 2009. See website <https://www.legislation.gov.au/Details/F2009L04562>. Accessed on 20 December 2018.

degradation of forest land for agriculture activities. Forest management agencies will also cooperate with private landowners who are adjacent to forest lands to develop and implement forest protection measures. Rural communities are also involved in the implementation of fire management plans to reduce forest fires. Management programmes under these plans may include reducing fuel burning and natural gas to reduce forest biodiversity loss.

The sustainable economic use of forests is one of the fundamental principles of the NFPS. Wood and timber production is a major commercial activity in Australia. Ecologically sustainable management of forests for timber and wood production requires a permanent forest estate that can balance the various uses of forest areas and timber production. Furthermore, the Australian Constitution recognizes that State governments have primary responsibility for land-use management and decision-making. These State priorities also need to take into account community priorities. Local governments can also take decisions that affect regional land-use management and their economies.

The *Intergovernmental Agreement on the Environment*¹²²² has also agreed on the application and evaluation of high quality data; the assessment of regional projects and development programmes; consideration of regional implications; consultation of groups and organizations; mechanisms to reduce and resolve conflict; and consideration of international or State implications on the environment. The Intergovernmental Agreement on the Environment aims to provide a mechanism which can facilitate a co-operative national approach to the environment; defined roles of the governments involved in environmental management; reduce the number of disputes between Commonwealth, the territories and the States on any environmental issue; certainty of government and business in decision-making; and effective environment protection.

Furthermore, forest management agencies that manage public forests on behalf of communities must be accountable to communities for their stewardship of the local communities' assets. It is also important to foster communication and understanding of sustainable forest management. This can be done by providing communities with more information through public awareness programmes and public participation. Thus, the communities will make more contribution in land-use management debates and decision-making processes. Strategies include the provision

¹²²² Intergovernmental Agreement on the Environment of 1992, Australian Government, Department of the Environment and Energy. See website <https://www.environment.gov.au/about-us/esd/publications/intergovernmental-agreement>. Accessed on 28 December 2018.

information to communities, support to information facilities, and the development of educational and consultation programmes.¹²²³

The *National Pulp mills Research Program*¹²²⁴ will also be focused on the exchange of technologies and support of those technologies. The government of Australia also funds research programmes through consultation and university fellowship programmes. The Land and Water Resources Research and Development Corporation¹²²⁵ also works with the Ministerial Council to investigate matters that are of concern to land management and vegetation resources. This work has also been linked with the Forest and Wood Products Research and Development Corporation¹²²⁶ Furthermore, the *National Greenhouse Response Strategy*¹²²⁷ has been established to mitigate and adapt climate change. The government also recognizes the protection of forests for carbon sequestration and minimizing carbon emissions from forest activities.

Australia has also enacted the *Wildlife Protection (regulation of exports and imports) Act*¹²²⁸. The Act protects the conservation and regulation of the export and import of plants (relating to forests) and goods, by regulating the possession and related purposes. This has been due to the fact that Australia is a party to the CITES and it must fulfil its obligations by protecting threatened and endangered animals and plants, and promoting national legislations that are aimed at achieving this goal. This Act can be said to relate to the CITES which regulates the trading of certain species that are threatened or endangered with extinction. These species are prohibited from being imported or exported to/from another country. In the case of tree species from forests, if they are threatened, the selling and buying of their products or any aspects will be prohibited, thus protecting the species from extinction.

Moreover, the *Endangered Species Protection Act*¹²²⁹ has also been promulgated to protect species that are classified as endangered, vulnerable and threatened by extinction. Section 3

¹²²³ McDonald, Jan, Regional Forest (Dis) Agreements: The RFA Process and Sustainable Forest Management', Vol. 11: Iss. 2, Article 12, (1999), *Bond Law Review*, 295-342, page 314-6.

¹²²⁴ See also National Pulp Mills Research Program (Australia) (1990). *Fact sheet (National Pulp Mills Research Program (Australia))*. The Program, Dickson, A.C.T.

¹²²⁵ Land and Water Resources Research and Development Corporation (Repeal and Consequential Amendments) Regulations No. 349 of 2009.

¹²²⁶ See website on <https://www.fwpa.com.au/>. Accessed on 20 December 2018.

¹²²⁷ Australia's Greenhouse performance and strategy, Parliament of Australia. See website on https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Environment_and_Communications/Completed_inquiries/1999-02/gobalwarm/report/c04. Accessed 23 December 2018.

¹²²⁸ Wildlife Protection (Regulation of Exports and Imports) No. 149 of 1982.

¹²²⁹ Endangered Species Protection Act No. 194 of 1992.

also states that the Act is aimed at recovering, promoting the recovery, preventing communities, reducing land conflicts, provide public investments and encourage co-operative management in the protection of threatened species or communities. Thus, the Minister must make a list of these ecosystem communities and consider advice from the Scientific Subcommittee.

Section 34 of the Act recognizes that there must be a threat abatement plan and conservation agreements to reduce actions that cause such species and ecosystems to be threatened. The Minister can also make conservation orders that relate to the protection of such species and ecosystems; and contravention of such an order can result in a penalty or fine. Section 92 states that the Director can cancel any logging permit if certain sections of this Act have been contravened or the ecosystem becomes vulnerable. The Minister under Section 69 can make the conservation order permanent to prevent further threatening the specie or ecosystem; promote recovery; ensure further activities do not affect the ecosystem; and reduce the total loss of the ecosystems or species. In making such decisions, economic and social considerations have to be taken into account.

5. Implementation of Laws

The implementation of forest law in South Africa is addressed by the Constitution which is the highest form of law in the land. National legislation has been enacted and is aligned to the Constitution. In the environmental regime, the NEMA performs a critical role as it sets out principles and procedures to be followed. Specific legislation focuses on different environmental matters, thus includes the National Forest Act (NFA) which is specifically for forest protection. The government continues to amend and add laws, regulations and policies which govern matters at national, provincial or municipal levels.

It must be submitted that the legislature has national, provincial and municipal levels which have different competencies based on their jurisdiction. National legislature usually plays a part on national laws, provincial on provincial matters and the municipal legislature at municipal or local level. In the early 1990s, this hierarchy created different problems which meant that matters had to be settled in court. However, these matters on competence have now been resolved and many matters now follow a judicial precedent with a few exceptions solved by cooperative governance institutions and instruments.

The NFA applies to forests in South Africa and specific regulations have been made by provinces on how to administer this Act. It is important to note that provincial actions must always resonate with Section 24 of the Constitution, which seeks to protect social, ecological and economic considerations with regard to forest protection matters. Thus each province or municipal government institution must follow the requirements, duties and obligations as set out in Section 24. Moreover, the government has also established the Department of Forestry which oversees the protection and sustainable use of forests under the office of the Minister of Environment, Forestry and Fisheries.

Nonetheless, there are a few problems that affect robust implementation of environmental laws in South Africa. The key problem in South Africa is the lack of real leadership and experts to help protect forests. This problem has been impacted on by the country's economical and social goals. Much of its goals has been to recognise and relocate the majority black population to their indigenous lands from which communities were forcibly removed during the Apartheid period. In the same vein, another problem has been encountered because of the social issues faced by South Africa in that there is now inadequate support to implement environmental laws due to the mass and increase of population (the demand for cheap housing has since increased since the 1990s). Inevitably, black people think that environmental laws have been put in place to limit their property rights or to move to their preferred traditional lands. The current government has also seen this as an opportunity for vote buying. Thus, the Department of Forestry has become slower, corrupt, and lacking efficiency and effective policing.

Furthermore, certain programmes under environmental regulations now take longer due to the numerous court cases. These issues are seriously affecting political commitments and will. There are other burdens that are affecting implementation of environmental law such as the lack of resources, unwillingness to accept citizen participation and information rights by the African National Congress (ANC) government.

In addition, with the enactment of the Constitution, this meant that most of the national legislation had to be struck down or amended in line with the new regime and Constitution. The government has its credibility hampered due to a lack of transparency, especially on the lack of resources, whilst the Ministry of Finance reports that resources were offered to these departments. There are also serious issues regarding the misuse of resources and corruption in governmental departments and institutions. These issues have hampered effective and efficient implementation of environmental law. The experts working in the government departments as

policy implementers have also lost respect and credibility. There has been an erosion of trust on the duties and reports of these officials.

Due to the lack of experts in the Department of Environmental Affairs, a few of the important positions remain unfilled. There has been a lack of commitment from government to respect public servants. Some of these civil servants are at the forefront of implementation of vital environmental laws, regulations and policies. There has been a lack of records, storages and archiving due to the increase in corruption in these departments. The Department of Fisheries and Forestry has always seemed inadequate to provide certain information, documents and reports. As a recommendation, record keeping at the Department of Environmental Affairs must be improved as it is crucial for implementation and effective policy-making. Much of this information has been removed from public and private viewing. Some of the reports are being viewed internally without being published in media houses or made public.

In Spain's position, the EU has enacted regulations to assist Member States with the implementation of law. The Commission has invested in training, improving administrative policy, and developing implementation plans that can assist national administrations which can identify potential barriers. The EU tries to reduce complexity of the regulations to increase effective and better implementation of regulations. However, the European Parliament should also widen its focus on the infringement data and assessment of compliance based mechanisms of regulation enforcement. The EU Parliament must ensure that the Commission is transparent and evidence-based. The Parliament can make provision for such an assessment to show how this can positively contribute to ensuring implementation of EU law.

Spain is a federal state with seventeen autonomous regions and many provinces. The national legislation must be in line with the Constitution, as already seen in the case of South Africa. A major issue is with its autonomous regions which have the competence to make their own laws and design policies. These autonomous regions can make laws since they have independent powers. The State has power to ask for conformity, however this case is prone to cause various burdens that have hampered the environmental protection regime. Autonomous regions in Spain already have their development goals and such development goals usually clash with national agendas. There is a need for better implementation of laws from top-bottom, with all levels of government in uniform, cooperating and coordination. This is not the scenario in Spain at national level, the autonomous regions usually do not follow what the national government suggest to the exact – there have found loopholes to abuse state laws, regulations

and policies. The Spanish government must find ways to enforce proper implementation of environmental laws

It can be submitted, that these autonomous regions have competence to govern their own resources which caused fragmentation of plans and bureaucratic problems. In some smaller villages there is a lack of experts and funds since some of the villages have few or no residents. Spain had a major economic depression in the 2008s which reduced many departmental and institutional budgets. Since then, Spain's system has become highly bureaucratic – it must be pointed out that this was done in the public institutions to counter corruption. However, this issue has slowed down decision making and the implementation of policies.

Spain and Australia also have forest fire problems which have persisted for many years. In one summer, Spain and Australia can lose a quarter or more of forest lands. The allocation of resources for restoration of land must be immediate to introduce life after these events. However, Australia also has states and territories – the environmental protection is of huge importance due to the dryness and desert condition experienced. Thus, like the other two countries, Australia has introduced criminal, civil and administrative sanctions for environmental infringements.

Legitimacy, sustained monitoring and usage is critical for the effective and efficient implementation of environmental laws. These governments have enacted laws in response to government scandals, multilateral organizations or in times of crisis or emergencies. Civil society plays an important role in lobbying and advocating for the key provisions of environmental laws. In Spain and South Africa, such widespread civil society campaigns by well respected and highly influential civil society groups encourage the government to put effort into passing legislation. Whilst implementation of environmental law is always difficult because of the change of natural events and governments these civil society organisations have emerged from campaigns to monitor, report, investigate and test the system to encouraging governments to attempt better compliance and enforcement measures. Through this process, the broader public has become aware and educated on different laws which helps to build capacity, confidence, use and credibility.

However, in the worst cases in South Africa's remote areas and Australia, there is a lack of participation processes especially in terms of mining and timber concessions. This has led to a lack of the principle of openness, limited freedom of expression and information. Many of the excuses given by government revolve around the lack of resources and staff. However, several

issues have risen which recognise high levels of corruption in these concessions and state capture.

In South Africa, civil society cannot sufficiently ensure full implementation of environmental laws alone. However, they are strong advocates that hold the government accountable for failures to protect the environment. These committed civil society organisations are a counterbalance to ineffective or faltering implementation of environmental protection efforts. Through this continued monitoring, the implementation of government's environmental policies is improving significantly. This engagement of NGOs and other interested organisations seems to pressure government on various platforms to initiate programmes that recognise environmental protection. Without this engagement, administrators could allow, neglect and disregard environmental protection programmes.

Importantly, the process of public participation has become important internationally. Before legislation is enacted, the public and affected communities can comment on legislation that is being debated. The process might be there but many of the people will need to be educated first before they can participate in any platform. This leaves room for intimidation and vote buying in developing countries, with politicians able to sway voters to their side.

In Spain and Australia, the process of building consensus and sufficient time for debating legislation is important. If different issues are faced, matters can be taken to courts. In South Africa, many cannot access legal representation because of the exorbitant charges and fees of law firms and attorneys. In Spain, different Autonomous regions try to satisfy citizen desires with implementing critical lessons earlier through regulations and policies, the use of media platforms is also important.

Nonetheless, proper implementation increases commitment and will, shifting the culture to environmental implementation. Openness provides implementation experience and can serve as a platform to build more extensive environmental protection legislation. Granting access to information rights make the public more receptive to legislation and can improve implementation required for better performance. Some of these policies are registered as soft laws and have had a tremendous impact on environmental protection actions and programmes.

In Australia, raising public awareness and building capacity promotes full implementation and reduces stakeholder confusion, thus it is of critical importance to allow public access to adequate and quality of information. Providing leadership training and adequate support has

helped Australia throughout its forest fires. Many farmers now pay attention to signals and warnings. They are also applying sustainable agriculture methods to reduce soil erosion and unsustainable water uses. The implementation of environmental laws in Australia needs a properly recognised process of observing human rights, transparency, democracy and demands long-term commitments, especially on the cattle ranches.

In developing countries, the governments always insist that they have no funds and personnel to implement environmental laws. If they do implement, they usually submit to a lack of resources and follow up mechanisms. Other governments realising the enormity of the task to implement environmental laws, usually fail to commit or simply lose interest. Mostly, governments in developing countries favour the exploitation of natural resources since it is a cheaper way to collect taxes and employing the masses.

In South Africa, preparedness from an early stage on how the law will affect the public or environment needs to be improved. Furthermore, provision of sufficient and continued resource allocations in terms of salaries, materials, uniforms and office facilities needs to be well managed. Political willingness starts from the top, if the initiatives are entrenched in a new culture of openness then the implementation of environmental law can go beyond surviving the challenges and be implemented longterm. In the implementation of law, public servants play a critical role. The government must ensure that they are well paid and their offices are in immaculate condition. This reduces the voices of corruption and bribery in the forestry sector. Recognising senior members with their bonuses and pensions will increase efficiency, effectiveness and dealing with recognised bottlenecks. Developing countries need to start generating information on internet platforms that are easy to access in this century.

Media plays a huge role in the positive, effective and efficient implementation of laws. This improves citizens' knowledge and makes it easy for the law to be followed or promoted easily. Newspapers, government platforms, radio and television play important roles in forest protection, as well as in reducing and reporting criminal activities. In addition, information needs to be kept in archives that are protected to avoid destruction since such information is required for monitoring and evaluation of natural resources or environmental protection programmes. This ensures that the governments follow a trend that is easily accessible and reliable at all times. This is also important as it can involve the national police and government institutions to deal with environmental crimes and contracts.

In South Africa, there is a need to train information officers who offer training to members of the community. Training and building capacity in forest management is important in all communities. With all communities playing a vital part in forest protection, substantial positive results can be achieved. Improvement of knowledge makes people aware of their surroundings, laws and crimes that can be committed. Thus, information officers are the backbone of environmental protection in any community, there is thus a need to significantly invest in training and teachers.

It is important for any state to have an implementation plan for environmental legislation as the laws are affected by natural disasters and development projects. This is important in strategic planning and the building of consensus. The governments should build structures to develop a better understanding of the obstacles facing communities and forests. These sessions can help government share the experiences and the problems, and enables it to take the necessary decisions to properly implement the laws with less resist from civil society. Government departments need to share information to avoid inconsistencies, delays, sharing experiences to better protect forests, provide guidance, efficiency and identifying the key managerial issues.

Specialised units and departments or oversight bodies can improve full implementation and compliance with environmental law. There is a need for specialised and continued oversight bodies in order to avoid lax. If there are no implementation monitoring and coordinating bodies, public servants are usually burdened by responsibilities. Providing a focal point will improve efforts and oversight of commissions will assist with reducing corruption and monitoring implementation. In South Africa, such special units that oversee implementation of environmental policies are missing. To a greater extent this role is played by NGOs, but not independent commissions in governmental departments or institutions.

There are several sanctions and incentives that have been implemented in these three countries. Importantly, criminal, administrative and tort sanctions are all recognised in any environmental injustice that causes loss of property and significant damage or degradation to the environment. Mainly, criminal sanctions result in prison sentence, tort a lump some of money to be paid, and administrative sanctions may mean that business contracts are cancelled or companies are deregistered. However, in terms of sentencing South Africa appears lax and environmental crimes have been met with unwillingness of prosecution. However, it is a different story when companies are involved as companies and corporations are prone to receiving harsher sentences

than individuals. There is therefore a need to improve environmental enforcement in South Africa. In Spain, various crimes can be charged as stated in environmental legislation as in Australia. In these countries, environmental law is long recognised and crimes against the environment result in sanctions. They have applied a no nonsense criteria system to reduce, incapacitate and deter criminals. In Spain and Australia, members of the public can report environmental crimes whilst in South Africa environmental criminals can be ignored by the public, this can be also revealing to the level of environmental education and awareness. Thus, there is a need to improve public participation, capacity and awareness in environmental crimes.

In the matter of forest management, there is a need for government institutions or departments to cooperate and coordinate to protect forests. It is also important to recognise forest protection in other sectors and the departments that implement such projects and programmes should always recognise forest protection. Government departments should be able to sit together and talk about different issues that affect environmental protection. Sectors such as fisheries, manufacturing and industry, and agriculture should always apply principles that recognise sustainable use. Governments should always utilise opportunities to build synergies, approve necessary regulations and internal policies. These sessions can welcome NGOs and members of the public who want to be familiar with the laws, values, make requests and engage positively with these departments or institutions. However, there is still some confusion on some forest principles, concepts and programmes because of the lack of an instrument. Importantly, the three countries have relied mostly on EIA to reduce forest degradation.

6. Analysis

It is important to look at these countries, how they have developed their environmental laws; and the conversations held on the topic of forest protection because of the role they have played in their regions and continents. These countries have played a part in the negotiations of various MEA and other negotiations that have set different commitments not only for forests but also for other environmental issues on a regional and global scale. Their environmental frameworks are seen as amongst the best in the world. Spain has been a leader in the Mediterranean region and Europe (as one of the largest countries on the continent), and has also helped the many Spanish communities in South America (which is an important region because of the Amazons). South Africa has one of the biggest economy in Africa and has tried to represent African natural resources, traditions, needs and contributions in the international arena. Further,

Australia has represented much of Australasia and the smaller islands around its main land (this also includes islands that are part of Australia and other Pan/Australasian Island nations). They have provided funding for research, built capacity and improved co-operation and co-ordination on a national and international scale to help in forest protection.

Much of the problems in South Africa have been caused by the soft application of property laws since the democratic election in 1996. Most forests in the country are owned by private land owners and it has become difficult to reduce forest degradation and deforestation since owners use their properties autonomously. This issue has exacerbated the lack of strong enforcement measures to reduce forest degradation and deforestation. In Australia, laws are primarily based on community involvement, and most of the environmental protection and sustainable forest management recognise community groups and organisations. Spain has also worked with its autonomous regions to protect forests, and has extended its protected areas in its boundaries which have played a substantial role in reducing deforestation and forest degradation.

The important part is that these countries have advocated for better implementation of the impact assessment systems; reduction of corruption; and methods for effective enforcement measures in protecting forests. It has been this leadership that has given these countries the highest accolades in environmental protection, although there remains extensive challenges in forest protection. In particular, every summer Spain and Australia are affected by negligent or intentional forest fires, which consume much of their forest land and destroy many species and their habitats. Although few arrests have been made; these acts of vandalism (some scholars state has to do with other reasons (of an economic nature)) have taken place for a number of years, and many of the community members point their fingers at the construction and property companies who seek new ventures on forest lands.

Importantly, Spain has promoted many national laws that focus on the conservation of its biodiversity as have the other two countries. The problematic issue has been that the Spanish Constitution and a number of its national legislation are older than many of the MEAs. There is thus a need to adopt the new concepts, initiatives and policies that have been promulgated in the international arena. Many of Spain's legislation and regulations have had to be adapted to the CITES, CBD, UNFCCC, and the ITTA. Key governance powers have been delegated to the different provinces and municipals with national government playing an oversight role. This has been important in recognising community rights and improving public participation

in Spain. Many of the laws have been adapted especially for forest fires with the latest focusing on compensation for loss of property and insurance. A police force has been established to protect Spain's protected areas. This has simultaneously improved forest stewardship whilst also decreasing forest degradation and deforestation around the provinces. Thus, protected areas have become significant in Spain, South Africa and Australia and they have helped in reducing forest degradation and deforestation.

However, the Spanish government needs to better inform the general public about their access to justice rights and the protection of whistleblowers. This could help reduce forest deforestation specifically in trying to reduce forest fires in the Spanish rural areas. Further, the Spanish government needs to provide information on the monitoring and evaluation of forest areas in rural areas and villages. The provision of such information in local newspapers or online media where people can freely view this data and assess their options on forest protection would be helpful.¹²³⁰ Due to the amendments in the forest fire legislation, there is a need to develop focus and review of the incidents which caused these fires. It would also be helpful if this information is made available to the general public to reduce such incidents.

In addition, Spain should provide more financial resources for nature conservation using funds from the European Regional Development Fund and the European Agricultural and Rural Development Fund. It should also use other methods to further develop financial incentives to promote nature conservation programmes and activities that have been provided in the basic legislation. Moreover, reinforcing the regional forest programmes where these countries occupy would ease the achievements of the SFM in the forests, this will also help to root down deeply the principle of public participation.¹²³¹ Such reinforcements can help minimise and prevent many of the issues that are affecting forest protection such as forest deforestation and degradation.¹²³² This will also improve the enforcement of environmental laws in Spain.

The Spanish government has sped up the administrative responses to counter biodiversity loss. The protected areas coverage has since improved and expanded in recent years. They have covered most of Spain's forests, approximately the largest area of any country in the EU.¹²³³

¹²³⁰ See Merlo M and Rojas E, 'Public goods and externalities linked to Mediterranean forests: Economic nature and policy', (2000) 17, *Land Use Policy*, 197–208.

¹²³¹ Montiel C and Galiana L, 'Forest policy and land planning policy in Spain: A regional approach', (2005) 7, *Forest Policy and Economics*, 131–142, page 134.

¹²³² Ibid.

¹²³³ European Commission, (2016). Natura 2000 Barometer. See website on http://ec.europa.eu/environment/nature/natura2000/barometer/index_en.htm. Accessed 10 December 2018.

This will exceed the global protected areas coverage targets at the number set of 17% by 2020 by the CBD in 2010.¹²³⁴ However, there is still much needed monitoring and evaluation of these protected areas to be undertaken in Spain.¹²³⁵

South Africa has one of the highly rated Constitution internationally and this recognises the protection of the environment across the country. This progressive Constitution has led to the promulgation of various environmental national legislations. South Africa has the National Forest Act which is a specific forest protection legislation which focuses on forest management and protection. The strongest forest stewardship laws are the National Forest Act and the Protected Areas Act since they make it a crime to degrade the environment which is protected.

Given its history, the majority of problems in South Africa derives from land ownership and management. Many of the forest areas are either owned by indigenous communities or private owners which has made it difficult for government to oversee, monitor and evaluate forest protection. However, the government has done well in introducing the necessary legislation and what is left in South Africa is to improve implementation and enforcement effectively for forest protection. There has not been many environmental criminal convictions in relation to environmental damage and degradation, which also points out to the lack of effective enforcement and forest valuation in South Africa. Nevertheless, as a developing country, South Africa faces other issues such as the lack of funding, expertise and staff to effectively protect its forests. It has also a greater population of people who live in poor urban sprawls areas, this has increased the issue of environmental degradation and deforestation mostly due to firewood and housing.

The National Forest Act in South Africa must continue to recognise recent international norms and standards, provide for a dynamic approach on forest protection, recognise indigenous rights, and uphold property rights. Private land should also be protected for the purposes of sustainable development in South Africa. Further, there is a need to increase monitoring and evaluation in forests (for example forest inventories and statistics) in South Africa. Such initiatives would enable the Department of Environmental Affairs to note issues affecting forest protection, and how deforestation and degradation can be reduced from different agents and sectors.

¹²³⁴ CBD, Convention on Biological Diversity, (2010). Convention. Strategic Plan 2011–2020. Aichi Biodiversity Targets. See website <https://www.cbd.int/sp/targets/>. Accessed 10 December 2018.

¹²³⁵ See note 1082, page 22-3.

South Africa, like Spain, needs to increase the accreditation of SFM and forest certification of products. This all should be done according to national and international acceptable indicators and criterias of sustainability. There is also a need for proper delegation of responsibilities to the provincial and municipal governments as well as the broader community for the protection of forests and enforcement of environmental standards. There is also a need to increase incentives and the financing of smallscale reforestation and afforestation programmes. Further, the implementation of effective policies for gender equality, training and empowerment that represents women is required.

The forest sector in South Africa provides many benefits and opportunities for economic growth. However, these benefits will have to be persued by projects that can also benefit and co-operate with rural development projects or programmes. These benefits would also encourage access to these smaller communities that are dependent on forests for their livelihoods. This must also guide the use and development of land and water which is beneficial to indigenous communities as well as local habitat.

However, South Africa has faced a major problem of executing and implementing its environmental laws effectively. This has been due to the severe lack of staff, experts, technology and financial shortages (as explained above). There has also been an increase in corruption in government in South Africa, which has reduced the effectiveness and capacity of these institutions.¹²³⁶ Further, the lack of capacity might affect the government if it cannot comply with its own rules and thus render environmental protection counter-productive. For example, NEMA must always provide for efficient and co-ordinated environmental governance and reduce backlogs in the development authorisation, thus linking social development, environmental protection and community development.

The Constitution of South Africa together with NEMA and the National Forest Act have many environmental principles that can be used to protect forests in South Africa. The application and effective interpretation of the Constitutional provisions requires effective co-operative governance which is expanded to civil rights and administrative responsiveness for the successful implementation of forest protection. Environmental legislation in South Africa depends on good civil administration in the State, provincial and local governments. Environmental legislation is thus reliant on the important willingness of both public and private

¹²³⁶ Hamann R, Booth L and O'Riordan T, 'South African environmental policy on the move', (2000) 11 (22), *South African Geographical Journal*, page 18.

actors which share the burden and ensure that there is compliance with the many procedures that promote good governance.

In Australia, environmental legislation has been promoted for the different states and territories, to which power has been delegated. Community involvement and impact assessments are important as Australia is susceptible to drought, and such processes are important in reducing deforestation and forest degradation. The problematic issues in Australia have arisen due to wildfires and droughts and thus much effort has been put into community involvement and the reduction of intentional forest fires. Capacity building and public awareness programmes have been set up in schools and communities to reduce forest degradation and deforestation.

The lack of an express environmental power given by the Constitution has had substantive negative impact on the environmental framework in Australia. This has created political difficulties or expediency in the Commonwealth Governments which continue to claim that there is no certainty given by the Constitution for the protection of the environment. This has resulted in needless litigation on issues that should have been tackled immediately and active scrutiny of the Commonwealth environmental laws. However, this has been cleared by the High Courts to confirm the Commonwealth's extensive powers to meet environmental issues and challenges. Nevertheless, this uncertainty has caused fatigue in the environmental framework with a few people refusing to respect the court's decisions.

Consequently, Spain and Australia have played a huge part in recognising forest certification in their regions. South Africa has sponsored and supported the CITES initiatives in the Southern African region and Africa more broadly. Australia and New Zealand have also partnered with smaller island nations such as Papua New Guinea to reduce illegal logging and the illegal trading of timber.

These countries have created some positive trends, however significant progress is still required to halt global deforestation and forest degradation. There are several recommendations that can be given to countries to accelerate the achievement of SDG15 and its main targets.

Governments should continue to implement natural accounting approaches effectively. These approaches should seek to recognise and evaluate the economic value of forests within their countries, which will improve forest valuations and perceptions around standing forests. They should also integrate all these findings into official government policy and environmental

planning processes for all the different sectors, with specific focus on agriculture and infrastructure. These sectors have had immense negative effects on forest protection and forest lands.

Governments should enact legislation, enforce policies and promulgate regulations that directly limit the conversion and harvesting of forests, and also provide the economic incentives to reward forest owners who are protecting their forests (these can be community land owners, states, organisations, cities and provinces). These steps should preserve the existing forests and restore the degraded forest lands in that country.

Better enforcement by the local police is all required, and this requires training of staff. Programmes can be set up for public awareness, improved participation and building capacity. Further, co-operation and co-ordination with counterparts at regional and international levels will improve the sharing of expertise and technology in the fight for forest protection. This must also be supported by the proper financing of the forestry sector and monthly audits to reduce corruption and the abuse of power.

Additional different policies and regulations have been promoted by the United Nations Forest Instrument and UN Strategic Plan for Forests (2017-2030). These provide an overall framework and exclusive plan for SFM and forest ecosystems. Governments are also encouraged to consult and build upon public awareness and capacity building before taking these programmes and initiatives in their National Development Plans.

Spain and Australia have acted as donor countries for environmental protection and technology exchanges since they occupy the top tier of developed countries with best research facilities and technologies. They should scale up finance and technical support to the developing countries in the global South. These countries should have demonstrated commitments in forest protection. The expertise and finance should be directed towards MEAs and channels such as the Forest Investment Program, the Forest Carbon Partnership Facility and the Green Climate Fund. Other multilateral partnerships such as REDD+ can help in the fight for forest protection. There is also a need for greater investment in the direct funding mechanisms which effectively and efficiently channel funds to high impact interventions for SFM, which also includes public-private funds which are focused on sustainable landscapes. Further, more support is required in monitoring and evaluation, as well as the data-collection initiatives to track and assess the trends and developments of forest protection programmes.

Governments should promote voluntary carbon markets, corporate commitments to the goal of zero-deforestation, private investment in forest protection and finance for REDD+. The donors can also improve in support for the multi-stakeholder platforms which can play a huge role in bringing the many diverse parties around the table to collaborate and innovate solutions for the effective valuation of forests. Furthermore, continued engagement in the regional and international arena by these three countries will help in convening diverse stakeholders which can include a forum for the exchanging of ideas, promoting forest protection, and catalyzing new programmes, projects or initiatives.

In addition, companies in these countries should also form a growing movement for corporate and social responsibility by making frank, explicit, time bound and measurable commitments to reduce and prevent forest degradation and deforestation, this will also improve forest certification positively. It is estimated that nearly three-quarters of the tropical deforestation is mainly caused by agriculture, thus corporate efforts to minimize and prevent deforestation in their agriculture supply chains are needed. Business leaders should help protect smaller countries and developing countries to prevent deforestation or in States where they source most of their raw materials for their commodities. Further, agricultural commodity companies should try to improve and prioritize forest protection measures in countries they source their raw materials, and also help them find alternatives for environmental protection. These commitments can be properly aligned with the national trading policies and goals, thus the private and public sector will be able to reinforce efforts on forest protection.

7. Conclusion

The three countries as stated above have enacted national legislations and promoted MEAs at national, regional and international levels. Their efforts have been important in their regions where they have promoted forest protection. For example Spain has helped many South American countries – providing technical support, monitoring and evaluation techniques, whilst also hosting researchers and experts at their local universities, research hubs and institutions. However, the lack of co-operation and co-ordination in the forest principles and programmes is at the heart of forest protection issues. This has been caused by uncertainty, inadequateness or deficiencies, lack of uniformity and fragmentation in the forest protection regime. Much of the problem has been caused by the lack of a specific binding instrument and the burdens (as explained above in Chapter 6) that have hampered negotiations. As these countries have been promulgating national environmental legislation, an instrument could have

been helpful to guide and improve implementation or enforcement of forest protection laws in the most effective way. A new instrument could also help to define and interpret some of the concepts, mechanisms and principles that are fragmented and confusing much of the forest protection scholars.

There has also been a lack of clarity as to the definition of 'forest crimes' and how this could be applied at national or international level. Furthermore, given the lack of funding for forest protection programmes, an instrument could have stated how financial incentives could be drawn from different strategies. There has also been a lack of responsibility since many of the countries do not know exactly what their duties are on forest protection. There is also a lack of transfer of technology, skill and expertise in developing countries. MEAs usually base their capacity building and public awareness programmes on transfer of technology, skill and expertise, however this is missing in the forest regime.

In addition, monitoring and evaluation of forest protection programmes has been poor internationally due to the lack of stated indicators and procedures on how this can be achieved. Many indicators used by these countries are ill-defined, are not uniform and insufficient to provide accurate results on the state of forests. Moreover, the three countries demonstrate understanding in using the CBD, UNCCD, UNFCCC and ITTA. Nevertheless, it must be said that there is political willingness given the amount of legislation, projects and programmes set up to protect the environment specifically forest protection in these countries. However due to the lack of instrument for forest protection, the effective execution and implementation of forest protection programmes, concepts and initiatives has been poor. An instrument would also increase forest valuation in these countries. Nevertheless, these countries have played their part. What is now required is an instrument that allows for certainty, co-ordination and uniformity.

Chapter 8: Environmental Principles in Forest Protection

1. Environmental Principles

States have applied different principles of forest stewardship to protect their forests and reduce deforestation. The application of the precautionary, polluter pays, sustainability and preventative principles for environmental protection has been welcomed by States, a number of which have also incorporated these principles into relevant national legislation.¹²³⁷ In addition, in many regions with regional agreements that are mutually legally binding, the use of control and compliance tools as mechanisms for criminal, administrative and civil liability has been progressing slowly since there is no international agreement on the forest instrument that can develop these tools. These environmental principles have been applied by States to try to supplement their national forest laws for effective compliance and enforcement.

Importantly, environmental principles are used in international politics amongst other actors that can include states, NGOs and multi-national corporations. That is, they bring clarity and certainty in international environmental law. This affects social influences such as persuasion and influence, thus socialising actors to adopt norms. Environmental principles in international environmental law govern political and legal behaviour, and responsibility of the governments, citizens or corporations. The environmental principles interplay with processes that emphasise on social influence.¹²³⁸

Environmental principles continue to shape and determine corporate practises around the world by making things appear rational.¹²³⁹ Environmental principles also influence public awareness and participation which strengthens democracy, peace and governance. As a result states are included to develop and promulgate rules and institutions at international and national level. Environmental principles also foster social learning, common knowledge and culture. The environmental principles play a role in allowing actors to work together in a collective and common global effort to solve problems on the international arena. A scholar explains that environmental principles functions include: ‘privileging particular kinds of ideas and

¹²³⁷ See, Sands P & Peel J, *Principles of international environmental law*, Cambridge, Cambridge University Press (2012). See Sands P, *Principles of international environmental law*, 2nd Edition, Cambridge, Cambridge University Press (2003). Kidd M, *Environmental law*, Cape Town, Juta (2008). See also Kiss A & Shelton D, *International environmental law*, New York, Transnational Publishers (2004).

¹²³⁸ Akhtarkhavari A, *Global governance of the environment: Environmental principles and change in international law and politics*, Edward Elgar, United States of America, (2010), page 190.

¹²³⁹ Ibid, page 191.

innovations that favour protecting the environment, framing opportunities for the creative engagement of actors with environmental concerns, socially structuring how actors will identify their environmental credentials in relation to others, giving particular structure to the meaning that general or environmental specific rules and norms have for groups and a mechanism for institutions diffusely to communicate with actors who are engaging bilaterally with each other outside their reach'.¹²⁴⁰

In addition, environmental principles offer transparency and accountability in international environmental law on the international arena.¹²⁴¹ They continue to determine certain limits to the exploitation of natural resources or limitations on development for the protection of ecosystems.¹²⁴² They also provide international environmental law with an exemplary ethical outlook, a recognisable conceptual framework and sophisticated vocabulary. They seek to explain how and why should the environment be valued, how objectives ecosystem and natural resource protection can be achieved and how to balance environmental values against other objectives a certain community or international community is pursuing.¹²⁴³

Environmental principles have remained central to translating global environmental goals into international binding instruments and national policies. In the long term common sense about business means that the corporations will be aware of the impacts of their actions on the environment. Environmental principles have the potential to significantly stimulate certain practices that can generate sustainable structural pressures and changes on transnational corporations and governments, thus their regulation is important

1.1 Precautionary Principle

The precautionary principle ('*better safe than sorry*') is used for appropriate measures that can address certain projects that are complex and have uncertain risks on the environment.¹²⁴⁴ It is also a reactive principle to environmental degradation.¹²⁴⁵ The principle dates back to the early

¹²⁴⁰ Ibid.

¹²⁴¹ Farmer A, *Handbook of environmental protection and enforcement: Principle and Practice*, Earthscan, London, (2007), page 13.

¹²⁴² Stephens T, *International Courts and environmental protection; Cambridge Studies in International and Comparative Law*, Cambridge University Press, United Kingdom, (2009), page 6.

¹²⁴³ Ibid.

¹²⁴⁴ See Braunisch V *et al*, 'Underpinning the precautionary principle with evidence: A spatial concept for guiding wind power development in endangered species' habitats', *Journal for Nature Conservation*, 24 (2015), 31–40.

¹²⁴⁵ See Tickner A J and Geiser K, 'The precautionary principle stimulus for solutions- and alternatives-based environmental policy', (2004) (24), *Environmental Impact Assessment Review*, 801–824.

1970s when it was promulgated into German and Swedish national environmental policies.¹²⁴⁶ The precautionary principle consists of basic elements, namely that there should be: - a threat of harm, a lack of scientific certainty and evidence, the effects of the harm and cause are not proven, and there is a duty to act and the necessity.¹²⁴⁷ The uncertainty of the harm that is addressed by the principle that captures causal factors, effects and the nature intended by the harm, long-term effects and the secondary consequences of the taken decision.¹²⁴⁸ The role of the principle is to find alternatives or innovative mechanisms to reduce environmental damage and degradation.¹²⁴⁹ It is a principle that is used when there is scientific uncertainty on a project, whether it will cause significant environmental damage or not.¹²⁵⁰ It is a preventive action when faced with uncertain environmental degradation adversaries and it then reverses the burden of proof (anyone that creates the environmental risk should understand the risk and is obligated to demonstrate sustainable actions to reduce environmental damage and degradation).¹²⁵¹

The principle was formally recognised in 1992 at the United Nations Conference on Environment and Development.¹²⁵² It is recognised by the Rio Declaration, Agenda 21, the UNFCCC, the Kyoto Protocol and the constitution of the European Union. It is recognised by The Rio Declaration Principle 15 which states: - *“in order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation”*.¹²⁵³ The wording in Principle 15 is broad enough to cover any kind of

¹²⁴⁶ Ibid, page 804.

¹²⁴⁷ Raffensperger C and Tickner J, *Protecting Public Health and the Environment: Implementing the Precautionary Principle*. Washington, DC, USA: Island, (1999), pages 2-4. "When an activity threatens environmental harm and damage and also threatens human health precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically." (Quote taken from Raffensperger and Tickner, 1999, page 353–354).

¹²⁴⁸ See deFur L P and Kaszuba M, 'Implementing the precautionary principle', (2002) 288, *The Science of the Total Environment*, 155–165.

¹²⁴⁹ Atapattu A S, *Emerging principles of international environmental law*, Transnational Publishers, Inc, NY, United States of America, (2006), page 204.

¹²⁵⁰ Godduhn A and Duffy K L, 'Multi-generation health risks of persistent organic pollution in the far north: Use of the precautionary approach in the Stockholm Convention', (2003) 6, *Environmental Science & Policy*, 341–353, page 349.

¹²⁵¹ Sands P, *Principles of international environmental law, frameworks, standards and implementation*, Volume 1, Manchester University Press, United Kingdom, (1995), and page 209.

¹²⁵² Rio Declaration on Environment and Development decided at the 1992 UN Conference on Environment and Development in Rio. See website on http://www.unesco.org/education/pdf/RIO_E.PDF. Accessed on 12 November 2018. The Declaration states: *“Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation”*.

¹²⁵³ Ibid.

environmental damage and of general application. Principle 17 goes further in stating that prevention will mean the prohibition of activities that will cause environmental degradation and harm. Thus, it is a principle which is recognised internationally, regionally and nationally by many countries. It encourages policy-makers when they need extra precautions, rather not what to do when faced with these situations.¹²⁵⁴

It requires States to reduce environmental degradation even without sufficient evidence to prove the causal links. The principle invites criticism since it blocks innovation, and the ‘action’ taken is not defined. The shifting of the burden of proof also creates controversy, because scientifically proving safety is a difficult task. Furthermore, the principle only accepts proof that environmental degradation will not take place.¹²⁵⁵

Furthermore, this principle is central to the Environmental Impact Assessment (EIA), unfortunately it is underappreciated and underdeveloped in the EIA process. It could have helped if the EIA process was premised on a more developed principle such as the precautionary principle. The precautionary approach requires a solution-oriented policy framework which will identify and implement solutions. This requires a holistic, cooperative and integrated policy design which can prevent risks at source with far reaching environmental goals that stimulate innovation.

This precautionary approach in international law has been explained and entwined with the duty or obligation on States to prevent significant environmental degradation of other States’ territories – i.e. prevent environmental degradation beyond their national jurisdiction. This obligation extends to degradation that is foreseeable. However, the case of pollution is never certainly foreseeable, thus its scope now hinges on the degree of due diligence on a probability whether the event might occur – i.e. the greater the possibility, the greater the risk. The International Law Commission¹²⁵⁶ provides in its reports and resolutions that: “*States of origin shall take appropriate measures to prevent or, where necessary, minimize the risk of*

¹²⁵⁴ Ellis V D, ‘The precautionary principle and environmental monitoring’, (2003) 46, *Marine Pollution Bulletin*, page 933–934.

¹²⁵⁵ Persson E, ‘What are the core ideas behind the Precautionary Principle?’, (2016) 134–141, *Science of the Total Environment*, page 557–558.

¹²⁵⁶ Yearbook of the International Law Commission 1991, Vol.II, Part 1, page 77. See website on <http://legal.un.org/ilc/guide/9.shtml>. Accessed 11 November 2018. The International Law Commission (ILC) was established by the United Nations General Assembly in 1947. Its main objective is to advance international law and its codification.

transboundary harm or, where necessary, to contain or minimize the harmful transboundary effects of such activities”.

The main function of the precautionary principle is to promote and affirm the underlying ideas from the development of the scattered and fragmented environmental instruments. It also provide the basis for further broadening of the application and obligations of these instruments. The importance of the principle is that it provides for stringent measures to be taken, whilst the EIA allows the use of the best possible science, technology and innovation. In addition, the precautionary principle is a policy-making strategy. It subscribes to the notion that scientists and policy-makers should take caution as an integral part of scientific research conduct and the results presented by scientists.¹²⁵⁷

Furthermore, it addresses how policy-makers make use of the results of scientific research. This is to say that policy-makers should be able to deal with facts of life, that anything is possible and scientific research evidence can be inconclusive. It aims to strike a balance between science, economics and technology. This advocates for better account of environmental degradation than the traditional economic analysis and use of scientific knowledge or proofs. The principle is crucial in identifying, recognising and anticipating significant environmental harm. This principle is also tied to sustainable development in that it allows a balance of environmental issues to be firstly considered since economic issues are always at the forefront.

Risk has been defined as the likelihood of an event happening from a given source that will cause human health or/and environmental damage. The amount of uncertainty must also cause some alarm and the need to take action since the uncertainty event if it becomes certain will result in an event that will cause environmental damage and harm to human health. Thus, the uncertainty of the event should not delay action to promote or protect, but the uncertainty should help decision-makers determine the time to invest in resources to reduce and protect against uncertain events, taking into account these uncertainties when making their decisions. This uncertainty can be from statistical variability and heterogeneity or from a model and parameter uncertainty, these are called aleatory and epistemic uncertainty. The precautionary principle thus is informed by full scientific valuations, determination of the degree of scientific uncertainty, risk evaluation and an evaluation of the potential consequences of inaction.

¹²⁵⁷ See note 1248.

The principle emphasizes that:

- The environment is vulnerable.
- Science can be limited in predicting accurate threats to the environment.
- The use of practical alternatives which minimise input into the environment.
- There is a need for holistic economic considerations.

This means that:

- Best environmental practises should be used.
- The most comprehensive methods of environmental and economic assessment should be used to decide measures that can enhance the quality of the environment.
- There is a need for the stimulation of improved scientific and economic long-term research.
- The legal procedures that facilitate the precautionary principle should be applied and developed.

Moreover, for the implementation of this principle certain procedures have to be put in place to institutionalise caution. There are certain issues that should be put into consideration, such as assessment procedures, inspection teams, development of soft laws, participation of NGOs, access to information and the role of conciliation commissions.¹²⁵⁸

The criticism that has been levelled against this principle is that it is vague and ill-defined, thus vacuous to help or guide policy-makers for decision-making.¹²⁵⁹ This is because in the early instruments, the principle emerged and was not defined further. A scholar has argued that the principle is problematic in serving as a regulatory standard, because it does not state or specify how much (pre)caution should be taken.¹²⁶⁰ There are words that have been used interchanging with the principle that have caused this problem; these are “precautionary measures” and “precautionary action”.¹²⁶¹ This has added more to the confusion of the principle on the

¹²⁵⁸ Dorman P, ‘Evolving knowledge and the precautionary principle’, (2005) 53 (2), *Ecological Economics*, 169-176, page 173.

¹²⁵⁹ Ahteensuu M, ‘Defending the precautionary principle against three criticisms’, (2007) 11 (61/56), 4, *TRAMES*, 366–381, page 368.

¹²⁶⁰ Bodansky D, ‘Scientific uncertainty and the precautionary principle’, (1991) 33, 7, (4–5), *Environment*, 43–44, page 43. See also Sunstein C, *Laws of fear: Beyond the precautionary principle*, Cambridge: Cambridge University Press, (2005), page 54–55.

¹²⁶¹ Conco G, ‘Safety, risk and the precautionary principle: Rethinking precautionary approaches to the regulation of transgenic plants’, (2003) 12, *Transgenic Research*, 639–647, page 642–643.

international arena since they were not agreed upon.¹²⁶² A scholar¹²⁶³ explains that there are now definitional variations, and a scholar¹²⁶⁴ points out that there is now a shift in surface syntactic structure¹²⁶⁵. These “pseudo principles” also differ in terms of their content. The principle has never been properly defined on the international arena, thus leaving space for State discretion.¹²⁶⁶ In the same remarks, the principle does not define who bears the cost of the precaution, the meaning of a threat of harm and the level of precaution. Nevertheless, others scholars¹²⁶⁷ argue that to keep the principle wide is important since it allows policy-makers to find their solutions within the principle. The principles of international environmental law must be consistent and explained with values being shared in the broader society. Such a moral and ethical principle provide impetus for States to make national environmental instruments.¹²⁶⁸

The deforestation of forests is serious and also irreversible, and thus the need to apply the precautionary principle. Much of the effects of climate change are dangerous such as the rising sea levels. Eventually, the effects of increased carbon emissions due to loss of functions performed by forests such as carbon sequestration and carbon storage which are significantly harmful to human health and the environment will be damaged and degraded. The effects of deforestation will mean a change of livelihood for both animals and humans across Earth. The evidence for these effects of deforestation is compelling as it is a reality and this has been stated previously in Chapters 3 and 4. Thus, the remedial action that States should be seeking when confronted with this reality is forest protection and reducing deforestation, thus further enhancing the precautionary principle.

¹²⁶² See note 1259, page 370.

¹²⁶³ VanderZwaag D, ‘The precautionary principle and marine environmental protection: Slippery shores, rough seas, and rising normative tides’, (2002) 33, *Ocean Development & Inter-national Law*, 165–188, page 167–168.

¹²⁶⁴ Adams M D, ‘The precautionary principle and the rhetoric behind it’, (2002) 5, *Journal of Risk Research*, 301–316, page 302.

¹²⁶⁵ Di Salvo P J C and Raymond L, ‘Defining the precautionary principle: An empirical analysis of elite discourse’, (2010) 19 (1), *Environmental Politics*, 86-106, pages 86-9. The syntactical approach requires transposing and sifting through all written formulations of the precautionary principle. These can be found in international instruments and secondary sources in order to know and extract a common core of its skeletal form or structure. This could start from the very meaning of the principle.

¹²⁶⁶ Hughes J, ‘How Not to Criticize the Precautionary Principle’, (2006) 31 (5), *Journal of Medicine and Philosophy*, 447-464, page 448-9.

¹²⁶⁷ Jordan A and O’Riordan T, ‘The precautionary principle in contemporary environmental policy and politics’, in Raffensberger and Tickner J (eds), *Protecting public health and the environment: Implementing the precautionary principle*, Washington DC: Island Press, (1999), 15–35, page 18.

¹²⁶⁸ See Weimer M, ‘Applying Precaution in EU Authorisation of Genetically Modified Products—Challenges and Suggestions for Reform’, (2010) 16 (5), *European Law Journal*, 624–657, pages 624-6.

In addition, the Member States of the EU are required to put in place statutes to reduce environmental harm and protect their public by using and implementing the precautionary principle.¹²⁶⁹ The EU's Commission states that the precautionary principle can be invoked when a process has dangerous effects (European Union (EU) legislation concerning food and human, animal and plant health¹²⁷⁰).¹²⁷¹ The Commission states that there must be risk and the decision should be centred on risk management. The Commission states that there should be three preliminary conditions which are the identification of potential adverse effects; evaluation of the data available; and the extent of scientific uncertainty.

1.2 Prevention Principle

The aim of this principle (“prevention is better than cure”) is simple since it advocates for environmental policy to prevent significant damage and degradation to the environment. These policies must also prevent long and irreversible degradation to the environment by setting out clear obligations and protection measures. The Stockholm Convention¹²⁷² and the Minamata Convention¹²⁷³ have also recognised the need to use preventative measures to reduce or eliminate pollutants into the environment. The Minamata Convention has legally binding obligations to prevent exposure from mercury. The COPs are obligated to develop strategies that will reduce or control emissions, since these articles can translate to preventative measures if implemented with the objective of the treaty.¹²⁷⁴

The principle has also been recognised by Article 2 of the UNFCCC¹²⁷⁵. Further the case of *Hungary v Slovakia*¹²⁷⁶, the court held that States had a responsibility to prevent environmental harm in their territories and also that could lead to transboundary environmental degradation

¹²⁶⁹ Sheng H, Ricci F P and Fang Q, ‘Legally binding precautionary and prevention principles: Aspects of epistemic uncertain causation’, (2015) 54, *Environmental Science & Policy*, 185–198, pages 186-8.

¹²⁷⁰ European Food Safety Authority (EFSA) — ensuring safe food and animal feed in the EU. See website on <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=LEGISSUM:f80501&from=EN>. Accessed on 06 February 2020.

¹²⁷¹ Article 191 of the Treaty on the Functioning of the European Union. See <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:12016E191&from=EN>. Accessed on 06 February 2020.

¹²⁷² Stockholm Convention, signed in 2001 and effective from May 2004. See website on <https://www.unido.org/our-focus/safeguarding-environment/implementation-multilateral-environmental-agreements/stockholm-convention>. Accessed on 12 November 2018.

¹²⁷³ Minamata Convention on Mercury (2013). See website on <http://mercuryconvention.org/Home/tabid/3360/language/en-US/Default.aspx>. Accessed 13 November 2018.

¹²⁷⁴ Ditz D and Tuncak B, ‘Bridging the Divide between Toxic Risks and Global Chemicals Governance’, (2014) 23 (2), *RECIEL*, 181-194, page 187.

¹²⁷⁵ See note on 45. See website Convention on <https://unfccc.int/resource/docs/convkp/conveng.pdf>. Accessed 11 November 2018.

¹²⁷⁶ *Hungary v Slovakia*, (1997) ICJ Rep 7, (*Danube Dam Case*).

and damage. In addition, the principle aims to prevent environmental damage, to reduce or control actions that might cause risk for environmental harm. The State is given a responsibility to reduce environmental harm in its territory. These steps should be taken at an early stage before the environmental harm has occurred.

However, the principle is not considered sufficient because of the issues that are being caused by climate change challenges. These are because many see the challenges of climate change as having already started.¹²⁷⁷ The principle is also seen as inhibiting economic development, thus it needs strong, aggressive and radical political will to implement and governments therefore to be determined to reduce and prevent environmental degradation, unfortunately this will is lacking and in many countries other priorities come first than the environment.

1.3 Polluter-Pays Principle

The polluter-pays principle was formulated in the 1970s, during a time when strict international environmental regulations were being implemented. This was being done by members of the Organization for Economic Co-operation and Development¹²⁷⁸ (OECD), and was intended to guide the collection and allocation of pollution control costs between national governments and the private sector.¹²⁷⁹ It states that the polluter should bear the financial costs of preventing, controlling and reducing environmental degradation. These measures are decided by the public authority on how to prevent and control environmental degradation.¹²⁸⁰ These may include the development and innovation of new control technologies, infrastructure for control and infrastructure for existing industries in areas that can be affected. Thus, the conventional way of the polluter-pays principle in climate change is based on environmental tax, determined proportionally by the amount of emissions.¹²⁸¹

It has been encouraged by Principle 16 of the Rio Declaration on Environment and Development, Chapter 18 of Agenda 21 and by Paragraph 14b and 17b of the Plan of Implementation of the 2002 World Summit on Sustainable Development. The OECD Member

¹²⁷⁷ Foley A J *et al*, 'Global Consequences of Land Use', (2005) 309 (5734), *Science*, 570-574, pages 570-2.

¹²⁷⁸ Organisation for Economic Co-operation and Development Organisation. See website <http://www.oecd.org/>. Accessed 10 November 2018.

¹²⁷⁹ See note 1249.

¹²⁸⁰ Luppi B, Parisi F and Rajagopalan S, 'The rise and fall of the polluter-pays principle in developing countries', 32 (2012), *International Review of Law and Economics*, 135-144, page 135-6.

¹²⁸¹ See Glazyrina I, Glazyrin V and Vinnichenko S, 'The polluter pays principle and potential conflicts in society', (2006) 56, *Ecological Economics*, page 324-330.

States have widely implemented the principle in its strict sense.¹²⁸² This is not limited to codification of the principle into national environmental laws and policies, but also influencing the jurisprudence and formation of new environmental laws.

Furthermore, the principle aims to provide for economic efficiency and environmental sustainability by internalizing environmental damages into costs of consumption and production.¹²⁸³ The principle allows economic efficiency reducing distortions in trade, by including environmental costs in the policy and decision-making process. The polluter-pays principle at the international level exists in the trading of greenhouse gas emissions allowances. These are also pollution costs which are internalised, but producers buy allowances before they pass the costs to consumers. Those who contribute to climate change by deforestation should also make amends. If they have exceeded their amounts of greenhouse gases, it is only fair to require the reduction of their greenhouse gas emissions.¹²⁸⁴

However, the principle has not been previously defined with clarity. As a result, the principle has been applied in an *ad hoc* manner by national environmental agencies on a case by case basis. This has been the selective use of established rules rather than refining their national frameworks or unifying the principles. The principle has been found difficult to implement, due to the political processes, legal meaning of the principle, and alleged conflicts with justice, and also seen as a bargaining tool under asymmetrical economic and political conditions. Others point out the principle is ambiguous since it does not determine how much, for what, or when the polluter should pay for the clean-up, and this has complicated the implementation of the enterprise liability theory.

The principle has created legal discord since it does not specify whether the polluter should pay through a compensation scheme or pollution prevention. In addition, many have opposed the polluter-pays principle, because it disregards future generations, since it takes affirmative payments at present. Thus, fairness lacks in the principle as the compensation to the people affected might be disproportionate to the money for the pay-out to clean the environment. Thus, the cost allocation of the principle is unequally distributed. Many experts have also pointed out

¹²⁸² See note 1249.

¹²⁸³ Nicolas de Sadeleer, 'Case Note Preliminary Reference on Environmental Liability and the Polluter Pays Principle: Case C-534/13, *Fipa*', (2015) 24 (2), *RECIEL*, 232-237, page 232.

¹²⁸⁴ Caney S, 'Climate change and the duties of the advantaged', (2010) 13 (1), *Critical Review of International Social and Political Philosophy*, 203-228, page 203-4.

that the principle becomes difficult to use when costs need to be collected across international boundaries or from transnational corporations. This is based on the lack of international laws and central authority to identify the polluter, allocation of property rights or mandate enforcement.

In addition, North America and Europe States have facilitated the public participation principle into their national laws. This has been formulated because environmental protection decisions integrate with public views. The public deserves to know and participate in the government's decisions since they give government power. This has been also suggested under representative democracy. The participation of the public is the notion underpinned in many State's Constitutions. Thus, any decision or standards for specific regulations or preserve significant resources are only made after formal and public announcements in the Government Gazette or media stations. The public are given the opportunity to influence and participate through written comments and/or public hearing accessible to everyone with a grievance.

1.4 Sustainability Principle

Sustainability¹²⁸⁵ (humans and the environment can exist in a productive equilibrium that provides for a better quality of life for all and harmony for present and future generations) means there is a need for continuation and maintenance of the environment.¹²⁸⁶ The concept of sustainable development recognised in the Brundtland Commission Report (Brundtland, 1987)¹²⁸⁷ states that economic planning that fosters economic growth must preserve and protect the quality of the environment for future generations.¹²⁸⁸ This principle has been hard to apply,

¹²⁸⁵ Ben-Eli M, 'Sustainability: The Five Core Principles-A New Framework', (2006), 1-12, page 4. See "A dynamic equilibrium in the processes of interaction between a population and the carrying capacity of an environment such, that the population develops to express its full potential without adversely and irreversibly affecting the carrying capacity of the environment upon which it depends".

¹²⁸⁶ Dong Y and Hauschild Z M, 'Indicators for environmental sustainability: The 24th CIRP Conference on Life Cycle Engineering', (2017) 61, *Procedia CIRP*, 697–702, page 697. See also Agyeman J and Evans B, "Just Sustainability": The Emerging Discourse of Environmental Justice in Britain?', (2004) 170 (2), *The Geographical Journal*, 155-164, page 157.

¹²⁸⁷ Brundtland Commission, *Our Common Future: Report of the World Commission on Environment and Development*, 1987. United Nations Conference on Environment and Development (UNCED), 1992. Earth Summit, Rio de Janeiro, Brazil, 3–14 June. World Commission on Environment and Development (WCED 1990), *Our Common Future* (also referred to as the Brundtland Report, after the commission's chair, Gro Harlem Brundtland, who was Prime Minister of Norway at the time).

¹²⁸⁸ Dogaru L, 'The importance of environmental protection and sustainable development: 3rd World Conference on Learning, Teaching and Educational Leadership (WCLTA-2012)', (2013) 93, *Procedia - Social and Behavioral Sciences*, 1344 – 1348, page 1345. See also Lozano R, 'Collaboration as a pathway for sustainability', (2007) 15 (6), *Sustainable Development*, page 370–381, page 371-2.

because long-term sustainability goals and analyses depend on the specific natural resources.¹²⁸⁹

The principle is recognised by the Rio Declaration¹²⁹⁰ and Agenda 21, the UNFCCC and the CBD. Its substantive elements are Principles 3-8 in the Rio Declaration, and the procedural elements are in Principles 10 and 17, the role of public participation in decision-making. The World Summit on Social Development recognized and identified Sustainable Development Goals (SDGs) in 2015. These are socio-economic development and environmental protection goals.¹²⁹¹ Thus, these three pillars of sustainable development must be equally upheld for better quality of life.¹²⁹²

At this Rio Conference soft forest principles were adopted, this was the Statement of Principles for the Sustainable Management of Forests.¹²⁹³ The 2002 Johannesburg Conference also aimed at protecting the environment. These efforts were aimed at environmental protection, and the promotion of integration in global development programmes. This resulted in the adoption of the Johannesburg Declaration on Sustainable Development and the Implementation Plan which maintained in path of the development of the sustainable development approach. The Rio +20¹²⁹⁴ Summit brought much needed attention on sustainable development and encouraged States to integrate the approach into their national principles. In the Kyoto Protocol, industrialized States are encouraged to limit their greenhouse gas emissions and accept the goal of sustainable development.

With regards to forests, this concept has been developed with time and in a relevant or progressive manner.¹²⁹⁵ This started at the Rio Convention in 1992 and the further development of the Statement of principles for the Sustainable Management of Forests was adopted. The document is aimed at the regulation of principles of forests sustainable development which is

¹²⁸⁹ Morelli J, 'Environmental Sustainability: A Definition for Environmental Professionals', (2011), 1 (1), *Journal of Environmental Sustainability*, 1-9, page 3-4.

¹²⁹⁰ United Nations Conference on Environment and Development (UNCED), 1992. Earth Summit, Rio de Janeiro, Brazil, 3–14 June.

¹²⁹¹ Ukko J *et al*, 'Sustainable development: Implications and definition for open sustainability', (2018), *Sustainable Development*, 1-16, page 1. See also Arnold M, 'Fostering sustainability by linking co-creation and relationship management concepts', (2017) 140, *Journal of Cleaner Production*, 179–188, pages 179-84.

¹²⁹² Goodland R, 'The Concept of Environmental Sustainability', (1995) 26, *Annual Review of Ecology and Systematics*, 1-24, page 11.

¹²⁹³ See note 1288, page 1345-6.

¹²⁹⁴ United Nations Conference on Sustainable Development held at Rio de Janeiro, Brazil, 20 Jun 2012 - 22 Jun 2012.

¹²⁹⁵ See note 1288. See also Chang C H, 'The determinants of green product innovation performance', (2016) 23, *Corporate Social Responsibility and Environmental Management*, 65–76, pages 65-8.

supposed to be in agreement with the conservation of the environment. This allowed for the adoption of the General Declaration at the Helsinki Conference in 1993 on the conservation of forests in Europe. This formulated document has some general principles which relate to development and sustainable management of forests.

In 1999, more obligations were given in the Rome Declaration¹²⁹⁶ which focused on the principles and measures aimed at developing and improving the protection of forest lands in Europe. However, forests require international partnerships by all nations, ensuring comprehensive forest protection and an efficient economy. The development of the sustainable management of forests has been an important process in the forest protection regime since it signifies the importance and recognition of forests in social processes by some States.¹²⁹⁷ The importance of sustainable development of forests can also be merged with economic development and political transformations.

The SDGs¹²⁹⁸ have been enacted to heal the planet and shift it towards a secure world which is sustainable and on a climate change resilient path. The UN has launched the Sustainable Development Solution Network to monitor the SDGs. The SDGs targets ensure that there is a common goal between policy-makers, local communities and business partners in the development and refining of a sustainable Earth. Of importance to this research is Goal 15 which focuses on forests. It states that by 2020, there is a need to have conserved, restored, and the sustainable use of forests should be in line with obligations under international environmental instruments. Goal 15 (2) states that: *by 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally and progress towards sustainable forest management*. Thus, this principle is important in the conservation and protection of forests. This has also been recognized by States who have signed the CBD, the UNFCCC and the Kyoto Protocol.

Sustainable development aims to foster a balance between socio-economic growth and maintaining and protection of the environment. Thus, this should not also affect future

¹²⁹⁶ Rome Declaration on World Food Security, 1996, Rome.

¹²⁹⁷ Diniz H F *et al*, 'Mapping future changes in livelihood security and environmental sustainability based on perceptions of small farmers in the Brazilian Amazon', (2015) 20 (2), *Ecology and Society*, 1-15, pages 1 and 12.

¹²⁹⁸ UN, Transforming our world: The 2030 agenda for sustainable development, (2015). See website on <https://sustainabledevelopment.un.org/?menu=1300>. Accessed 20 December 2018.

generations from using the same forests for these resources.¹²⁹⁹ This can be extended to another example such as eco-tourism. This can create economic incentives and help in the collection of funds for protecting the environment. Natural resources should be maintained and preserved for the inheritance and use of them by future generations.¹³⁰⁰ The principle also realises livelihood sufficiency and employment opportunities, intra-generational equity, civility in socio-ecological activities, precaution and adaptation, integration and democratic governance.¹³⁰¹

The principle states that the precautionary principle must be respected in terms of uncertain risks. It encourages regulators and corporations to take precautionary steps to avoid poorly understood risks, and serious or irreversible damage. Plans should be put forward for learn the risk, design options in terms of unforeseen risks and also having adaptation management plans. The principle is also aimed at maintenance of essential ecological processes and further life-supporting systems.¹³⁰² It also tries to create a good quality life to everyone who is vulnerable and poor in all communities.¹³⁰³ The proposals and plans should always recognise public participation and transparent decision-making processes.¹³⁰⁴ Thus, these decisions should reflect the importance of sustainability and the mutual supportive benefits, this should be done without compromising individual rights.¹³⁰⁵ The principle aims also to decrease the rate at which human beings extract natural resources from the earth.

However, economies are not currently stable, some countries depend only on their natural resources for economic development, and this also affects the social life of their communities. The hegemonic definition of sustainable development and sustainability have moved far away from each other creating ambiguity and inconsistencies in national laws promulgated by States. The definition of sustainability is vague and boring in that it tries to quantify the limits of life by suggesting that quality of human life can be supported by the necessary resources that are

¹²⁹⁹ Callicott J, Baird and Mumford K, 'Ecological Sustainability as a Conservation Concept', (1997) 11 (1), *Conservation Biology*, page 32–40, page 33-4.

¹³⁰⁰ Mebratu D, 'Sustainability and Sustainable Development: Historical and Conceptual Review', (1998) 18, *Environmental Impact Assessment Review*, 493-520, page 493.

¹³⁰¹ Robinson A N, 'Beyond sustainability: Environmental management for the Anthropocene Epoch', (2012) 12 (3), *Journal of Public Affairs*, 181–194, pages 181-3.

¹³⁰² Alrøe F H and Noe E, 'Sustainability assessment and complementarity', (2016) 21 (1), *Ecology and Society*, 1-16, page 1-2.

¹³⁰³ Richardson J B, 'Indigenous Peoples, International Law and Sustainability', (2001) 10 (1), *RECIEL*, 1-12, page 1-2.

¹³⁰⁴ *Ibid.*

¹³⁰⁵ Kim E R and Bosselmann K, 'Operationalizing Sustainable Development: Ecological Integrity as a Grundnorm of International Law', (2015) 24 (2), *RECIEL*, 194-208, pages 194 and 202.

limited.¹³⁰⁶ Furthermore, the elements of sustainability do not garner and harness public enthusiasm to help protect natural forests. Developing countries are looking for a more progressive principle and concepts, however the principle has been associated with dependency theories that make it hard to implement.¹³⁰⁷ It is always difficult to balance principles that are depend on international trade and globalisation with different systems. In addition, it is hard to balance economic and environmental needs when working with the economic and political climate around. To a greater extent developing countries are starting to rely more on developed countries who use their natural resources and raw materials, thus making it difficult to manage them due to consumption and overexploitation.

Sustainability is important since it recognises human endeavours, however placed against the abnormal different identity of countries around the globe its mechanisms fails to adapt on a practical level. On paper, the principle makes sense but when looking at different perspectives of societies and countries the principle has shifted to economic importance than environmental. There was a need to put some limits and explanations on economic growth since countries can never agree that/if their economic growth capacity has been reached.¹³⁰⁸ This principle seems too late to counter the already occurring resource depletion and climate change effects. It has now been overemphasised and now lacks support or relevance since its mercurial birth years.

Nevertheless, sustainability is important, its focuses on being responsible and making decisions that are pro-active and applying innovations that minimize the negative impacts and balancing the maintenance between ecological resilience, political justice, culture and economic prosperity. This will ensure a planet that is desirable for all species for the present and future generation. However, the challenge as lawyers and law-makers is to effectively use, strengthen and improve this principle to make better decisions.

2. Compliance and Control Tools

There are different compliance and control tools that have been established internationally to prevent and reduce environmental degradation. The use of criminal, civil and administrative sanctions are now recognised internationally. It is assumed that environmental liability

¹³⁰⁶ Mang P & Reed B, 'Regenerative Development and Design', *Encyclopedia Science & Technology*, (McGraw-Hill, 2012), 2112-2145, pages 2112-4.

¹³⁰⁷ Lugaresi N, 'The Unbearable Tiredness of Sustainable Development (At Different Levels, Lately)', in Percival V R *et al*, (eds), *Global Environmental Law at a Crossroads*, (Edward Elgar, 2014), 195-210, pages 196-8.

¹³⁰⁸ McDonough W & Braungart M, *Cradle to Cradle: Remaking the Way We Make Things*, (North Point Press, 2010), page 155.

prevents environmental degradation using financial incentives, prison sentences and revocation of licences. The financial incentives are usually expensive and non-payment can result in prison sentences. Criminal sanctions are bad for the image of operators, and they pay the price by their businesses collapsing financially. A revocation of licence means that the business will have to close in certain areas and face the economic chaos that follows business closures. Thus, environmental liability works by pressurising individuals or operators to prevent and reduce environmental degradation. These tools can also be applied if an individual or corporation cuts down trees or degrades forest lands.

2.1 Criminal Sanctions

Criminal sanctions are the prison sentences imposed on individuals found guilty of environmental degradation and damage.¹³⁰⁹ The burden of proof is on the State to prove that the actions taken by an individual have indeed affected the environment.¹³¹⁰ Criminal sanctions mean that a person can be liable for deforestation or forest land degradation. Criminal law has been extended to include corporate officers who act personally, acts of their agents, crimes that they aid and/or fail to prevent since they have a duty of care because of their responsible positions.¹³¹¹ Criminal provisions of international laws allows the corporation to be held vicariously liable for its employee's criminal conduct. As a general rule of thumb, a corporation can be held criminally liable for actions of its employees as they act on behalf of the corporation and are within the scope of the employer's authority. Thus, the moral burden and publicity of criminal convictions make corporation compliance under criminal sanctions effective.¹³¹²

The main argument that favors the use of criminalization is a recognition of how the gravity of the harm and extent to which societies and the environment are affected.¹³¹³ This is a consonant to the principle of criminal law, imprison those who cause harm to others. Environmental crimes are usually crimes that are committed against a society, usually without a human

¹³⁰⁹ Barclay E and Bartel R, 'Defining environmental crime: The perspective of farmers', (2015) 39, *Journal of Rural Studies*, 188-198, page 188-9.

¹³¹⁰ Foster E C, 'Science and the Precautionary Principle in International Courts and Tribunals', (2013) 25 (2), *Journal of Environmental Law*, 336-337, page 336. See also Burchell J, *Principles of Criminal Law*, (2005) (Third Edition), Cape Town, Juta, page 113.

¹³¹¹ Cole E J, 'Environmental Criminal Liability: What Federal Officials Know (or should Know) can Hurt them', (2004) 54 (1), *The Air Force Law Review*, 1-38, page 6.

¹³¹² Okamoto M M, 'RCRA's Criminal Sanctions: A Deterrent Strong Enough to Compel Compliance?', (1997) 19, *University of Hawai'i Law Review*, 425-447, page 447.

¹³¹³ Brady J, Evans F M and Wehrly W E, 'Reputational penalties for environmental violations: A pure and scientific replication study', (2019) 57, *International Review of Law and Economics*, 60-72, page 60-1.

victim.¹³¹⁴ Thus, there is motivation and impetus for the State to become involved for greater environmental protection, as well as disregarded individual rights or interests. The crime of illegal trading in timber is an economic crime with usually no victims to complain in the international courts, thus this requires the State to intervene and bear the burden of enforcement. Furthermore, most of the publicized environmental catastrophes have a moral culpability on the people of the country and government to act and protect the environment.¹³¹⁵

Criminalization of anti-environmental activities is justified on instrumental grounds. Nationally, it is a deterrence against certain transgressive behavior, criminal laws allows certain behaviors to be designated as offensive to community standards. This distinguishes different types and levels of wrongdoing, and also inserts stigma which is a powerful message sending signals to society about lack of tolerance for certain behaviors.¹³¹⁶ In addition, grave environmental violations are usually committed by non-state and individual actors. The ICJ and international human rights bodies focus exclusively on States. Thus, there is a need to include the criminalization of individual actors so that they will not partake in such actions and send a message to the society about the impact and outcomes of such negative and damaging behavior.

Furthermore, creation of international standards will reinforce national commitments to environmental protection. This will also help in prosecuting interstate crimes that have caused environmental degradation. The creation of international criminal standards will reinforce cooperation and extradition measures in judicial systems. This will also extend States' territorial and protective capacity to prosecute individuals beyond their boundaries in international law. Internationalization of environmental crimes will bring much needed recognition to reduce environmental damage.¹³¹⁷

In addition, criminal law should be a subsidiary and addition to both non-criminal and domestic laws. It should be consistent with liberal notions of criminal punishment.¹³¹⁸ Criminal law in the international arena must also respect the sovereignty of States and protect the

¹³¹⁴ Ibid.

¹³¹⁵ See note 1309, page 188-9.

¹³¹⁶ Herber E, "'A crime called nuclear power': The role of criminal law in addressing post-Fukushima damages', (2015) 43, *International Journal of Law, Crime and Justice*, 129-150, page 129-30.

¹³¹⁷ Aragão A, Jacobs S and Cliquet A, 'What's law got to do with it? Why environmental justice is essential to ecosystem service valuation', (2016) 22, *Ecosystem Services*, 221-227, page 221-2.

¹³¹⁸ Jones A C and DiPinto L, 'The role of ecosystem services in USA natural resource liability litigation', (2018) 29, *Ecosystem Services*, 333-351, page 333-4.

internationalization of issues. Furthermore, sovereignty is sensitive and important since it is close to the notions of domestic public order under criminal law. International enforcement of criminal law must allow States in their jurisdictions to prosecute environmental crimes of international interest.¹³¹⁹ Extradition and judicial co-operation must be upheld to encourage States to exercise national jurisdiction over individuals or corporations that commit environmental harm.¹³²⁰

However, environmental criminal enforcement is now being recognised more in environmental law.¹³²¹ Criminal enforcement was added as a harsher substitute of civil enforcement. It is used to instill fear as a compliance and deterrence mechanism on those who might be prosecuted with penal sanctions.¹³²² Criminal enforcement has played a part in enforcing compulsory regulations that is used to govern the corporate private sector.¹³²³ In the corporate arena, criminal sanctions are used to deter and remediate environmental crimes and ensuring public protection.¹³²⁴

Further, criminal law leaves damages and compensation unaffected, they serve different purposes. However, criminal sanctions offers a range of options better than the civil sanctions. They are a deterrence, remediation and also increase public safety. Deterrence in criminal sanctions is essential for the effectiveness of environmental enforcement, this is because most of the environmental degradation and damage can be irreversible.¹³²⁵ Remediation in criminal enforcement is timeless and more effective. Criminal prosecutions reduces the potential of widespread harm and recidivism, thus increasing public safety.

2.1.1 Deterrence

¹³¹⁹ Billiet M C, Blondiau T and Rousseau S, 'Punishing environmental crimes: An empirical study from lower courts to the court of appeal', (2014) 8, *Regulation & Governance*, 472–496, page 472-3.

¹³²⁰ Megret F, 'The Problem of an International Criminal Law of the Environment', (2011) 36, *Columbia Journal of Environmental Law*, 195-257, page 257.

¹³²¹ Herz M, 'Structures of Environmental Criminal Enforcement', (1996) 7, *Fordham Environmental Law Journal*, 679-718, page 680.

¹³²² Garbow S A, '20th anniversary commemorative issue: Essay the federal environmental crimes program: The Lorax and economics 101', (2001) 20, *Virginia Environmental Law Journal*, 47-56, pages 47-9.

¹³²³ Mullikin N, 'Holding the "responsible corporate officer" responsible: Addressing the need for expansion of criminal liability for corporate environmental violators', (2010) 3, *Golden Gate University Environmental Law Journal*, 395-426, page 398-9.

¹³²⁴ Chen J *et al*, 'Does environmental responsibility matter in cross-sector partnership formation? A legitimacy perspective', (2019) 231, *Journal of Environmental Management*, 612–621, page 613.

¹³²⁵ Brisman A and South N, 'Green Criminology and Environmental Crimes and Harms', (2019) 13, *Sociology Compass*, 1-12, page 2-3.

The main purpose of criminal prosecutions is to deter potential violators from committing environmental crimes. Criminal sanctions are considered effective means to reduce and deter crimes, because criminal courts can impose severe prison sentences.¹³²⁶ Civil penalties can always be imposed, but violators just see environmental regulations as a cost of doing any business. Criminal sanctions reflect unwillingness to tolerate environmental crimes by society. Criminal sanctions ensure that the costs are not passed on to the general public.¹³²⁷ This also creates a strong incentive to hold corporate officers responsible by criminal punishment.¹³²⁸ Furthermore, corporate officers are not protected from criminal liability through the corporate entity.¹³²⁹ It must be noted that under Spanish law even legal persons can be held criminally liable.

2.1.2 Remediation

Environmental crimes usually require expedited remediation to limit the environmental harm. Criminal prosecutions are applied when response to environmental crimes is needed, a clean-up or future prevention. Thus, criminal prosecutions also alert the public that environmental crimes are a serious offense, this promotes and allows for effective enforcement of environmental laws.¹³³⁰

2.1.3 Public Safety

Criminal sanctions are important in protecting the public from further environmental crimes of the defendant. The public's health and safety are central to any public agencies, thus any threat to health and safety is a strong indicator and incentive for prosecuting environmental crimes.¹³³¹ Criminal sanctions are society's moral disapprobation that is exactly what the environmental morally outraged regulators want to convey.¹³³²

¹³²⁶ Erickson M L, Gibbs, J P and Jensen G F, 'The deterrence doctrine and the perceived certainty of legal punishments', (1977) 42, *American Sociological Review*, 305–17, pages 305-8. See also Parker C and Braithwaite J, 'Regulation', in P Cane and M Tushnet (eds), *The Oxford Handbook of Legal Studies*. Oxford: Oxford University Press, (2003), page 119–45, pages 120-5.

¹³²⁷ See note 1323, page 402.

¹³²⁸ See note 1324, page 613.

¹³²⁹ Elliott L, 'Cooperation on Transnational Environmental Crime: Institutional Complexity Matters', (2017) 26 (2), *RECIEL*, 107-117, page 107.

¹³³⁰ Lazarus J R, 'Mens Rea in Environmental Criminal Law: Reading Supreme Court Tea Leaves', (1996) 7, *Fordham Environmental Law Journal*, 861-880, page 865.

¹³³¹ See note 1323, page 403.

¹³³² Schroeder H C, 'Cool analysis versus moral outrage in the development of federal environmental criminal law', (1993) 35, *William & Mary Law Review*, 251-268, page 268.

However, better definition of what exactly constitutes environmental crime is needed. There is a need for better assimilation of environmental violations into criminal laws. This is because not every violation satisfies *mens rea* (it must be noted that *mens rea* is not a condition under Spanish law, they recognise culpability) and is a criminal offense. There is a need to define environmental harms and degradation better in criminal laws. This will improve the application of criminal laws removing the plague and hindrances. There is also a need for further research and expertise in the application of environmental and criminal enforcement policies since it is still a new and undeveloped field. The two fields of law need to be properly coordinated and integrated for effective and ascertaining prosecutions.¹³³³

Criminal sanctions are limited in their requirement of harm, whilst environmental degradation and damage has also benefits for societies and substantial benefits.¹³³⁴ This can be seen in the timber and manufacturing industries, they provide employment for many people. Conversely, many illegal acts in environmental law emanate from legal activities since economies are now based on the consumption of natural resources, thus drawing a distinction between the illegal and legal activities is highly problematic.¹³³⁵ Furthermore, it is difficult to trace an international timber company doing these activities in Africa or South Africa. This will require experts to find these companies and a huge amount of finance from these developing countries. However, efforts to reduce deforestation can be necessitated from the developed countries who can reduce deforestation through illegal logging by enforcing strong tracing and forest certified trade checks on their ports of entry.

However, traditional criminal law identify an event called an *actus reus* that is usually immediate, for example death or bodily harm.¹³³⁶ Furthermore, culpability can also manifest itself at a later stage. The persons accused due to an environmental harm maybe be few as time goes by, the environmental harm might increase in magnitude leaving many people who were not even prosecuted, scot-free from obligations or prosecution.¹³³⁷ That is, environmental harm

¹³³³ Blomquist F R, 'The Logic and Limits of Environmental Criminal Law in the Global Setting: Brazil and the United States - Comparisons, Contrasts, and Questions in Search of a Robust Theory', (2011) 25, *Tulane Environmental Law Journal*, 83-98, page 88.

¹³³⁴ Jenkins V, 'The legal response to safeguarding local environmental quality', (2015) 35 (4), *Legal Studies*, 648-674, pages 648 and 650.

¹³³⁵ Rose G, 'Australian Law to Combat Illegal Logging in Indonesia: A Gossamer Chain for Transnational Enforcement of Environmental Law', (2017) 26 (2), *RECIEL*, 128-138, page 128-9.

¹³³⁶ Eck J, 'Police problems: The complexity of problem theory, research and evaluation', (2003) 15, *Crime Prevention Studies*, 79-113, pages 79-81.

¹³³⁷ Mueller G, 'An Essay on Environmental Criminality', in Edwards S, Edwards T and Fields C (eds), *Environmental Crime and Criminality*, (Garland, 1996), page 5-6.

eventually increases and investigation might find that there are many other people who were involved in the crime than the ones prosecuted.

The harm theory used in criminal law is problematic to use in environmental laws. An environmental harm can take years to manifest itself and can cause damage to the environment such that future generations can be affected. Environmental harm is seen as multi-layered existing locally, regionally and internationally, these are not immediately evident as the environmental harm can be a process. In a global system, such harm is difficult to recognise.¹³³⁸

In forest laws most of the crimes usually carry heavy sentences since it is an intentional act to cut down trees or the negligence can be pollution of forest lands. There are other crimes that are entangled with tax evasion and corruption in the timber industry. Thus, criminal law will help reduce illegal logging or trading in the forestry sector. In the same vein, forest pollution can be due to negligence, and issues of substantive fairness are usually raised against strong punishment.¹³³⁹ In addition, there has been an erosion of *mens rea* in environmental offenses since it is difficult to prove. Many criminal defense lawyers are wary that environmental law is vague and violates individual rights since most of “environmental crimes” are not traditional to criminal laws.

Environmental obligations, such as duty of care, is vague and broad to be used in criminal prosecutions. These obligations were never made for individual accountability. The obligations were made for domestic regulation rather than exacting criminal justice standards. Furthermore, this requires a rigorous process of translating international environmental law into the criminal national justice system.¹³⁴⁰

Furthermore, international environmental law is based on customary international and soft law instruments, this may raise concerns about the legality principle and the concepts of the *lex certa*. Nationally, obligations such as duty of care do not necessary give a fair notice to individuals on what are exactly the extent of their duties. That is, a drive for criminalization may result in over-criminalization and an excessive prosecutor discretion. Moreover, both

¹³³⁸ Elliott L, ‘Cooperation on Transnational Environmental Crime: Institutional Complexity Matters’, (2017) 26 (2), *RECIEL*, 107-117, page 110.

¹³³⁹ See note 1330, page 880.

¹³⁴⁰ Faure M, ‘The Development of Environmental Criminal Law in the EU and its Member States’, 26 (2) (2017), *RECIEL*, 139-146, page 140. See also Bartley T, ‘Institutional emergence in an era of globalization: The rise of transnational private regulation of labor and environmental conditions’, (2007) 113 (2), *American Journal of Sociology*, 297–351, pages 297-300.

national and international environmental law rely on administrative agencies that determine frontiers of legal and illegal actions, this may raise concerns about the accessibility and predictability of the law.¹³⁴¹

2.2 Civil Sanctions

Civil sanctions are usually applied as financial penalties for an environmental violation. Liability arising under the civil law regime is classified as civil liability. There is liability under contractual and tort law. In the environmental regime, tort claims constitute an effective system which allows the injured rights party holder to seek a monetary compensation for a negative consequence of environmental degradation or damage that caused an economic loss.¹³⁴² That is, under contractual law, liability arises out of contract between persons, whilst tort law disregards previous relationships which the persons are involved in or previously had.¹³⁴³ This can occur without a contract. Civil liability also exists as unlawful acts of officials. Vicarious liability can be found at the European level and in national legislations of the Member States.¹³⁴⁴ Enhanced social awareness has meant that corporation's environmental performance can result in costly sanctions or penalties that might affect the future financial performance of a corporation.¹³⁴⁵

Civil liability requires a commission or omission by a person, a compensable damage and a causal link between the action and the damage. There are two forms of liability. Fault liability is based on fault of the liable person, whilst strict liability is liability without fault on the side of the actor. Furthermore, fault can take the forms of intent or negligence. The consequence, liability triggers the obligation and duty to restore or compensate. Liability and redress can provide a solution to compensate environmental harm that has occurred, thus can also foster

¹³⁴¹ Ungar M, 'Prosecuting Environmental Crime: Latin America's Policy Innovation', (2017) 8 (1), *Latin American Policy*, 63–92, page 63-4.

¹³⁴² Orlando E, 'From Domestic to Global? Recent Trends in Environmental Liability from a Multi-level and Comparative Law Perspective', (2015) 24 (3), *RECIEL*, 289-303, page 290.

¹³⁴³ Orsini A, 'Business as a Regulatory Leader for Risk Governance? The Compact Initiative for Liability and Redress under the Cartagena Protocol on Biosafety', (2012) 21 (6), *Environmental Politics*, 960-979, page 961-2.

¹³⁴⁴ Friehe T and Langlais E, 'Prevention and cleanup of dynamic harm under environmental liability', (2017) 83, *Journal of Environmental Economics and Management*, 107–120, page 107-8.

¹³⁴⁵ Faure M and Nollkaemper A, 'International Liability as an Instrument to Prevent and Compensate for Climate Change', (2007) 26 (2), *Stanford Environmental Law Journal*, 123-179, page 123.

environmental harm prevention. It can contribute to the effective implementation of the polluter-pays principle, this also promote the implementation of environmental rules.¹³⁴⁶

Under the Convention on Civil Liability for Damage Resulting from Activities Dangerous to the Environment¹³⁴⁷ (*Lugano Convention*) of the European Council, there is much emphasis on the civil liability system. It defines civil liability as liability arising from private law as opposed to public law. This can be an individual or collective compensation mechanism. The Commission assigned two functions of civil liability on individual liability as concerning to environmental damage; one is based on being a legal and financial tool to those responsible and has caused the damage.¹³⁴⁸ They should pay the cost of restoration of the environmental damage, and the other is to enforce standards of behaviour and preventing persons from further environmental damage in the future.¹³⁴⁹ Thus, it has a repressive and a preventive function.¹³⁵⁰ Meanwhile, a collective compensation scheme is for remedying environmental damage not covered by individual civil liability.¹³⁵¹

Furthermore, Article 14 (2) of the CBD provides that: “*The COPs shall examine, on the basis of studies to be carried out, the issue of liability and redress, including restoration and compensation, for damage to biological diversity, except where such liability is purely an internal matter*”.¹³⁵² During the COP-6¹³⁵³ an expert group discussed the status of the existing national and international civil liability.¹³⁵⁴ During the G8 Summit, Heads of States agreed: “*Consistent with the outcomes of the World Summit on Sustainable Development, we support voluntary efforts to enhance corporate social and environmental responsibility. We also*

¹³⁴⁶ Cullet P, ‘Climate change liability and the allocation of risk: Liability and redress for human-induced global warming: Towards an international regime’, (2007) 43, *Stanford Journal of International Law*, 99-121, page 110.

¹³⁴⁷ European Treaty Series-No 150, Lugano, 21.VI. 1993.

¹³⁴⁸ See Brans P H E, *Liability for Damage to Public Natural Resources: Standing, Damage and Damage Assessment* (Kluwer Law International, 2001), page 10-15, and also see Chapter 7.

¹³⁴⁹ Barboza J, *The Environment, Risk and Liability in International Law*, (Martinus Nijhoff, 2011), page 36.

¹³⁵⁰ Baker B R, ‘Customary International Law in the 21st Century: Old Challenges and New Debates’, (2010) 21 (1), *European Journal of International Law*, page 173.

¹³⁵¹ Lee M, ‘Tort, Regulation and Environmental Liability’, (2002) 22 (1), *Legal Studies*, 33–52, page 33. See also Cane P, ‘Are Environmental Harms Special’, (2001) 13 (1), *Journal of Environmental Law*, 3-20, page 3.

¹³⁵² Churchill R, ‘Facilitating (Transnational) Civil Liability Litigation for Environmental Damage by Means of Treaties: Progress, Problems, and Prospects’, (2002) 12, *Yearbook of International Environmental Law*, page 3.

¹³⁵³ *Report of the Workshop on Liability and Redress in the Context of the Convention on Biological Diversity* (UNEP/CBD/WS-L&R/3, 29 June 2001) (hereinafter Biodiversity Workshop). See website on <https://www.cbd.int/doc/meetings/lr/wslr-01/official/wslr-01-03-en.pdf>. Accessed February 20, 2020.

¹³⁵⁴ Daniel A, ‘Civil Liability Regimes as a Complement to Multilateral Environmental Agreements: Sound International Policy or False Comfort?’, (2003) 12 (3), *RECIEL*, 225-241, page 225.

welcome voluntary initiatives by companies that promote corporate social and environmental responsibility, such as the OECD Guidelines for Multinational Enterprises and the UN Global Compact Principles consistent with their economic interest. We encourage companies to work with other parties to complement and foster the implementation of existing instruments, such as the OECD guidelines and the 1998 ILO Declarations on Fundamental Principles and Rights at Work”.¹³⁵⁵

Furthermore, Part V of the OECD Guidelines on Multinational Enterprises provide that: “Enterprises should, within the framework of laws, regulations and administrative practices in the countries in which they operate, and in consideration of relevant international agreements, principles, objectives, and standards, take due account of the need to protect the environment, public health and safety, and generally to conduct their activities in a manner contributing to the wider goal of sustainable development”.

In addition, the parties involved in tort liability are private parties, hence are equal to one another.¹³⁵⁶ A private party can be a natural or legal person, or even a public person acting in a private capacity. Thus, the injured party can bring a claim directly; however, under tort law the unlawful act is usually the infringement of private interests.¹³⁵⁷ These private interests in tort law can be property, health of a person or life, these are called traditional damages.¹³⁵⁸ Civil liability requires an economic loss so there is a need to pay compensation or restore.¹³⁵⁹ Tort law liability is the most relevant form in civil liability in the field of environmental damage.¹³⁶⁰

¹³⁵⁵ Ibid.

¹³⁵⁶ Wiener B J, ‘Something Borrowed for Something Blue: Legal Transplants and the Evolution of Global Environmental Law’, (2001) 27 (4), *Ecology Law Quarterly*, 1295–1371, page 1303. See also Tarlock D A, ‘The Influence of International Environmental Law on U.S. Pollution Control Law’, (1997) 21 (3), *Vermont Law Review*, page 759.

¹³⁵⁷ Mason M, ‘Civil Liability for Oil Pollution Damage: Examining the Evolving Scope for Environmental Compensation in the International Regime’, (2003) 27 (1), *Marine Policy*, 1-12, page 4.

¹³⁵⁸ Bocken H, ‘Developments with Respect to Compensation for Damage Caused by Pollution’, in Markesinis B (ed), *The Gradual Convergence (Foreign Ideas, Foreign Influences and English Law on the Eve of 21st Century)* (Oxford University Press, 1994), page 226. See also Harrison J, ‘Regime Pluralism and the Global Regulation of Oil Pollution Liability and Compensation’, (2009) 5 (4), *International Journal of Law in Context*, page 379.

¹³⁵⁹ Bianchi A, ‘Harm to the Environment in Italian Practice: The Interaction of International Law and Domestic Law’, in Wetterstein P (ed), *Harm to the Environment: The Right to Compensation and the Assessment of Damages* (Clarendon Press, 1997), page 103.

¹³⁶⁰ Sands P, *Principles of International Environmental Law*, (Manchester University Press, 1995), page 629. See also Orlando E, ‘From Domestic to Global? Recent Trends in Environmental Liability from a Multi-level and Comparative Law Perspective’, (2015) 24 (3), *RECIEL*, 289-303, page 290.

Although the Convention on Civil Liability¹³⁶¹ includes compensation for preventive measures costs, this decision is left for governments, public authorities and operators to take such measures. However, there is no specific obligation to take such measures. There has also been a poor ratification rate of most civil liability instruments.¹³⁶² This lack of ratification has caused a lot of concern as to whether States want to harmonise the international issues of civil liability or whether they are encouraging more of their domestic systems.¹³⁶³ This has made the administrative approach important since it is focused on environmental impairment and the loss of natural resources.¹³⁶⁴ The focus on degradation and damage to biological diversity reflects a different concept of liability in international law, it provide compensation to private victims of hazardous activities and also environmental protection strategies.¹³⁶⁵

Nevertheless, civil liability has a focus on private parties' interests which favours individual damages. It also does not provide for a coherent regulatory framework which can respond to public interests relating to environmental protection not private property. Tort law is primarily focused on the protection of persons and their property, it does not provide for solutions based or linked to environmental degradation and damage.

2.3 Administrative Sanctions

Government and public officials who grant permits of licenses can also impose administrative sanctions such as temporary permit suspensions, permits withdrawals, remediation actions and monetary sanctions. Administrative law is being used for control and planning functions to prevent environmental damage through regulations. Although administrative sanctions are meant to prevent harm, they are also equipped with the means to impose liability when an environmental harm has been done. Administrative liability is independent of negligence and is enforced when a person has disrupted or interfered with the natural legal order assigned through regulations or permits. Administrative sanctions make sure that the rules that are set out by public officials or governments are followed, and if not, actions should be taken. These actions are in accordance with the regulations of the rules that have been breached. There are

¹³⁶¹ International Convention on Civil Liability for Oil Pollution Damage, (1969), renewed 1992.

¹³⁶² See note 1352, page 41.

¹³⁶³ Scovazzi T, 'The Mediterranean Guidelines for the Determination of Environmental Liability and Compensation: The Negotiation for the Instrument and the Question of Damage that Can Be Compensated', (2009) 13, *Max Planck Yearbook of United Nations Law*, 183-221, pages 190-2.

¹³⁶⁴ Francioni F, 'Liability for Damage to the Common Environment: The Case of Antarctica', (1994) 3 (4), *Review of European Community and International Environmental Law*, 223 – 230, page 223.

¹³⁶⁵ Percival V R, 'Liability for Environmental Harm and the Emerging Global Environmental Law', (2010) 25, *Maryland Journal of International Law*, 37-63, pages 39-41.

several administrative means to responding to environmental damage, these include injunction, fine, restoration and repair. When the event cannot be avoided, certain reparative purposes can be levied.

Administrative environmental enforcement can be preventive and repressive on certain manners as they offer a better deterrent route.¹³⁶⁶ Preventive law enforcement can be done through supervision, whilst repressive law enforcement can be undertaken by the application of administrative sanctions. This is aimed at achieving adherence to public legal norms of the administrative environment. Effective supervision is used to prevent and reduce environmental degradation through environmental regulations. If the supervision does not work, it is important to use the repressive law enforcement pathway.

Administrative sanctions have more advantages than civil and criminal sanctions. Criminal sanctions are directed at the violators to cause a sense of public embarrassment or deterrence. Civil sanction is compensation for an economic loss that has caused some suffering because of an unlawful act, indemnification to the victims does not usually restore the damaged environment. However, administrative sanctions are directed to the cessation of violations, prevention and the restoration of the environment which was damaged by the violators acts.¹³⁶⁷ The implementation of administrative sanctions does not eliminate the employer's responsibility, the restoration of the environment and criminal responsibility. That means the individual or corporation which did the harmful act is still liable under criminal or civil sanctions. Corporations can also be held accountable under administrative sanctions. Businesses can be frozen or permits can be cancelled if they are liable for the environmental harmful conduct.¹³⁶⁸

There are different forms of administrative sanctions. The regulator or public officials can offer an injunction which is an order to restrain from performing certain activities regarding a harmful act. The government or public official can also freeze the contacts or permits until certain acts

¹³⁶⁶ Amiq B H, 'Administrative sanction in environmental law', (2018) 6 (6), *International Journal of Research - Granthaalayah*, 22-37, page 22.

¹³⁶⁷ Ibid, page 23.

¹³⁶⁸ Ibid, page 24.

required to remedy the environment have been taken.¹³⁶⁹ In addition, a written warning can also be handed to the violators. Administrative fines are also an alternative sanction; this is an imposition of an obligation on the perpetrator to pay a certain amount of money, because it is now too late to compel the perpetrator to rectify the environmental damage and impact.

Furthermore, government coercion can also be used to compel the party to stop the acts that are causing environmental damage, recover or restore the affected environment to the original state. This can be done if there is a serious threat to the environment, and further extensive impact will occur if not immediately stopped and might lead to a irreversible damage. The Environmental Liability Directive (ELD) by the EU for its Member States has also set up a system based on public law in the form of administrative mechanisms and sanctions. It encourages the operator that has caused the damage to take necessary measures to prevent or restore the environment. In short, administrative proceedings are less strict than criminal and civil proceedings, thus administrative proceedings are a cheaper alternative. Therefore, it is cost-effective to complement the criminal sanctions with administrative sanctions. The use of the two leads to greater and additional deterrence.¹³⁷⁰

These are some of the main advantages of choosing the administrative sanctions route:

- Administrative prosecutions are faster than criminal and civil prosecutions.
- The results are certain.
- The measures are taken immediately and they are usually applicable to the environmental damage and there is no court challenge.
- There is a great number of measures that can be taken under administrative enforcement. Some measures can be applied before or concurrent with the sanctions already imposed.
- They are flexible which improves on compliancy.
- Administrative measures are better tailored for addressing environmental damage as they work with the conditions under which an activity can be exercised.
- They can be imposed on legal and natural persons.

¹³⁶⁹ Little G, 'Developing environmental law scholarship: Going beyond the legal space', (2016) 36 (1), *Legal Studies*, 48–74, pages 49-51. See also MacCormick N, *Institutions of Law: An Essay in Legal Theory*, Oxford: Oxford University Press, (2007), page 290.

¹³⁷⁰ Faure *et al*, 'Criminal or Administrative Law to Protect the Environment? Evidence from Western Europe', (2012) 24 (2), *Journal of Environmental Law*, page 253.

- Since they are usually given by regulators and government officials in their field of expertise, sanctions are imposed on an informed decision basis.

There are also other reasons that can undermine administrative enforcement:

- A great discretion is given to the authorities with regard to the sanctions.
- Sanctions can only be imposed after a warning, thus this can be negotiated rather than effective punishment.
- The regulators usually have a relationship with the perpetrator leaving room for maneuver or leniency rather than deterrent punishment.
- The decision usually lacks transparency since the public and NGOs are not allowed in the decision-making process.
- Administrative enforcement procedures are not integrated, coherent or fixed in a manner that reduces confusion and fragmentation.
- They are not aggravated in the very cases of recidivism of infringements.
- There is no social or public blame associated with administrative sanctions.
- The fines awarded are usually low.
- They lack a systematic obligation that can restore the environment whenever environmental damage occurs.
- There are human rights issues that can arise under Article 30 and 40(1) due to lack of fair hearing and trial.

2.3.1 Strict Liability

Strict liability is the liability in the absence of fault, intent, knowledge, breach of contract, or direct or indirect wrongdoing by person said to be responsible. It applies to individuals and corporations. This is to insure that there will always be a person liable for clean-up costs; it is a joint and several liability.¹³⁷¹ Courts can identify one perpetrator from a group and they can hold the person responsible for all the clean-up costs.¹³⁷² Since the concept is severe, it is seen as strengthening environmental protection. Its purposes are to prevent damage and sometimes reparations of the environmental losses. The concept works in a similar manner to polluter-

¹³⁷¹ Posner A R, 'Strict Liability: A Comment', (1973) 2, *Journal of Legal Studies*, 205-222, page 205.

¹³⁷² Winter G *et al*, 'Weighing up the EC Environmental Liability Directive', (2008) 20 (2), *Journal of Environmental Law*, 163-191, page 166.

pays principle, and in the absence of a civil claim one can launch strict liability. Thus, the perpetrator is obliged to compensate environmental harm regardless of behavior.¹³⁷³

Strict liability has several advantages:

- Courts are relieved of the difficult task of setting appropriate standards of reasonable care.
- Plaintiffs are also relieved of the burden of proof which can be very scientific and complex.
- The plaintiff should not shoulder a burden if the risks are acceptable only because of its social utility.¹³⁷⁴

Strict liability is also set out in Article 3(1) (a) of the ELD. It can only arise if there is an imminent threat¹³⁷⁵ or has occurred from activities listed under Annex III¹³⁷⁶ of the ELD. However, Article 16 (1) points to the Member States to add more activities to this list. The Article 3 (1) (a) relates to all kinds of environmental damage, but is limited only to those damages caused by occupational activities listed under Annex III .

2.3.2 Environmental Liability Directive in Europe

The EU has put forward to its territory the Environmental Liability Directive¹³⁷⁷ (2004-ELD) which is based on the polluter-pays principles¹³⁷⁸ to remedy and prevent environmental

¹³⁷³ Sigman H, 'Environmental Liability and Redevelopment of Old Industrial Land', (2010) 53, *The Journal of Law & Economics*, 289-306, page 292.

¹³⁷⁴ Boyle E A, 'Globalising environmental liability: The interplay of national and international law', (2005) 17 (1), *Journal of Environmental Law*, 3–26, page 13.

¹³⁷⁵ EU Environmental Liability Directive 2004/35/CE of the European Parliament and of the Council of 21 April 2004 on Environmental liability with regard to the prevention and remedying of environmental damage, Article 2 (9). See website <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02004L0035-20190626&qid=1568193390794&from=EN>. Accessed March 6, 2020. See Amendments here on this EU Environmental Liability website <https://ec.europa.eu/environment/legal/liability/>. Accessed March 6, 2020.

¹³⁷⁶ Ibid. "Annex III lists 12 activities which are covered by other Community directives. These activities comprise the operation of polluting operations, operations subject to permits for discharge of dangerous substances into water and groundwater, waste management operations, manufacturing, storage or use of dangerous substances and preparations, plant protection products and biocidal products, transport of dangerous goods by road, rail and vessels and release of genetically modified organisms".

¹³⁷⁷ See note 1375.

¹³⁷⁸ Ibid.

degradation.¹³⁷⁹ The ELD has a testing procedure to determine the appropriate equivalency methods for assessing the scale of compensatory remedies and measures needed to reduce and offset environmental damage.¹³⁸⁰

The ELD imposes a duty and liability on the operator of an activity that creates environmental degradation, it also complements existing European environmental laws. The operator is liable for complementary and compensatory remediation measures. The use of the primary remediation is to restore the environmental degradation and damage. The use of the complementary remediation is to provide an alternative similar sanctuary level of natural resource and ecosystem services. The competent authorities will have to determine what is the compensatory remediation needed to offset the interim losses. The ELD is aimed at restoring the environment to its natural state with the recovery of sites and compensation of ecosystem services that benefit communities. It also bases its analogy on the Millennium Ecosystems Assessment¹³⁸¹ approach that the public and the services lost must be compensated, these can also be ecosystem services. Human welfare is an integral part of the costs of the ecosystem services to be recovered.

The principles most noted by the Directive in Article 174 (2) of the European Commission Treaty¹³⁸², are the polluter-pays and prevention principles. The principle of environmental liability especially the polluter-pays principle is internalised by Article 1 of the Environmental Directive 2004/35/EC.¹³⁸³ Article 2 (2) of the Directive defines ‘damage’ as a measurable and significant adverse effect on the conservation and sustainable use of biodiversity, this significance is determined on the basis of long-term or permanent change to biodiversity. The Directive in Article 8 recognises that communities must also be compensated if there is any

¹³⁷⁹ Martin-Ortega J, Brouwer R and Aiking H, ‘Application of a value-based equivalency method to assess environmental damage compensation under the European Environmental Liability Directive’, (2011) 92, *Journal of Environmental Management*, 1461-1470, pages 1461-3.

¹³⁸⁰ Fasoli E, ‘The Possibilities for Nongovernmental Organizations Promoting Environmental Protection to Claim Damages in Relation to the Environment in France, Italy, the Netherlands and Portugal’, (2017) 26 (1), *RECIEL*, 30-37, page 32.

¹³⁸¹ Millennium Ecosystems Assessment and Toolkit. See website on <https://www.millenniumassessment.org/en/index.html>, and <http://www.unpei.org/sites/default/files/PDF/ecosystems-economicanalysis/MEA-A-Toolkit.pdf>. Accessed on 12 November 2018.

¹³⁸² European Commission Treaty, Rome, 1958.

¹³⁸³ Endres A and Friehe T, ‘R&D and abatement under environmental liability law: Comparing incentives under strict liability and negligence if compensation differs from harm’, (2011) 33, *Energy Economics*, 419–425, page 420.

damage to the environment and they have lost ecosystem services. The Directive is cemented by the polluter-pays principle in the EU law.¹³⁸⁴ The principle is the underlying principle of the Liability Directive. As stated in Article 8, the polluter has to bear costs of preventing and remedying actions.

The prevention principle has been enacted in the Single European Act of 1986, and thus it complements the polluter-pays principle. The principle involves risk assessment of the harm. This has also expanded into the more complex precautionary principle. The principle can anticipate environmental degradation or can try to anticipate the spread if the degradation has already occurred. The prevention principle prevents further spread or intends to prevent environmental degradation. Furthermore, Article 1 states that the Directive is based on the polluter-pay principle, aims to prevent and remedy environmental degradation.¹³⁸⁵

The prevention principle is formulated in Article 5, this provision is an obligation to take preventive measures when environmental degradation has not yet occurred but is an imminent treat. In Article 6 (1) (a), this states that when the degradation has already occurred and it establishes the obligation to control, contain, remove or manage the degradation immediately in order to prevent further environmental degradation. These two obligations show that the Directive is well formulated in the prevention principle and the polluter-pays principle. In addition, the basis of the Directive is Article 175 (1) of the European Commission Treaty which states that the Member States must adopt more stringent measures to protect the environment. However, the Directive is limited in scope and represents a minimum approach since Member States are given that duty and discretion. The Member States are also given the discretion with regard to the concepts and principles in the Directive. This has left a gap for confusion and unco-ordinated enforcement measures in the Member States.

The Directive covers the elements of the natural environment that is protected species and habitats, which are accounted as water and land. These are referred to as 'natural resources' in the Directive. The definition of the environment is obviously narrow. The wide definitions

¹³⁸⁴ See note 1375. Article 1 of the Liability Directive and also see the Preamble.

¹³⁸⁵ *Ibid.* The Preamble states that the objective of the Directive is to prevent and remedy environmental damage.

include natural resources, artificial things and human beings. That is, the Liability Directive is narrow compared to the CERCLA¹³⁸⁶ and the Convention on Biodiversity.

Furthermore, the definition of the damage under Article 2 (2) of the Liability Directive, comprises two steps. Firstly, there has to be a measurable adverse change or impairment to service of the natural resource. Secondly, the resource has to be adversely changed or impaired to constitute damage under the Liability Directive. The threshold of environmental damage is high under the Directive. The complex definition of damages leaves a greater discretion for interpretation and implementation by the Member States.

In addition, the term ‘environmental damage caused by an occupational activity’ responds to certain species and habitats, thus the term is limited to certain species and habitats since it does not cover all essential parts of the environment. The Directive does not make things easy to assess when environmental damage has occurred. It has defined damage in a complex way, the definition of the impact on natural resources can only be envisaged under its scope. Thus, the Directive has a narrow scope, but it tries to complement this by empowering Member States so that they can extend and elevate protected areas under their national laws.

The protection of natural habitats is defined under Article 2 (3) of the Liability Directive. The White Paper suggested the protection of certain habitats that were recognised under the Habitats Directive of 1992. This increased in 2009 as the Directive covered about 25 per cent of the community land area. The Directive has left out the many habitats not listed as it is left to the Member States to recognise and protect certain habitats that are confronted with environmental degradation through national laws as it is their discretion. This leaves room for environmental damage or harm of the habitats and species not listed. However, the primary obligation under Article 5 states that Member States must prevent all damage to the environment.

The second obligation is to bear the costs of these measures taken to protect the environment. In terms of Article 6, the operator is obligated to notify the relevant authorities about the environmental damage. Thus, Article 6 (1) (a) obligates the operator to prevent and if already

¹³⁸⁶ The Comprehensive Environmental Response, Compensation, and Liability Act 42 U.S.C. §9601 et seq. (1980).

occurred, Article 6 (1) (b) state that the operator must take remedial actions and measures in accordance with Article 7. The costs of the measures and restorations are defined in Article 2 (16). This definition of costs is very wide. That is, costs can be to prevent and restore the environment. They also include the assessment of the environment damage and the imminent threat with supervision costs. These provisions implement the polluter-pays principle. That is, if the operator does not take any action, the degradation will not be remedied and the costs will never be collected.

In 2008 the EU adopted a new set of “*Directives*”¹³⁸⁷ aimed at protecting the environment through criminal law. This was the first time the EU had tried to use criminal law to regulate national laws of Member States in the field of criminal law. The main reason for these actions was that criminal law was seen a better deterrence measure to achieve environmental protection through the whole region of the EU. The *Directives* were said to be primarily aimed at setting a minimum standard of environmental protection in terms of criminal law. The *Directives* requires Member States to treat serious environmental offences as criminal offences or acts if they are committed intentionally or with gross negligence.

However, the *Directives* does not add or define new environmental harmful or degradation activities. It merely subjects environmentally harmful activities already regarded as illegal by EU laws and other national laws to radical criminal measures. The *Directives* suggest under national laws, that individuals and legal persons who commit a criminal offence pointed out in the *Directives* should be subjected to criminal penalties. The *Directives* also introduces individual and corporate criminal liability, by pointing out legal persons can commit a criminal offence.

Furthermore, the *Directives* also point out that the Member States of the EU have to ensure legal persons are held criminally liable for offences committed for their benefit by employees or certain individuals acting on their behalf or individuals exercising control within the legal person. This also extends to situations where there is lack of supervision or control by the responsible operator or person in charge. In the same vein, the liability of legal persons does

¹³⁸⁷ Directive 2008/99/EC of the European Parliament and of the Council of 19 November 2008 on the protection of the environment through criminal law (OJ L 328, 6.12.2008, p. 28-37). See also proposal for the Directive under document COM (2007)51 final, dated 9 February 2007. Available at: <http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2007:0051:FIN:EN:PDF>. Accessed February 10, 2019.

not exclude the criminal liability of individuals who committed the offence when acting for the company. This addition could be seen as a crucial change to those countries who do not recognise corporate criminal liability.

The *Directives* goes further in defining “responsible corporate officers”, these are persons who have leading positions within a legal person. This can be based on power of representation of or in the legal person, the authority to make or take decisions on behalf of the legal person, or the authority to exercise control within the legal person. This was meant to reduce the confusion and different interpretation of the legal term meant by responsible corporate officers, this could have led to corruption and forum shopping.

Nevertheless, the *Directive* has a narrow scope of application and sets up a minimum liability scheme with much discretion left to Member States on crucial questions. Most of its open definitions are ambiguous and open to many phrases. In particular, the application of personal and material scope of application of the Liability Directive is limited to the damage caused by operators who partake in occupational activities. In addition, it is only limited to listed and specified habitats. It lacks the recognition of natural persons who can bring direct claims against operators or an obligatory insurance scheme for environmental damage and degradation.

The liability system which could have eased the burden of proof is not included in the Directive. The operators can escape liability on the exceptions listed in the Directive or because there is lack of proof. A large amount of discretion is also given to Member States to insert whatever they choose in their national laws. This has undermined a uniform and co-ordinated implementation of the Liability Directive by Member States. These aspects diminish the effectiveness of the Liability Directive to prevent and reduce environmental degradation.

The Commission has not yet fully defined what is meant by ‘environmental damage’ and ‘what the environment is not’ as a uniform view under the Member States since there is no proper definition given by the Commission. The Commission also has not clarified what degree of impact is required to constitute environmental damage. The problematic part of causation comes when the Commission recognises that the person is only liable if the act of the person is accused, and the injured party can prove causation and damage emanated from it. Causation is difficult to prove if many people caused it or it is a future event. The causal link between the

act and the event to the environmental damage can be difficult to prove. Furthermore, the Commission does not set out an adequate remedy for environmental harm, all actions are left to the discretion of the Member States. It can be stated that the Directives that have been made and agreed to by the EU are mere guidelines, but the real work of environmental protection starts at the national level, and political will is vital for environmental enforcement and compliance in these States.

2.3.3 Corporate Liability

Corporate liability has two social goals which are: - inducing corporations to internalize social ramifications of their activities, and inducing corporations to deter, prevent, and report their employee misconduct.¹³⁸⁸ Corporations can be held responsible and liable for misconduct implemented on their behalf and also wrongdoing committed by their employees within the scope of the employment; even if this was against corporate policy.¹³⁸⁹ This is called vicarious liability and it explains a relationship between corporations and employees. The corporations can be held responsible for actions or conduct performed by their employees. This is because corporations are the beneficiaries of their employees' conduct, and thus ought to bear the cost of actions taken on their behalf. Moreover, corporations can control their employees, and thereby should motivate to deter and disrupt employees' misconduct.

Furthermore, direct liability is when the corporation is liable for its own tortious and criminal conduct, even though the acts that constitute the misconduct were taken by the employees. There is a need for wrongful action which involves the corporation's part, this might not include a violation on the employee's part (for example corporate violation of duties to select, control and supervise employees, duty of care to protect other persons and their property). The employees' actions are seen as taken by organs in the corporate body. Thus, corporations are the beneficiaries of employee conduct and therefore should bear the liability for misconduct which may be embedded in these actions.¹³⁹⁰

¹³⁸⁸ Odeda S, 'Inducing corporate compliance: A compound corporate liability regime', (2011) 31, *International Review of Law and Economics*, 272– 283, pages 272-5.

¹³⁸⁹ Ibid.

¹³⁹⁰ Weissmann A & Newman D, 'Rethinking Criminal Corporate Liability', (2007) 82 (2), *Indiana Law Journal*, 411-451, page 420.

In addition, vicarious liability is imposed on corporations for misconduct that has been committed by their employees within the scope of their employment. The wrongful action must be on the part of the employee. Vicarious liability is imposed on the corporation. However, additional individual liability can be imposed to the employees. It is imposed even if the violation is inadvertent from the corporation's point of view. Thus, the employee's misconduct was against corporate policy or against direct orders. This form of liability is based on the assumption that corporations can control their employees, thereby should be able to control, as well as motivated to disrupt and deter any misconduct of their employees.

3. Conclusion

States around the world have adopted environmental principles recognizing the importance of their environment and human health. These principles have been transposed into national policies and regulations to protect their environment. However, such actions have not been inclusive in the forest regime due to the lack of an instrument to capture such principles and explain their use in forest protection or since it is not severely covered in some instruments. Many States have recognized the use of those principles but there is still confusion and lack of integration with other instruments in the forest regime. The use and recognition of environmental principles have been important in defining concepts. These principles have played a huge part in the development of environmental law, but still more needs to be done.

In addition, the use of compliance and control mechanisms for deterrence, public safety and remediation have also been recognized. However, due to the lack of an instrument for forest protection there is lack of enforcement of these mechanisms. States are not obligated to arrest or remedy forest areas by any international instrument as such actions are not binding. This has also been witnessed by the definition of the "environment" which has intentionally omitted the forest and its main habitats on the regional arena. These decisions of forest protection have been left to the States to respond to, but there is certainly help needed to promote consistency, persistence, uniformity, co-ordination and commitment for effective forest protection.

Although there is a significant amount of national laws that recognise these principles, there are many loopholes and unsettled areas which need to be addressed and States need to develop an agreement and set out definitive solutions. However, further research and observance of the

lack in possibilities in the existing rules will undoubtedly move a step further in protecting forests.

For many years, scientists, policy-makers and citizens have pointed to the importance of forests. Experts, environmental advocates and policy-makers have made intelligent and meaningful suggestions. There have been positive efforts in the establishment of institutions at the international and national levels. However, as seen in the dominance of economic over environmental goals, the recommendations have been ignored. It is little probable that a list of actions to protect forests will either receive more serious consideration or will be successful than before. Nonetheless, there are realistic potential possibilities that can drive the global forest regime into a positive transformative direction. These are the alignment of the global forest regime complex, promotion of the private sector in a strong regulatory framework, and bilateral action on the ground.

There is a point in pursuing a single global forest instrument as a means of fostering better management of forests. However, there is enough history and little commitment to achieve such a recommendable ambition. Forest governance remains an important tool for forest protection, although not the best. Governance is usually not the ideal solution, however in the meantime it is the only solution. Rather, it is now better to focus and coordinate on the elements of the international forest regime already in place. If they work together, they might bring a positive and substantive difference that means creating virtuous circles and building synergies amongst the key elements. There is a need to look at the international environmental instruments to deliver synergies and mutual reinforcing outcomes for the protection of forests in a broader sense of sustainable landscapes. This means setting up teams to interpret and transpose concepts important to form coalitions.

There should be also a multi-institutional task to make forest a common agenda. This could include the Bonn Challenge for forest restoration, expanding the REDD+, and fostering cooperation with public-private partnerships under the New York Declaration. It is important to recognise that the legality and sustainability mechanisms are important to addressing the extra-sectoral pressures on forests. The state has an important goal to facilitate an effective public-private sector partnership. There is a need for private sector governance to protect forests. The New York Declaration provides a better platform for supporting national and subnational governance. This, on a landscape approach, empowers and can support local

communities that can sustain forests rather than convert for agriculture or housing developments. It is also important to recognise multilateral action as it joins actions and recognises the essence of global goals. Thus, it is important to intensify bilateral forest cooperation. This requires financial and political commitment with partner organisations and countries.

To elaborate this point, there are multiple alternatives that are non-state market driven forest governance from international private law. Forest certification is important in this regard. Sustainable forest certification can play a substantive role in reducing illegal logging and timber trading around the globe. Nowadays, this also includes sustainable certification of the timber supply chains as a non-state and supply side market driven form of forest governance that ensures SFM.

Forest certification was designed by environmental NGOs, scientists and forest-based industries with an aim to reduce deforestation and forest degradation. The important tools include NGOs' pressure to invoke choice for the third party which audit against a private law consisting of SFM standards, eco-labelling of the economic operators. The economic operators may include non-state forest owners, timber and forest companies. The auditing is conducted by scientists who are accredited by the non-state rule setting organisation. They may also be financially dependent on the economic operators to do this certification. The certified companies receive positive incentives which can include a privileged access to consumer markets in developing countries. This can also include price premium packages and an improved reputation or social licence granted by NGOs.

Furthermore, there are a few ways in which supply-side forest certification can change forest management behaviours and SFM practices. These include market mechanisms (this includes NGOs' pressure and eco-labelling) and private compliance rules without a direct role of the national governments. In addition, forest certification is compatible with the well-known General Agreement on Tariffs and Trade (GATT)/WTO rules on free trade than the direct actions which includes market boycott campaigns. There are two main approaches to forest certification that have emerged. The first, is under the Forest Stewardship Council (FSC) which was launched by a coalition of NGOs and business actors to advance responsible forest management globally. The second is driven by country-level certification schemes, they have emerged to pre-empt regulation and with relation to the FSC, forest companies, forest owners and national governments. Its standards are focused on the decision-making power – this must

have social and environmental interests. There are many country-level initiatives which have been started to consolidate global alternatives to the ones of the FSC. Forest certification can achieve positive results on an international scale. It is important that states adopt forest certification, not only for economic but for environmental reasons as well.

There is also the forest-risk food commodity certification which recognises that there should be sustainable food commodities that affect forest protection. These food commodities are usually palm oil, soy and beef – this also belongs to non-state market driven governance. The sustainable palm oil certification prohibits the deforestation of forests - palm oil plantations can only be established on secondary or degraded forests. These can only be converted into plantations if the forest structure has significantly changed. However, this scheme is open to abuse or corruption and need strong supervisory powers. There are also no well-known indicators or means of verification. This is required for underlying certification to be effective. These indicators and various practices will need to be developed regionally as it is based on the forms of agriculture in which these states partake.

In addition, corporate social responsibility can play a huge part in forest protection by private sector partnerships. This can create a deforestation free supply chain initiative that links consumers and the companies – to hear the needs of the consumers. Consumers can voice their opinions through engaging with companies to reduce environmental degradation and prevent them selling goods linked to such activities. An increase in number of companies that support deforestation-free initiatives would then limit the number of companies that sell illegally logged forest products, thereby defeating them through an economic means of reducing their profits. This is a voluntary initiative that allows companies to reduce deforestation from their business operations and supply chains. This is usually specific to agricultural (palm oil, soya and beef) and forest communities (timber, pulp and paper) – extending to their bioenergy use.

The 2014 New York Declaration on Forests which aimed to reduce global forest loss by 2020 and reach zero forest loss by 2030, was endorsed by approximately 36 countries. Although much of the goals have not been achieved and it is likely to be extended, the New York Declaration has had an important and positive impact on corporate responsibility and 53 international companies and 54 civil-led society organisations have joined this call. Of importance, private companies were urged to use three policy and management tools, certified commodity procurement, procurement from low-risk jurisdictions, and direct forest area observation and monitoring systems. These sustainability pledges were part of the corporate

social responsibility strategies that are still embraced by many companies so that they can meet their societal expectations and economic growth strategies to improve soft approaches such as branding, consumer loyalty, mitigating potential losses of the critical environmental services, ensure long-term supply, reputational risk, increase market shares and profits. Importantly, the most important main pathways of corporate influence has been through market mechanisms and soft private norms of industry self-regulation. This has been an important realisation from the corporate world that they need to play their fair part in reducing environmental damage and also increase their profits by attracting some consumers who are environment friendly.

The issue of forest protection will need to include these pluralistic efforts from the corporate industries and make it a global goal. All these goals have been focused on sustainable management and protection of natural forests, or the restoration of degradation or destruction. There has been a combination of actions that are focused on forest protection. Although the international forest governance regime has been ambitious, the arrangement has been a low common denominator between countries since they have diverging interests, power and ideas. Nowadays, the global community has started to count more on initiatives that are voluntary and lack enforcement of sanctions.

Moreover, in the next decade three approaches are likely to be the focus, namely regulations, markets and local empowerment. With the realisation of the weaknesses of international instruments, a lot can be achieved by multiple global efforts. Regulation approaches will be led by government approaches, markets based on the leadership of private sector, whilst local empowerment will be based on the synergies being built by human right groups. This will resemble a more hybrid mechanism which is more of a general shift.

The regulatory approach is based on legal and institutional frameworks that follow from a good governance principle and the enforcement by formal organisations and government mechanisms. It is aimed at strengthening state control of resources and the management capacity of administrative institutions to sustainably manage or protect forests. This is focused on a guarantee to the economic and environmental functions of forests. It also considers indirect social functions of communities. The market approach is based on regulating power of the free markets and the important generation of societal benefits by entrepreneurs and companies. It is based on the realisation that the private sector has a financial muscle that can help protect forests through branding and changing the behaviour of consumers. It is vested on the approach that most of the resources come from land, thus land will need to be protected to better provide

and continue with its use. Policies have been developed that are focused on the deregulation of markets, the commodification of forest goods and services.

Furthermore, profits are also supposed to trickle down to the low-income forest communities who play an important part in forest protection - either through indirect employment opportunities or infrastructural investments. Finally, local empowerment is based on the sustainable solutions of the local communities which depend on forests. This position is affected by actors and must recognise the diversity and local forest managers. It also promotes self-determination and property rights to achieve forest protection, equitable societies and sustainable livelihoods.

In order to translate these approaches into solid goals there is a need to strengthen public policies – the governance initiatives' direct or indirect support of the application of the different instruments. The instruments which can directly affect government forest agencies and institutions are generally used to support and strengthen most administrative bodies and their capacity to manage and protect forests. The various instruments can be differentiated – those that aim at configuration of policies, strengthening the administrative bodies and general forest information instruments. At policy level, instruments develop national forest programmes and other affiliated such as land-use management (zoning), conceptualization and planning of protected area networks, and the integrated conservation schemes. All these play vital roles in forest conservation.

The strengthening of administrative efforts include the support of governmental agencies that are responsible for the demarcation and administration of concessions and protected areas. It also includes the authorisation and the audit of forest management of operations, forest surveillance, fire-fighting and patrolling. This can be achieved by providing facilities such as buildings, education and training of all foresters and administrative staff. These measures play a part in building cooperation of the key agents such as the private sector and the local communities. Third category instruments can play a part in compilation of forests, inventories, forest monitoring systems and collection, analysis and presentation of data as to scientific standards.

There are other instruments that focus on the private sector support companies and entrepreneurs which are associated with the timber and forest goods or services generating in professionally managed concessions. Concessions are usually focused on the conservation of public forest areas that are being managed by private timber companies for a period in exchange

for royalties. Concessions usually ensure conformity to the laws and standards of the international markets. This can set by the FLEGT and the certification schemes. These are also other instruments of social value such as the REDD+ that need to be recognised more.

Furthermore, there are important instruments that should also be strengthened, these target forest communities. They should address the poverty alleviation programmes – income generation and empowerment. These can be technical and financial support, development and improvement of agricultural techniques, and the development and improvement of market access for the commercialisation of timber and other non-timber forest products such as ecotourism. Technical training, legal advice and the development of business capabilities are also important. These are soft tools that are required such as participatory village mapping, support awareness and empowerment of local communities. The legal recognition of customary rights to lands and resources plays an important part in forest protection.

In the same vein, recognition of democratic institutions, equality and gender mainstreaming at the local to national levels should also be supported. This can be through the support of NGOs, local representative organisations and civil society organisations which support networking regionally, nationally and internationally. Such instruments should foster partnerships with business actors. The demarcation of customary land and community areas is important too. Protected areas should also contribute and provide to traditional livelihoods. These actions should also be guided by the SDGs.

Positive actions such as clearer organisational structures, building human capacity, professionalizing of procedures – including financial administration, improved law enforcement and the decentralization of government, should be encouraged. A collective effort between governments, private sector and local communities can help in the protection of forests. However, the challenges hint there is a further need for mutual coherence, greater visibility of forest issues in the SDGs agenda and addressing underlying trade-offs between environmental protection, development of global sustainability, social equity and economic development.

Efforts for forest protection in developing countries have to be understood in the broader context of poverty, growing population, and improved well-being and power imbalances in the economic and political favour. In fact, most policies that can affect forests have multiple facets of other underlying issues. They have another factor that motivate forest protection. Policy-makers should focus on the economic power in their countries with initiatives to combat

environmental degradation and damage. This will increase the political and institutional space available for pro-forest action and achievements of forest protection on the ground. Governance initiatives in others sectors should aim to reduce deforestation and forest degradation. From a governmental view there should be better land-use management with the use of effective zoning of land and spatial planning concepts.

There is also agreement that inter-sectoral and integrative approaches would play a huge part in forest protection. This includes best integration at a conceptual level of the policy sectors and in effective practical implementation. Decision-makers, lobbyists, land users and scientists should close the disciplinary boxes and understand forests as part of the socio-ecological systems. There are goals within the forest and non-forest sectors that must be taken into account. Honest reflection and public awareness of the multiple links between societal challenges and environmental degradation is always required.

At the political level, forests must be brought into an expanded network and agenda of all the actors and sectors. There is opportunity under the Paris Agreement and SDGs to put forest protection on the centre of agendas on the international arena. It must be particularly meaningful to strengthen the mandate of the UNFF and United Nations Strategic Plan for Forests 2017–2030. At the government level, there needs to be stronger cross-ministerial collaboration especially within the economic, financial, agricultural and environmental sectors. This is crucial to achieve coherence at strategic policy level and levels of implementation. There is a need of forms of management and institutions to effectively achieve this goal and it is crucial to curtailing forest adverse policies with reducing taxes and subsidies that are related to forest conversion. Importantly, to address these global policy challenges in an interconnected and interdependent world, there is a need for cross-sectoral policy coherence.

Building more coherent multilateral systems will be essential in order to reconcile and deliver the socio-economic and environmental transformations required, as well as to achieve recognition and integration of all land use groups to understand their interests. For implementation, it is important to understand work at the landscape level. This can be agriculture, forest management, cultural and environmental heritage. Integration must also recognise the parallel use and combination of different instruments and other tools which can be regulatory and market tools. This will enable the development of value chains, capacity building, finance and technological innovation. There is also a need to understand the urban-rural interlinkages where needs are being combined with conservation elements. Importantly,

fighting corruption and illegal trade as potentials of jurisdictional approaches should always be systematically explored.

Any successful approach to forest protection needs the active involvement of communities living around forests. Of importance, indigenous and traditional groups should be seen as potential to the global forest agenda because of their direct dependency on forest services; low interest rates as to land uses that are in favour of sustainable forest management and their intrinsic cultural relationship to forests. Local forest users are underrepresented in fora internationally and regionally, lacking legitimacy and usually dominated by their conveners. The recognition of these communities will strengthen global forest governance at the local levels of implementation. There is a need to strengthen existing instruments with public participation and hearings, local councils and farmers, networks of NGOs and forest communities. Mechanisms are required to recognise relevance, legitimacy and accountability of these local participants.

However, these groups will need a guaranteed mechanism for finance. The recognition of tenure rights and stronger local participation will strengthen forest protection. The devolution and actualization of tenure rights is a precondition and enabling factor for increased local participation in forest governance. Making more women and the youth entrepreneurs will effect positive changes, strong political action and pressurize the national governments, community ownership associations, the diffusion of transparent information, investments, knowledge transfer and capacity building of the relevant tenure issues at the international, national or local levels. There should be measures that support the social organization and empowerment of local communities, actively involve local communities and increase their representation in initial states of programmes, facilitate dispute resolutions, support community forest regimes and explore opportunities that can improve the informal forest sector. There should be more explicit commitments regarding the rights and the capacities of local communities.

The private sector plays a role in deforestation and forest degradation as well as generating economic activity and income. The private sector, because of its financial muscle and human resources plays a positive part in the sustainable use and conservation of forests. Governments should continue to enable soft governance principles from the private sector to engage and invest in pro-sustainability activities. They can operate framework for investors, multi-national companies and the medium-sized enterprises. There can also be the use of penalties against companies that do not conform to these rules or other non-compliance sanctions. There is also

a need for appropriate regulatory frameworks with collaboration with the private sector and other economic organisations such as WTO, IMF, as well as other NGOs. This should reengage with UNFF and the private sector. State regulations should also be combined with multilateral agreements ratified by governments.

These efforts must resonate on the ground. The deforestation free supply chain initiatives and declarations should enhance cooperation between different non-state actors and governments. Standards and certification are important to foster accountability and link consumer demand to corporate practice. These are most effective in conjunction with strong enforcement mechanisms and sanctions by the government which is beyond simple consumers' decision. This requires a functioning transparency and traceability system. Governments should provide citizens with a right to public participation, access to information, and access to justice in human rights and environmental matters. Multinational companies should also commit to transparency, traceability and access to information.

It is important to recognise green finance as it plays a role in promoting the desired investments as well as influencing the private sector. States can make policies demanding a claim from business and trade, for the developing of sustainable finance, corporate social responsibility and due diligence. A corporate chartered approach can be developed as an important instrument of supporting environmental welfare. The local resource users and the actors in value chains must harness cooperative and coordinating efforts. Market based approaches such as this should consider informal markets, which reflect the reality on the ground. This requires new ideas, approaches and significant investment.

However, for forest protection to make a positive turn, there should be a substantial effort on the ground beyond the current international forest regime. Regulatory approaches must be more coordinated, cooperate and integrated to effectively work. This requires proper national regulations, enforcement mechanisms and effective sanctions. The governments should support customary forest users. The agents that are involved in societal transformation such as NGOs, international cooperation organisations and others should participate more on local levels to provide training, awareness, participation, capacity building, and the development of facilities. Individuals and institutions who work to protect forests must be given space, protection and financial support to understand their work on the impact on socio-ecological systems. Thus, such efforts can be through the participation of grassroots and academic organisations.

Of importance to the protection of forests is forest ownership and access rights. Land ownership affects the prospects of rural economic development, cultural survival, human rights and environmental protection. A legal forest owner can freely and exclusively use, control, transfer and benefit from a forest. Secure ownership supports economic development, local livelihoods and the conservation of forest ecosystems. Historically, rural lands were owned by local communities and indigenous people under customary property law. The well-established system and practices played a positive part in protecting forests, intact ecosystems and rotational agricultural systems. It is important to recognise the property rights of local communities and the human rights of indigenous people as this can positively enhance forest protection.

Chapter 9: Forest Governance

1. Introduction

Since we do not currently have an international instrument for forest protection there is a need to make forest governance more effective and efficient from an international to a more national level. These issues explained in this thesis can be solved by a stand-alone binding instrument as it can close gaps with new concepts, bringing clarity, cooperation, monitoring, transparency, coordination, cohesion and standards that are binding. States have done sufficient to enact their national laws, and this shows progress and commitment, but their efforts have never been collective. However, improving forest governance can be an alternative in the meantime.

Furthermore, the global goal or commitment is not being accepted by all states and the implementation of forest principles is not being conducted in a uniform manner. There is also a lack of hierarchy and structure in the forest regime. Issues such as fragmentation and lack of co-operation and co-ordination from other Secretariats in the climate change and biodiversity regimes need to be resolved. In addition, international environmental law can help forest protection become a specific topic, not shadowed by climate change mitigation and biodiversity conservation issues.¹³⁹¹

Forest governance¹³⁹² incorporates decisions that are focused on the protection of all forests.¹³⁹³ It is centrally based in international instruments and soft laws that are adopted by states or regions to augment their national legislations, policies and regulations. There is no binding instrument. There is however the Non-Legally Binding Instrument on all Types of Forests¹³⁹⁴ (NLBI) and other instruments that relate to forest protection from the climate change, biodiversity and desertification regimes.

Good forest governance requires enforcement of justice and equality in decisions. These decisions have to be fair for local communities and the environment. The main objective is forest protection and sustainable socio-economic development, which also allows equal

¹³⁹¹ Pallemmaerts M, 'An introduction to the sources, principles and regimes of international environmental law', in Kuokkan T *et al* (eds), *International Environmental Law-making and diplomacy: Insights and overviews*, Routledge Research in International Environmental Law, (2016), 8-20, page 8. Pallemmaerts goes further in stating that '*international environmental law is a dynamic construct that is constantly developing*'.

¹³⁹² See note 386.

¹³⁹³ Larson A M and Petkova E, 'An introduction of forest governance, people and REDD+ in Latin America: Obstacles and opportunities', 2011 (2), *Forests*, 86-111, page 87.

¹³⁹⁴ See note 72.

distribution of forest resources. Moreover, the forestry sector will need to be incorporated into other sectors (such as agriculture, industrial and manufacturing) so that it can anticipate and adapt to causes and effects of deforestation, thereby also ensuring the resilience of forest ecosystems.

There is a need to recognise the use of forest ecosystem services by ensuring tenure rights to local indigenous communities. This will also ensure good public participation (transparency) and the use of traditional knowledge to protect local forests. Forest governance also means that national governments need to have effective delegations and experts to represent their countries in international fora and conferences. There is also a need for such representatives to improve on reporting, monitoring and transparency of sustainable forest management.

Nevertheless, poor governance will cause an increase in the rate of deforestation.¹³⁹⁵ A weak governance system is reflected by high corruption, lack of relevant procedures or programmes for forest protection infringement on local communities' rights, and high levels of confusion in using the sustainable forest management concept. It is clear that poor forest governance has been increased by the disjointed international legal and institutional conditions and this has been inherited at national levels. These are some of the main reasons why there is a need for a binding forest instrument in order to strengthen forest governance. Thus, forest governance requires closing the gaps; implementing framework and institutional structures; the development of legal clarity, accountability and national development plan inclusiveness; and the participation of local communities.

Forest governance includes approaches, mechanisms, concepts, strategies, principles and rules which are adopted from international environmental laws. The chapter discusses some of the forest governance tools that are being used in Spain, South Africa and Australia to try and protect forests, namely the ecosystem approach, sustainable forest management, forest certification and protected areas; it also goes further in discussion of the benefits and importance of "hard and soft laws".

2. Harnessing the Ecosystem Approach

The ecosystem approach is a well-recognized tool under forest governance, it provides a framework for ecosystem conservation and is used to implement the objectives of the CBD.

¹³⁹⁵ Meyers J, Bass S and Macqueen D, 'The Pyramid: A diagnostic and planning tool for good forest governance', (2002), *International Institute for Environment and Development*, 1-58, page 3.

This concept is also based on sustainable development in terms of the Brundtland Report of 1987 which defined and adopted sustainable development.¹³⁹⁶ The approach has been recognized internationally and is a strategy to promote sustainable use resources in a fair and equitable way.¹³⁹⁷ That is, recognising the three legs of sustainable development which are social, economic and environmental considerations to achieve sustainable use of resources. It aims to balance the three objectives of biodiversity conservation, sustainable use and equitable sharing of benefits that can arise from the use of natural resources. It has been primarily recognized and implemented by the framework of the CBD. It takes into account humans and their cultural diversity as an integral part of most ecosystems.

The ecosystem approach enables environmental protection, biodiversity conservation, the maintenance of healthy ecosystems and achieving sustainable development.¹³⁹⁸ It is a shift from an outdated anthropocentric legal framework to a more advanced ecocentric framework that is attuned to ecology as a science and philosophical paradigm.¹³⁹⁹ This is apparent in the addition of ecological integrity into the approach. The focus is now on the structure and the functions of an ecosystem, and how it can be maintained in a healthy state.

The approach hinges on comprehensive knowledge about the relevant ecosystem processes.¹⁴⁰⁰ The knowledge is about the gaps in scientific and policy regarding the ecosystem, the scientific uncertainties and the multi-scalar ecosystem processes. The ecosystem approach relies on iterative management models that encompass and incorporate new knowledge adaptively soon it becomes available. The approach tries to translate key ontological and epistemological insights of ecology into law and policies. The closing of the scientific and law gap meant by the ecosystem approach has led to the adoption and facilitation of the approach in international environmental laws.¹⁴⁰¹

¹³⁹⁶ Raum S, 'The ecosystem approach, ecosystem services and established forestry policy approaches in the United Kingdom', (2017) 64, *Land Use Policy*, 282–291, page 283.

¹³⁹⁷ Hey E, *Advanced introduction to international environmental law*, Elgar Advanced Introductions, Edward Elgar Publishing Limited, United Kingdom, (2016), page 44.

¹³⁹⁸ De Lucia V, 'A critical interrogation of the relation between the ecosystem approach and ecosystem services', (2018) 27, *RECIEL*, 104–114, page 105.

¹³⁹⁹ R Brooks, R Jones and R Virginia, *Law and Ecology: The Rise of the Ecosystem Regime*, Aldershot, Ashgate, (2002), page 2.

¹⁴⁰⁰ See note 1397, page 48.

¹⁴⁰¹ Angel Borja *et al*, 'Bridging the Gap between Policy and science in Assessing the Health Status of Marine Ecosystems, September 2016, Volume 3, Article 175, *Frontiers in Marine Science*, 1-23, page 1-3. Secretariat of the Convention on Biological Diversity (2004). The Ecosystem Approach, (CBD Guidelines) Montreal: Secretariat of the Convention on Biological Diversity 50 p. See website on <https://www.cbd.int/doc/publications/ea-text-en.pdf>. Accessed on 18 January 2021.

Furthermore, the approach also uses appropriate scientific methodologies, which are focused on levels of biological organization.¹⁴⁰² This biological organization encompasses the ecosystem's fundamental structure, processes, functions and interactions amongst themselves, and with organisms and their natural environment.¹⁴⁰³ The approach is a framework that can be adapted or adopted to suit many issues and situations. It is not focused on a spatial particular unit or any scale, and thus refers to any ecological unit that is of any scale.

The approach also does not focus on an all-encompassing solution, because its application depends on conditions established at national, regional and international levels. It is an approach that uses all existing strategies and methodologies in conjunction to solve the complex problems and substantive issues affecting a particular ecosystem. It is to help the high level of uncertainty usually observed in ecosystem processes. This ensures that an adopted balanced approach is applied to ensure that natural resources and society are at the center of decision-making, ensuring equality and future use.

The ecosystem approach has been incorporated with the ecosystem services tools, which refer to the importance of ecosystems to humans and the various benefits which they obtain from these ecosystems.¹⁴⁰⁴ The relationships are more important in making sustainable decisions on socio-economic, ecological, and land-use practices and policies. The ecosystem services usually form synergic and trade-off relationships with one another, so there is a need to incorporate them with approaches that recognize the symbiotic nature of ecosystems. Human management and land-use management can alter ecosystem functions and service provisions.¹⁴⁰⁵ It is required by the CBD that COPs apply knowledge of ecosystem service relationships to enhance synergies and services that can create multi-functional land uses when the drivers of these relationships are well understood.¹⁴⁰⁶ The approach uses forest protected areas and forest certification to reach the goal of sustainable forest management.

¹⁴⁰² Schmitz A *et al*, 'Responses of forest ecosystems in Europe to decreasing nitrogen deposition', (2019) 244, *Environmental Pollution*, 980-994, pages 981 and 988.

¹⁴⁰³ Benra F and Nahuelhual L, 'A trilogy of inequalities: Land ownership, forest cover and ecosystem services distribution', (2019) 82, *Land Use Policy*, 247-257, page 247.

¹⁴⁰⁴ Wu S and Li S, 'Ecosystem service relationships: Formation and recommended approaches from a systematic review', (2019) 99, *Ecological Indicators*, 1-11, page 1.

¹⁴⁰⁵ Dennis M and James P, 'Ecosystem services of collectively managed urban gardens: Exploring factors affecting synergies and trade-offs at the site level', (2017) 26, *Ecosystem Services*, 17-26, pages 19-23. See also Leone M *et al*, 'When we cannot have it all: Ecosystem services trade-offs in the context of spatial planning', (2018) 29, *Ecosystem Services*, 566-578, page 566-7.

¹⁴⁰⁶ Bodnaruk E *et al*, 'Where to plant urban trees? A spatially explicit methodology to explore ecosystem service tradeoffs', (2017) 157, *Landscape Urban Planning*, 457-467, page 457.

The CBD has defined the ‘ecosystem’ as “a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit”.¹⁴⁰⁷ Thus, forest ecosystems are included in the definition as a dynamic mix of plant and animal communities. The ecosystem approach has been recognized by the CBD since 1994. During the expert meeting in Malawi in 1995, the COPs set out 12 principles and the 5 operational guidelines.¹⁴⁰⁸ The Malawi Principles on the ecosystem approach bring two perspectives together, more precisely Principle 5 (which incorporates the two perspectives). It states that the ‘conservation of the ecosystem structure and functioning in order to maintain ecosystem services, should be a priority target of the ecosystem approach’.¹⁴⁰⁹ Thus, the ecosystem approach has become a primary framework for environmental monitoring and environmental impact assessment under the CBD.

The CBD defined the ecosystem approach as a “strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way”.¹⁴¹⁰ Its application is based on the need to balance the strategies of the three objectives of the CBD.¹⁴¹¹ This is based on the application of appropriate scientific methodologies which are based on the levels of biological organization.

The approach recognizes that human beings are at the center and an integral component of many ecosystems. During the COP-5, the COPs endorsed the application and description of the ecosystem approach.¹⁴¹² During the CBD COPs in 2004, sustainable forest management was recognized as an appropriate approach to be applied in forest ecosystems. They also set out parameters for operational guidance under the Decision V/6.¹⁴¹³ During the COP-5,

¹⁴⁰⁷ See note 40, Article 1.

¹⁴⁰⁸ Decision V/6 (n 2) Section B, Malawi Principles, Principle 5. See website on Principle 5, <https://www.cbd.int/ecosystem/principles.shtml>. Accessed on 21 November 2018.

¹⁴⁰⁹ Decision V/6 (n 2) Section B, Malawi Principles, Principle 5. See website on Principle 5, <https://www.cbd.int/ecosystem/principles.shtml>. Accessed on 21 November 2018.

¹⁴¹⁰ See note 40, Article 2.

¹⁴¹¹ Ibid, Article 1, ‘*The objectives of this Convention, to be pursued in accordance with its relevant provisions, are the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding*’.

¹⁴¹² Fifth Ordinary Meeting of the Conference of the Parties to the Convention on Biological Diversity, 15 - 26 May 2000 - Nairobi, Kenya. See website on <https://www.cbd.int/decisions/cop/?m=cop-05>. Accessed on 12 November 2018.

¹⁴¹³ See website on Decision VII/11 of COP-7, 2004, <https://www.cbd.int/decision/cop/default.shtml?id=7748>. Accessed on 20 November 2018.

decision V/6 was based on the 12 principles of the ecosystem approach.¹⁴¹⁴ These had been requested by the COPs and they were published by the Subsidiary Body on Scientific Technical and Technological Advice (SBSTTA) of the CBD. During COP-7 of the COPs, the ecosystem approach was made a priority for biodiversity and ecosystem protection.¹⁴¹⁵ The COPs also agreed on the new rules for the implementation and development pathways to incorporate the ecosystem approach into the CBD programmes. These programmes were also focused in the creation of a new relationship with sustainable forest management.¹⁴¹⁶

Furthermore, the ecosystem approach and the sustainable forest management concept have been diffused and unfolded in parallel on the international and transnational levels, as well as in progression.¹⁴¹⁷ Although they are slightly different, the two are both guided by the same principles. Sustainable forest management is a voluntary international agreement, whilst the ecosystem approach is a broad legal obligation under CBD. The ecosystem approach and sustainable development aim to promote the conservation of ecological and socio-economic values for present and future generations.

Sustainable forest management deals with forests specifically, whereas the approach is concerned with the management of all ecosystems including forest ecosystem. In the CBD, the application of the sustainable forest management concept is seen as compliance with the ecosystem approach requirements as COPs try to protect their forest ecosystems. In addition, the ecosystem services concept is one way of implementing the CBD's ecosystem approach but is narrow since its main focus is in non-marketed forest benefits as considered with other multifunctional forestry approaches.

There are important environmental concepts and initiatives that have been agreed under CBD COPs to meet the ecosystem approach principles. Though the list is not exhaustive, these include public participation, education and awareness, good governance, law and policy, better management and incentives, collection of data, monitoring and modelling, use of protected areas and land-use policies, use of cross-sectoral research and working, and use of indicators.

¹⁴¹⁴ See website on the Principles of the Ecosystem Approach, <https://www.cbd.int/decision/cop/default.shtml?id=7148>. Accessed on 11 November 2018.

¹⁴¹⁵ See website on COP-7, <https://www.cbd.int/decision/cop/default.shtml?id=7748>. Accessed on 11 November 2018.

¹⁴¹⁶ Armatas A C *et al*, 'An integrated approach to valuation and trade-off analysis of ecosystem services for national forest decision-making', (2018) 33, *Ecosystem Services*, 1–18, page 2.

¹⁴¹⁷ See note 1396, page 289.

The COPs under the CBD have agreed on these twelve principles: *“The objectives of management of land, water and living resources are a matter of societal choices, management should be decentralized to the lowest appropriate level, ecosystem managers should consider the effects (actual or potential) of their activities on adjacent and other ecosystems, recognizing potential gains from management, there is usually a need to understand and manage the ecosystem in an economic context. Any such ecosystem-management programme should, conservation of ecosystem structure and functioning, in order to maintain ecosystem services, should be a priority target of the ecosystem approach, ecosystem must be managed within the limits of their functioning, the ecosystem approach should be undertaken at the appropriate spatial and temporal scales, recognizing the varying temporal scales and lag-effects that characterize ecosystem processes, objectives for ecosystem management should be set for the long term, management must recognize the change is inevitable, the ecosystem approach should seek the appropriate balance between, and integration of, conservation and use of biological diversity, the ecosystem approach should consider all forms of relevant information, including scientific and indigenous and local knowledge, innovations and practices, the ecosystem approach should involve all relevant sectors of society and scientific disciplines”*.¹⁴¹⁸

Furthermore, forest certification is being used to conserve forest biodiversity under the ecosystem approach and sustainable forest management.¹⁴¹⁹ These forest certification users are forest managers, policy-makers, scientists, private corporations, individuals, consumers of paper and wood, and environmental lawyers. It is a mechanism whereby an organization sets and develops standards of good sustainable forest management, and auditors issue forest certificates that these standards have been complied with.

In addition, the NLBI encourages national governments to set up forest certification systems. This is a method of marketing timber and wood produced by individuals/corporations through a sustainable manner. This allows national governments to monitor their forest protection programmes, the corporations that are engaging in trading, and cutting and harvesting of timber in forests. This allows national governments to establish standards and uniform procedures for sustainable forest management.

¹⁴¹⁸ See website on the CBD Principles on <https://www.cbd.int/ecosystem/principles.shtml>. Accessed on 20 November 2018.

¹⁴¹⁹ Marine Elbakidze *et al*, ‘The role of forest certification for biodiversity conservation: Lithuania as a case study’, 135, (2016), *European Journal of Forest Research*, pages 361–376.

The forest certification is a process that labels wood and timber before it has been sold, certifying that it was produced or provided by a farmer or community who uses sustainable mechanisms to grow, conserve and protect forests, thus it is a great marketing concept. This allows timber users to make informed decisions when buying wood and timber products. In short, the timber producers who do not use sustainable forest management tools and principles usually are being pushed out of the timber and wood industry, thus this enhances forest protection goals and mechanisms. Therefore, forest certification has helped enforce issues that affect forest governance. It has encouraged consumer and producer interactions which is an improvement for public participation. This also serves the idea of public awareness and education by providing the consumer with information on how the products affect the environment.

For developing governments, forest certification has become a soft policy incentive that is aimed at promoting sustainable forest management and consumption patterns. The initiative in developing countries has also helped with improving the tenure rights of local communities and giving them a stage on which to market their timber and wood products. Forest certification has also brought the idea of ‘green labeling and eco-labeling’ which has set global standards for what is good sustainable forest management, and offers ways of institutionalised licensing and inspection programmes.¹⁴²⁰

Forest certification can help improve forest governance as it can help solve deficiencies and variances between policies and tenure rights.¹⁴²¹ This certification process is now being used consistently under the ecosystem approach. Moreover, the principles of the ecosystem approach can be implemented using national, regional and international plans. These plans might also include national development plans and small project plans at local level. Thus, the ecosystem approach has become a conceptual framework that is used to resolve ecosystem protection issues through scientific reasoning.

Forests have numerous ecosystem services and the type of management must have an effect on protecting and provision of those services.¹⁴²² However, the lack of attention on an international level has led to the two terms of ecosystem-based management and ecosystem management

¹⁴²⁰ Meidinger E, ‘The administrative law of global private-public regulation: The case of forestry’, (2006) 17 (1), *European Journal of International Law*, 47-87, page 47.

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¹⁴²² Schulze K, Malek Z and Verburg H P, ‘Towards better mapping of forest management patterns: A global allocation approach’, (2019) 432, *Forest Ecology and Management*, 776–785, page 776.

being created. This has been caused by the lack of development, innovation and integration of the approach into new principles that can solve current environmental issues. These two approaches have started replacing the ecosystem approach that was recognized by the CBD. The ecosystem approach has a difference with the two named terms or their approaches. Thus, the three approaches have a different framework structure and tools or methods of use when it comes to solving issues. The ecosystem approach has been integrated into international environmental law which has led to its adaptation into national laws. However, its practical implementation is still not understood and vague since it lacks universal guidelines and concrete recommendations so that it can be used across all ecosystem boundaries.

3. Harnessing the benefits Protected Areas

Protected areas are recognised as one of the most important tools for the conservation and management of forests. They have been recognised by Article 1 of the CBD - as a 'defined area designed or regulated for specific conservation objectives'.¹⁴²³ Protected areas are forest regions or lands which are reserved for the functions of conserving biodiversity and nature.¹⁴²⁴ Mostly, protected areas have been used for protection of the wilderness, protection of species, conservation of biodiversity and safeguarding environmental or/and ecosystem services. Other functions relate to cultural sites, tourism, education, and recreation. Protected areas are a cornerstone tool for the conservation of natural forests in developing countries.¹⁴²⁵ Thus, forest protected areas have been defined as a protected area which includes a substantial amount of forest for the purposes of protection.¹⁴²⁶

Forest protected areas often sustain many species and provide a wide range of ecosystem services.¹⁴²⁷ They also provide supporting services to the agricultural sector in terms of inputs such as pesticides for pest control, fertilizers and pollinating bees. Supporting processes refer to ecosystem services such as soil formation, nutrient recycling and maintenance of other species needed by other ecosystems as well, this can include seed dispersal.

¹⁴²³ See note 40, Article 1 and 8.

¹⁴²⁴ Cantu-Salazar L and Gaston K J, 'Very Large Protected Areas and Their Contribution to Terrestrial Biological Conservation', (2010) 60, *Bioscience*, 808–818, pages 808-11.

¹⁴²⁵ Miranda J J *et al*, 'Effects of Protected Areas on Forest Cover Change and Local Communities: Evidence from the Peruvian Amazon', (2016) 78, *World Development*, 288–307, page 288.

¹⁴²⁶ Dudley N and Phillips A, *Forests and Protected Areas: Guidance on the use of the IUCN protected area management categories*, IUCN, Gland, Switzerland and Cambridge, UK, (2006), x + 58pp, page 19.

¹⁴²⁷ Forleo B M and Palmieri M, 'A framework for assessing the relational accessibility of protected areas', (2018) 194, *Journal of Cleaner Production*, 594-606, page 594.

Furthermore, forest protected areas have provisioning services which include food security, water, raw materials, medicinal resources and genetic resources. They also provide regulating services which are the storage and sequestration of carbon, mitigation of natural hazards, and the purification and detoxification of water, air and soil. Finally, forest protected areas have cultural services such as recreational and tourism, aesthetic value, nature based physical and mental well-being, educational and research, spiritual and religious experience, cultural heritage and identity, and peace and stability.

This concept is not new as it has been used since the 19th Century when forests were set aside for cultural values, management of resources and religious reasons. The rise and recognition of protected areas has been due to the loss of biodiversity, this has led to a recognition of a variety of habitats and biomes. The concept and implementation of the system of ‘protected areas’ is now being recognised internationally as a policy tool.

The International Union for the Conservation of Nature (IUCN)¹⁴²⁸ has recognised protected areas as land zoned and demarcated as a geographical zone which is recognised by law, policies or regulations to achieve a long-term conservation plan for nature which has ecosystem services and cultural values.¹⁴²⁹ The IUCN¹⁴³⁰, through its World Commission on Protected Areas, has been developing a clear mapping and understanding of the concept and roles of protected areas. Thus, it has established and published Guidelines on Protected Area Management Categories. It defines protected areas and then introduces the six management categories in an international system of protected areas classification. The data collection role has been held by UNEP World Conservation Monitoring Centre¹⁴³¹ (UNEP-WCMC), in the World Database on Protected Areas (WDPA). The information has also been published on the UNEP-WCMC and IUCN as well as UN List of Protected Areas websites. There are currently about 200 000 protected areas that occupy approximately 15.5 per cent of the world’s land surface.¹⁴³²

¹⁴²⁸ IUCN, International Union for Conservation of Nature. See website on <https://www.iucn.org/>. Accessed on 20 November 2018.

¹⁴²⁹ UNEP-WCMC and IUCN: Protected Planet: [WDPA Dataset]. The World Database on Protected Areas (WDPA). The Global Database on Protected Areas Management Effectiveness (GD-PAME)], Cambridge, UK: UNEP-WCMC and IUCN; 2017. Available at: www.protectedplanet.net. Accessed on 12 November 2018.

¹⁴³⁰ See website on <https://www.iucn.org/theme/protected-areas/about/protected-area-categories>. Accessed on 20 November 2018.

¹⁴³¹ UN Environment Programme World Conservation Monitoring Centre. See website on www.unep-wcmc.org/. Accessed on 20 November 2018.

¹⁴³² Guadilla-Sáez S *et al*, ‘Biodiversity conservation effectiveness provided by a protection status in temperate forest commons of north Spain’, (2019) 433, *Forest Ecology and Management*, 656–666, page 656. See also IUCN and UNEP-WCMC (2011), *The World Database on Protected Areas (WDPA)* January. Cambridge, UK:

Protected areas have been recognised by Articles 1 and 8 of the CBD. The highest form of commitment has been the Strategic Plan for Biodiversity 2011-2020 and the Aichi Targets¹⁴³³.¹⁴³⁴ The Aichi Targets were adopted under the CBD for the COPs' efforts to protect biodiversity.¹⁴³⁵ The Targets' main aims are to increase the protected areas to 17 per cent by 2020.¹⁴³⁶ In early 2004 and 2012, the CBD COPs made commitments by adopting the Programme of Work on Protected Areas.¹⁴³⁷ Furthermore, international networks have been established under global regulations, for example the UNESCO Heritage Sites, the UNESCO Global Geoparks, Biosphere Reserves and the Ramsar Convention¹⁴³⁸. The Ramsar Convention on Wetlands is aimed at the protection of international wetlands that are important for waterfowl habitats.¹⁴³⁹

There has been an increase in recognition to create protected areas, such as the Natura 2000 Network in Member States of the EU.¹⁴⁴⁰ The role of conserving biodiversity has been recognised by more than 168 States. These areas have been identified since they are threatened by agricultural or urban areas. Target 5 of the Aichi Targets also encourage States to reduce the rate of loss of natural habitats, this also includes forests.¹⁴⁴¹ This was to develop participatory measures, ecological representation and effective management of protected areas. The programme also encouraged states to protect areas that stretched transboundary into other states' territories. This was also a framework opportunity between NGOs, governments and local indigenous communities.

UNEP-WCMC. Millennium Ecosystem Assessment (2005), *Ecosystems and human wellbeing: Biodiversity synthesis*. Washington, DC: World Resources Institute. See note 1430.

¹⁴³³ CBD Aichi Targets. See website <https://www.cbd.int/sp/targets/>. Accessed on the 20 November 2018.

¹⁴³⁴ Ibid. CBD, Quick guides to the Aichi Biodiversity Targets, Version 2, 02/2013, 2013. By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, these should be areas that provide ecosystem services and biodiversity importance.

¹⁴³⁵ Smallhorn-West P and Govan H, 'Towards reducing misrepresentation of national achievements in marine protected area targets', (2018) 97, *Marine Policy*, 127–129, page 127.

¹⁴³⁶ Duckworth D G and Altwegg R, 'Effectiveness of protected areas for bird conservation depends on guild', (2018) 24, *Diversity and Distributions*, 1083–1091, page 1084.

¹⁴³⁷ CBD Global Implementation. See website <https://www.cbd.int/protected/implementation/>. Accessed on 27 November 2018. "Protected areas provide a critical safety net for the one billion people living on less than a dollar a day". See website on <https://www.cbd.int/protected/overview/>. Accessed on 27 November 2018.

¹⁴³⁸ Ramsar Convention on Wetlands of International Importance especially for Waterfowl Habitat, (1971). See website <https://www.ramsar.org/>. Accessed on the 15 November 2018.

¹⁴³⁹ Ibid, Article 1.

¹⁴⁴⁰ Hummel C *et al*, 'Protected area management: Fusion and confusion with the ecosystem services approach', (2019) 651, *Science of the Total Environment*, 2432–2443, page 2433.

¹⁴⁴¹ Morales-Hidalgo D, Oswalt N Sand Somanathan E, 'Status and trends in global primary forest, protected areas, and areas designated for conservation of biodiversity from the Global Forest Resources Assessment 2015', (2015) 352, *Forest Ecology and Management*, 68–77, page 68.

The opportunities that protected areas give to people makes the management of such areas more effective.¹⁴⁴² New opportunities for managing protected areas will make this goal more achievable under the CBD and Sustainable Development Goals (SDGs). The supplementary agreement, namely the Nagoya Protocol¹⁴⁴³ signed (adopted 2010 and came into force 2014) under the CBD provides for the fair and equitable sharing of benefits that can arise from genetic resources. The Protocol goes further in Objective 20 stating that there is a need for development update and the use of well measured voluntary codes, guidelines and best practices. These standards and/or practices must be related to equal access and benefits sharing. Chapter 9 of the United Nations 2030 Agenda for Sustainable Development also focuses on the vision of protecting wildlife and other species around the world. In addition, protected areas are the mechanism for forest protection internationally and nationally.¹⁴⁴⁴

Forest protected areas have a central and global goal of conserving biodiversity.¹⁴⁴⁵ These forests are seen as contributors to broader SDGs that include climate change mitigation and adaptation, and the alleviation of poverty. With their given potential to advance socio-economic and ecological objectives, protected areas are now promoted as a well-recognised forest governance strategy.

These protected areas are protected under state, community, private and shared governance. State governance is usually controlled and recognised by laws and regulations set out by the governments with direct ownership.¹⁴⁴⁶ The duties to manage these areas are usually sub-delegated to private owner/s, local municipals/communities and NGOs. These types of protected areas has increased because of NGOs, corporate responsibility and incentives from charity organisations. The greater effort has been put forward to connect scientific information with decision-making, this has allowed private institutions and NGOs to play more substantive

¹⁴⁴² Mushkat R, *International environmental law and Asian values: Legal norms and cultural influences*, UBS Press, Vancouver, Toronto, (2004), page 70.

¹⁴⁴³ Nagoya Protocol on Access to genetic resources and the fair and equitable sharing of benefits from their utilization to the CBD, 12 October 2014, Objectives 4, 5, 6 and 7. See website on <https://www.cbd.int/abs/doc/protocol/nagoya-protocol-en.pdf>. Accessed March 6, 2020.

¹⁴⁴⁴ Worboys G L, 'Concept, purpose and challenges', in Worboys L G *et al (eds), Protected Area Governance and Management*, (2015), 9–42, ANU Press, Canberra, page 15.

¹⁴⁴⁵ Forest protected areas are PAs within any of the IUCN management categories that include substantial natural forest cover within their boundaries. See Roxanne Leberger *et al*, 'Global patterns of forest loss across IUCN categories of protected areas', 241 (2020), *Biological Conservation*, 1-8, page 1-2.

¹⁴⁴⁶ Abman R, 'Rule of Law and Avoided Deforestation from Protected Areas', (2018) 146, *Ecological Economics*, 282–289, page 282-3.

roles in the management of protected areas.¹⁴⁴⁷ The international understanding is that governments alone can not manage all protected areas in their territory.

There is now a community governance which is recognised as Indigenous and Community Conserved Areas (ICCAs). A common property protected area is a bounded area of land under legal or other regulations and policies regarding common property governance, for conservation and management for natural environment and improving local people's livelihoods and well-being.¹⁴⁴⁸ These are also managed for economic, ecological and cultural functions by indigenous people's communities. Thus, protected areas can be used for the alleviation of poverty amongst indigenous communities.¹⁴⁴⁹ The Principles and Guidelines for the Sustainable Use of Biodiversity (AAPG) in Addis Ababa encouraged states to protect the rights of indigenous people who live in protected areas and if such communities rely on their ecosystem services, it is understood that they are the custodians of such ecosystems and their resources.¹⁴⁵⁰ This type of governance usually has less government recognition or authority. Furthermore, shared governance is usually co-management between a variety of corporatives and stakeholders which can include government, local communities, the private sector or NGOs. This usually has levels of involvement, responsibility and decision-making.

Importantly, a network of protected areas is always essential for biodiversity conservation and ecosystem functions since this can allow for climate change resiliency.¹⁴⁵¹ There is also a need to integrate more common property protected areas since they help alleviate poverty. Common property protected areas are required since they extend protected areas; bridge gaps as biological corridors linking them as networks; and to protect habitats that are not highly productive all year round. This allows these protected areas to act as buffer zones and help vulnerable ecosystems and species.

However, the use of common property must not be used without proper consideration. Many protected areas are left without proper monitoring and reporting to state institutions because

¹⁴⁴⁷ Múnera C and van Kerkhoff L, 'Diversifying knowledge governance for climate adaptation in protected areas in Colombia', (2019) 94, *Environmental Science and Policy*, 39–48, page 39.

¹⁴⁴⁸ Kitamura K and Clapp A R, 'Common property protected areas: Community control in forest conservation', (2013) 34, *Land Use Policy*, 204– 212, page 206.

¹⁴⁴⁹ Miranda J J *et al*, 'Effects of Protected Areas on Forest Cover Change and Local Communities: Evidence from the Peruvian Amazon', (2016) 78, *World Development*, 288–307, page 288.

¹⁴⁵⁰ CBD: The Addis Ababa Principles and Guidelines for the Sustainable use of Biodiversity. See website on <https://www.cbd.int/sustainable/addis.shtml>. Accessed on 12 November 2018.

¹⁴⁵¹ Adam O Y and Eltayeb M A, 'Forestry decentralization and poverty alleviation: A review', (2016) 73, *Forest Policy and Economics*, 300–307, page 300-1.

they are now in the hands of local communities. Local communities usually do not have funds or expertise to conserve protected areas effectively. This can also lead to the alienation of animals and forest lands. The results can be increased deforestation or the protected area losing its ecosystem services.

The proper use of balanced integrated measures and common property between local communities and governments is therefore the best solution to proper and effective management of forest areas. However, common property protected areas can change the livelihoods and well-being of indigenous communities.¹⁴⁵² The UN or IUCN governance typology must integrate flexibility in its descriptions of common management property to allow for more recognition of other protected areas. This will also increase partners and players who want to be involved in common property management of protected areas.

Importantly, protected areas are considered effective for forest protection and preventing deforestation. The level of success however is mixed depending on finance, government power and corporative or stakeholder involvement. There has been debate on how this can be improved at an international level. Overall, protected areas have often been successful in recognising indigenous people's rights.

However, protected areas are threatened by illegal logging, increase in urban density, pollution and land conversion. The protected areas have also been affected by isolation, lack of proper management and survey.¹⁴⁵³ In addition, many parks are underfunded, with lack of sufficient funds to govern and enforce regulations. Forest protection has been affected by weak governance and a lack of enforcement in many developing countries which are experiencing uncontrolled deforestation.¹⁴⁵⁴ Developed countries also experience forest loss, this is due to lack of an effective enforcement regulation regime that is aimed at forest protection.

Protected areas are poorly defined as their mechanism has been elaborated by mainly NGOs and intergovernmental organisations. Whether states accept these standards set by private institutions is highly doubtful and unlikely. The efforts to recognise protected areas are there, but the implementation of the tools on the ground and at a practical level are poor. Local

¹⁴⁵² Ward C, Stringer C L and Holmes G, 'Protected area co-management and perceived livelihood impacts', (2018) 228, *Journal of Environmental Management*, 1–12, page 11.

¹⁴⁵³ Sobral-Souza T *et al*, 'Efficiency of protected areas in Amazon and Atlantic Forest conservation: A spatio-temporal view', (2018) 87, *Acta Oecologica*, 1–7, pages 1-3.

¹⁴⁵⁴ Rhodes R J *et al*, 'Assessing the effectiveness of regulation to protect threatened forests', (2017) 216, *Biological Conservation*, 33–42, page 33.

communities can easily be left out if the protected area deemed a national park becomes a highly profitable tourist destination.

In addition, the properties near the areas become expensive and local communities are driven out. There is thus a need to introduce proper zoning and spatial planning to reduce alienation of the local communities and also the ecosystems. The use of an integrated strategic regulatory approach that includes local communities and biodiversity conservation should be encouraged using an appropriate instrument.

Forests are the main habitats for species on land, however they are not protected. It is of concern how the international framework aims to reduce the loss of species and further encourages states to maintain the species numbers and variance without protecting their habitats. Moreover, research has always been on the analysis and effects of forest loss, thus regulation has focused mainly on reducing such effects and never elevating the importance or valuation of forests.

Recent evidence suggest that it might no longer be possible to plant new trees as suggested by the climate change framework as trees increase temperatures on the surface of the Earth. More planted trees, means more dead leaves on the land surface reducing evaporation, and dead leaves absorbing the heat from the sun. The use of protected areas might be an approach that can protect forests and maintain the effects of climate change already being experienced and sustaining the biogeochemical processes. A scholar¹⁴⁵⁵ argues that there is much caution needed when planting more trees as their interplay with the air and the chemicals they emit is not well-known.

The use of buffer zones around protected areas is used in South Africa and Australia to effectively protect biodiversity and human occupation in the surrounding areas.¹⁴⁵⁶ Municipals use spatial planning to prevent and delineate local communities from settling near protected areas as they might degrade sensitive ecosystems. There is a need for effective enforcement and monitoring if this regulatory tool is used in the management of land-usage. The use of regulation is important in zoning land for different uses. By the use of a map, municipals can highlight areas where local communities can settle while leaving the rest for other uses and importantly some as protected areas. The use of land-use planning and protected areas with

¹⁴⁵⁵ Popkin G, 'How much can forests fight climate change?', (2019) 565, *Nature*, 280-282, page 280-1.

¹⁴⁵⁶ Lima F C A E and Ranieri L E V, 'Land use planning around protected areas: Case studies in four state parks in the Atlantic forest region of southeastern Brazil', (2018) 71, *Land Use Policy*, 453–458, page 453.

effective tools for monitoring can reduce deforestation. The greater efforts and relationships between the local government and protected areas management are important in maintaining the boundaries of protected areas.¹⁴⁵⁷

The use of protected areas is increasing with more administrative procedures and efforts being applied to reduce deforestation. In areas where protected areas have been regulated by law, monitoring, education of local communities and reporting is present, these protected areas are highly successful and the rate of deforestation is low. However, protected areas may reduce greater efforts by all citizens since ownership and access can be problematic, whether in governments or local communities. If these efforts are integrated into a unitary process or tool, the initiatives are succeeding.¹⁴⁵⁸ Protected areas should never be isolated since they require conservation targets, methods of monitoring and also evaluation, if their conservation strategies are to be effective. The use of a pluralistic approach for evaluating conservation programmes can help reveal potential synergies which can tackle different objectives.¹⁴⁵⁹

In short, forest protected areas continue to increase, but efforts to make the regime more effective are lacking.¹⁴⁶⁰ The research on protected areas has also been poorly presented with case studies and comparative analysis from different countries and regions. This has caused much fragmentation of efforts and a diverse array of approaches in many different regions since there is no correlation in the studies. There is also a lack of political commitment in developing countries.¹⁴⁶¹ They are refusing to protect larger tracks of land or they refuse to allocate more funding for research and protection. The private corporations and NGOs have borne the financial burden; however the use of the common property seems to have provided some relief since they can also join their efforts with local communities. This has been important to allow those who are environmentally aware to use their efforts, other than leaving efforts in the hands of national governments. A step forward would be more recognition of protected areas in

¹⁴⁵⁷ Amin A *et al*, 'Neighborhood effects in the Brazilian Amazônia: Protected areas and deforestation', (2019) 93, *Journal of Environmental Economics and Management*, 272–288, page 273.

¹⁴⁵⁸ See note 1452, page 1.

¹⁴⁵⁹ Caro T *et al*, 'Assessing the effectiveness of protected areas: Paradoxes call for pluralism in evaluating conservation performance', (2009) 15, *Diversity and Distributions*, 178–182, page 178.

¹⁴⁶⁰ Miller C D and Nakamura S K, 'Protected areas and the sustainable governance of forest resources', (2018) 32, *Current Opinion in Environmental Sustainability*, 96–103, page 101.

¹⁴⁶¹ Watson J E M *et al*, 'The performance and potential of protected areas', (2014) 515, *Nature*, 67–73, page 67.

international instruments, better funding, enforcement and planning if protected areas are to live to their full potential.¹⁴⁶²

Nevertheless, protected areas can be an effective way to protect biodiversity, securing indigenous people's rights, and climate change adaptation and mitigation. Importantly, developing countries seem to commit to the idea of protected areas since they see a great potential in eco-tourism.¹⁴⁶³ Since they have a protective status, this makes protected areas an effective way to protect forests since they are free from destruction and human intervention and thus can continue their function for forest services for future generations.

4. Harnessing “Soft Laws”

Soft laws are rules and principles that are not binding, they are sometimes referred to as rules of conduct that may have practical effects.¹⁴⁶⁴ In forest governance, soft law has important functions of making the framework for forest protection, enforcing the new standards and opening channels for proper and effective public participation.¹⁴⁶⁵ Soft laws can be said to enable and enhance common knowledge in a particular field.¹⁴⁶⁶ It can act as a precursor for establishing ground for the binding obligations, thus enabling commitments at national level (a sort of peer pressure). Soft laws strengthen the implementation of hard laws by the art of persuasion.¹⁴⁶⁷ It makes the passing of ambitious rules possible since they are not binding.¹⁴⁶⁸ Therefore, soft laws are used to promulgate innovative principles which can be used in the future for effective forest protection.

¹⁴⁶² Ibid, page 67-9.

¹⁴⁶³ Blankespoor B, Dasgupta S and Wheeler D, 'Protected areas and deforestation: New results from high-resolution panel data', (2017) 41, *Natural Resources Forum*, 55–68, page 55.

¹⁴⁶⁴ Gluck P, 'Core components of the international forest regime complex', in Rayner J, Buck A and Katila P (eds), *Embracing complexity: Meeting the challenges of international forest governance*. A global assessment report. Prepared by the Global Forest Expert Panel on the International Forest Regime IUFRO World Series, (2010) 28. Vienna 1-172, page 39.

¹⁴⁶⁵ Akhtarkhavari A, *Global governance of the environment: Environmental principles and change in international law and politics*, Edward Elgar, Cheltenham, United Kingdom, (2010), 3-283, page 75.

¹⁴⁶⁶ Payne R, 'Persuasion, frames and norm construction', (2001) 7, *European Journal of International Relations*, page 37.

¹⁴⁶⁷ Klabbbers J, 'Reflections on soft international law in a privatized world', (2005) 16, *Finnish Yearbook of International Law*, page 314.

¹⁴⁶⁸ Ibid. Klabbbers explains that 'soft law functions to communicate information to individual actors through different dynamics of socialisation'. For persuasion compared to social influence in relation to soft laws, see also Flockhart T, "'Complex socialisation": A framework for the study of State Socialization', (2006) 12 (1), *European Journal of International Relations*, 89-118, page 89.

There have been many efforts to protect forests; many are in the soft laws, for example the Forest Principles under the Rio Earth Summit¹⁴⁶⁹; Chapter 11 of Agenda 21; proposal actions under the Intergovernmental Panel on Forests/Intergovernmental Forum on Forests, Johannesburg Declaration on Sustainable Development;¹⁴⁷⁰ and lastly the Millennium Development Goals. Moreover, soft laws in forest protection have been based on the NLBI and COPs/UN Decisions. The most important concept the NLBI brought was sustainable forest management in its soft law form. The NLBI tries to tie the important forest principles and concepts in one instrument. It has become an important soft law instrument on forest protection, although non-binding and states are not obligated to its principles.

The instrument has advocated for sustainable forest management and this concept has been adopted by many states. Sustainable forest management continues to recognize the socio-economic, ecological, cultural and human needs, thereby allowing for the sustainable use of forest resources.¹⁴⁷¹ It also requires present generations to use forest resources in sustainable ways that will not infringe the use and rights of future generations. Thus, the concept recognizes forest protection and sustainable socio-economic development.

Furthermore, the NLBI has strengthened the pillars of forest governance.¹⁴⁷² For once the NLBI brought the forest institutions together and laid out a plan for sustainable forest management. It has built strong pathways for dialogue and participation in forest debates.¹⁴⁷³ The NLBI brought a structure to help understand how forests can be protected. This has necessitated the process for decision-making and understanding forest's regulatory framework. Forest governance has been affected by weak institutions, however the making of the NLBI seems to have brought some framework structure and a common language in forest governance. This has helped states develop collective solutions, as this has made them realize the particular

¹⁴⁶⁹ Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992, Vol. I, Resolutions Adopted by the Conference (United Nations publication, Sales No. E.93.I.8 and corrigendum), resolution 1, annex III. See website on <https://www.un.org/esa/dsd/agenda21/Agenda%2021.pdf>. Accessed on March 6, 2020.

¹⁴⁷⁰ Report of the World Summit on Sustainable Development, Johannesburg, South Africa, 26 August–4 September 2002 (United Nations publication, Sales No. E.03.II.A.1 and corrigendum), chap. I, resolution 1, annex, and resolution 2, annex.

¹⁴⁷¹ See note 72, Principle 2 (b).

¹⁴⁷² See note 629, page 4.

¹⁴⁷³ See note 72, Principle 2 (d).

situation.¹⁴⁷⁴ A scholar¹⁴⁷⁵ points out that soft law ensures that there is a ‘common nomenclature and the implicit cognitive framework for understanding the problems and functioning of a particular situation’.

The main purpose of the NLBI was to strengthen political commitments and actions towards the effective implementation of sustainable forest management of all types of forests.¹⁴⁷⁶ This made the forests issue a global agenda that required urgent attention by states. The instrument also focused on the achievement of the agreed developmental goals that were set out internationally under the Millennium Development Goals. These included poverty eradication, enforcement of human rights and environmental stability. This also allowed a framework which provided for international co-operation and national action.

The NBLI was passed at the Seventh Session of the United Nations Forum on Forests on the 16-27 April 2007 in New York, United States of America (UNFF-7)¹⁴⁷⁷ by the UN General Assembly. The purpose of the NLBI is to strengthen political commitment and implement sustainable forest management at all levels of forests; enhance forest contributions to achieve an internationally agreed development goal of alleviating poverty; environmental sustainability; and improve national action, integration and co-operation.¹⁴⁷⁸ The main objectives of the NLBI is to promote sustainable forest management, conservation, preventing forest degradation, improving socio-economic and environmental needs, and increasing forest protected areas.¹⁴⁷⁹ It sets out these goals in a clear and transparent manner that is not vague and confusing, it also has a compact structure that is specific.¹⁴⁸⁰ It strengthens global forest governance and facilitates co-operation, integration and co-ordination. Due to the fact that the

¹⁴⁷⁴ Jacobsson K, ‘Soft regulation and the subtle transformation of States: The case of the EU Employment Policy’, (2004) 14 (4), *Journal of European Social Policy*, page 355.

¹⁴⁷⁵ Jacobsson K, ‘Between the deliberation and discipline: Soft governance in EU Employment Policy’, in Morth U (ed), *Soft law in governance and regulation: An interdisciplinary analysis*, (2004) 81, page 91.

¹⁴⁷⁶ See note 72, Principle Principle 6 (a).

¹⁴⁷⁷ See website on <https://documents-dds-ny.un.org/doc/UNDOC/GEN/N07/349/31/PDF/N0734931.pdf?OpenElement>. Accessed on 11 November 2018, page 21. See also <https://www.un.org/esa/forests/forum/previous-sessions/unff-7/index.html>. Accessed on 06 February 2020.

¹⁴⁷⁸ Wildburger C, ‘Overview of international policy instruments related to forests and their goals and tools’, in Rayner J, Buck A and Katila P (eds), *Embracing complexity: Meeting the challenges of international forest governance*. A global assessment report. Prepared by the Global Forest Expert Panel on the International Forest Regime IUFRO World Series, (2010) 28. Vienna 1-172, page 155.

¹⁴⁷⁹ See note 72, Principle 5, Global Objectives 1-4.

¹⁴⁸⁰ Kunzman K, ‘The Non-Legally Binding Instrument on Sustainable management of All Types of Forests-Towards a legal regime for Sustainable Forest Management?’, (2008) 9 (8), *German Law Journal*, 981-1006, page 1005.

forest framework was fragmented, the NLBI serves to galvanize co-operation between different countries and regions to help reduce deforestation and forest degradation.

Furthermore, the importance of this instrument is that it has a holistic approach on all aspects of management, conservation and social functions of all types of forests. It provides a checklist for national forest programmes aimed at achieving sustainable forest management.¹⁴⁸¹ The instrument is to be implemented into national forest development frameworks and directly linked to national development plans.¹⁴⁸² It is aimed at strengthening the cohesion, participation, dialogue, and ownership among stakeholders. In addition, the instrument has monitoring, evaluating and reporting procedures which are set out to states to enhance their progress on sustainable forest management.¹⁴⁸³

The Global Objectives of Forests (GOFs) of the instrument on forests are reducing deforestation around the world using sustainable forest management, increasing forest protection areas and preventing forest degradation.¹⁴⁸⁴ It is meant to enhance the livelihoods of local communities through socio-economic and ecological benefits from forests. The other objective is to mobilize financial resources for the implementation of sustainable forest management.

The instrument has a number of benefits. Some of those include that it is an overarching framework for the national development of forests; aims to improve political will and commitment in developing sustainable forest management; increases focus on forest protection from national development plans to international level; provides a framework for co-ordination of international and national forest actions; reduces fragmentation; and has tools for assessing progress of national sustainable forest management programmes and projects.¹⁴⁸⁵

Moreover, soft laws can help bring global focus on an issue that states do not agree on and never want to discuss. Discussion in the international arena has been squashed because developing countries do not see forests as resources of common heritage or global common. They would want to choose which concept they can use and are able to do this without any

¹⁴⁸¹ See note 72, Principle 6. General Assembly: Resolution adopted by the General Assembly on 17 December 2007. Sixty-second session, 31 January 2008. Non-legally binding instrument on all types of forests. See website on <http://www.undocs.org/A/res/62/98>. Accessed on 27 November 2018.

¹⁴⁸² Ibid, Principle 6 (a).

¹⁴⁸³ Ibid, Principle 8.

¹⁴⁸⁴ Ibid, Section IV, Global Objectives on Forests.

¹⁴⁸⁵ See website on <http://www.fao.org/3/a0970e/a0970e03.htm>. Accessed on 18 January 2021.

state interfering in their sovereignty. The developing countries do not view forests as a resource that demands equal sharing with countries outside their borders, let alone their continent. That is why soft law is important as it provides and clarifies principles and concepts for these nations without binding them with any obligation. With the help of soft laws, this helps countries to choose principles that are clear.¹⁴⁸⁶ Soft laws help stakeholders exchange views and current status without fear that they might be held liable.

Furthermore, soft law has helped sustainable forest management garner the political recognition amongst States. This usually helps also countries choose which programmes best suit their budgets. This also motivates stakeholders to continue funding and implementing different forest protection and poverty alleviation programmes. Soft laws also provide funders with the necessary projects which they can afford and help developing countries who want to start small projects annually to protect their forests. In addition, it helps NGOs and inter-governmental institutions to facilitate integration of programmes in states that do not want any obligation.

The NLBI also provides states with voluntary measures to help protect their forests. They also integrate these with strategies for sustainable development and poverty alleviation. Encouragement is also given for the consideration of the seven thematic elements of sustainable forest management and considers the criteria and indicators.¹⁴⁸⁷ The instrument also has requirements for the application of management tools in assessing the environmental impact of projects that are affecting forests.¹⁴⁸⁸ States are also encouraged to protect and support the use of traditional forest knowledge, including fair and equitable sharing of forest benefits.¹⁴⁸⁹

The values of the NLBI provide a practical framework for sustainable forest management and the achievement of GOFs. Furthermore, the NLBI reinforces the importance of the UNFF as a global deliberating body on international forest standards and policies. It offers a platform that recognizes co-ordination and co-operation between all sectors that affect forests.¹⁴⁹⁰ States are encouraged to create an enabling environment for the private sector, communities and

¹⁴⁸⁶ Boyle A E, 'Some reflections on the relationship of treaties and soft law', (1999) 48 (4), *International and Comparative Law Quarterly*, 901-13, page 902.

¹⁴⁸⁷ See note 72, Principle 6 (b-g).

¹⁴⁸⁸ *Ibid*, Principle 6 (c).

¹⁴⁸⁹ *Ibid*, Principle 6 (f).

¹⁴⁹⁰ *Ibid*, Principle 6 (k).

stakeholders to invest. There is also a need to educate and increase public awareness on the values of forests.

Furthermore, soft laws also improve national forest legislation, strengthen law enforcement and can promote good forest governance. They also increase public awareness on forest health and the effects of human activities on forest lands. Public awareness of forest functions has also made it possible to develop, maintain and expand a network of forest protected areas. Soft laws have strengthened the science contributions in researches that advance sustainable forest management and incorporating these researches or scientific expertise into forest protection policies and programmes.¹⁴⁹¹

In addition, the NLBI supports the education of local communities and the development of programmes that help reduce approaches that can affect forests negatively. This allows effective and active participation of local communities, stakeholders and forest owners in the implementation, assessment and development of national policies and programmes. The main benefit of soft laws is that they allow and encourage individuals and corporations to voluntarily implement instruments that improve sustainable forests and improving market transparency.¹⁴⁹²

In addition, the Millennium Development Goals (MDGs) unites states to a common global goal of reducing poverty.¹⁴⁹³ The MDGs are not binding and therefore also fall under soft laws. These goals help states realize that forests play a much larger role in alleviating poverty. Local communities collect firewood, tubers and fruits, hunt small animals, and use timber to build their houses, thus forests act as a safe net for reducing poverty in poor communities, thus recognition of community based forest protection areas usually recognizes the rights of local communities.

Forests also maintain clean water resources, protect agricultural soils and control soil erosion, these functions aid life of the local communities. There is a need for inter-sectoral co-ordination and co-operation in forest protection and poverty alleviation programmes. These programmes should be linked to land-use management and be implemented through rural development

¹⁴⁹¹ Shaffer C G and Pollack A M, 'Hard vs. Soft Law: Alternatives, Complements and Antagonists in International Governance', (2009) Vol. 94, *Minnesota Law Review*, 706-99, page 706-9.

¹⁴⁹² *Ibid*, page 780-99.

¹⁴⁹³ United Nations: Millennium Development Goals (MDGs). See website on <http://www.un.org/millenniumgoals/>. Accessed on 11 November 2018.

strategies. It is important to protect forests for social and economic functions and the ecosystem services which they provide.¹⁴⁹⁴

It must be stated that although the MDGs are and were important, they were achieved in 2015 which was their set-off date. That meant the SDGs took over from 2015-2030. The SDGs in Goal 15.2 state that by 2020 states need to have implemented and promoted sustainable forest management, reduce forest degradation and deforestation, and increase forest protected areas. They are also encouraged to mobilize funds to finance sustainable forest management and provide adequate incentives for advancing forest protection.

The value of soft laws and institutions should never be underestimated since they have put pressure on political and good faith obligations. Soft laws are important in the progressive and the development of hard laws. Importantly, soft laws are quicker and easier to negotiate, they also encourage broader participation and a collective action. Soft law has a direct influence on the behavior of states and private actors.¹⁴⁹⁵ In international environmental law, it has a complementary effect to the hard law. It is also seen as a provider of the consensus basis for the making of hard law.

5. Harnessing the benefits of the Sustainable Forest Management

The concept of sustainable forest management came from the notion of sustainable development that gained recognition worldwide in the late 1980s.¹⁴⁹⁶ Sustainable Forest Management (SFM)¹⁴⁹⁷ is well-known as the management of all forests in accordance with the principle of sustainability (sustainable development) as recognised by the NLBI. Sustainable development is aimed at balancing the socio-economic, cultural and ecological pillars. Furthermore, SFM is important since it can achieve and integrate benefits ranging from poverty alleviation, ecosystem protection and climate change mitigation. Sustainable forest management ensures there is ecological sustainability to allow ecosystems to function and a

¹⁴⁹⁴ Economic, social and environmental functions of forests. See website on <http://www.fao.org/3/i1594e/i1594e01.pdf>. Accessed on 16 January 2021.

¹⁴⁹⁵ See note 1391, page 10.

¹⁴⁹⁶ Sen Wang, 'One hundred faces of sustainable forest management', (2004) 6, *Forest Policy and Economics*, 205– 213, page 205.

¹⁴⁹⁷ FAO: Natural Forest Management. "A dynamic and evolving concept [that] aims to maintain and enhance the economic, social and environmental values of all types of forests, for the benefit of present and future generations". See website on <http://www.fao.org/forestry/sfm/85084/en/>. Accessed on March 6, 2020.

continuous support system for ecological life.¹⁴⁹⁸ Furthermore, sustainable forest management implementation allows for articulate aims, goals and interests in different scales of governance and socio-ecological contexts.¹⁴⁹⁹

The United Nations Conference on the Environment and Development of 1992 in Rio de Janeiro recognized the SFM internationally, through the Forest Principles. During the Conference, sustainable forest management was identified as a strategy for the conservation and economic development of forests worldwide. Sustainable forest management has been embraced by international organizations, NGOs, conservationists, corporations and consumers.¹⁵⁰⁰ Furthermore, the global, regional and national monitoring of the SFM has been implemented using a number of criteria and indicators. The Non-Legally Binding Instrument on All Types of Forests adopted by the United Nations General Assembly in 2007 recognized the promotion and implementation of the SFM.

The SFM has been defined by the FAO as use of forests in ways that maintains the ecosystem productivity and potential to fulfill present and future socio-economic, cultural and ecological functions. This is a balancing act between society's needs and demands, and the protection of forest ecosystem's health and diversity.¹⁵⁰¹ This is seen as a critical goal in alleviating poverty and biodiversity conservation. The goal is also to maintain the use of the forest services and products for present and future generations.

Forest managers are encouraged to sustainably manage forests by ensuring tangible ways on how to use forests for their benefits and productivity for the present and future generations. Forest managers must use different factors that can integrate the commercial values, ecological and local community's needs to enact sustainable forest regulations and policies.¹⁵⁰² This means looking for benefits of forests and effects of deforestation, and how this can affect a community. They must then consult corporations, stakeholders and the public or other parties

¹⁴⁹⁸ Kotwal C P *et al*, 'Ecological indicators: Imperative to sustainable forest management', (2008) 8, *Ecological Indicators*, 104–107, page 104.

¹⁴⁹⁹ Faggin M J, 'Institutional bricolage of Sustainable Forest Management implementation in rural settlements in Caatinga biome, Brazil', (2018) 12 (2), *International Journal of the Commons*, 275–299, page 275.

¹⁵⁰⁰ Brandt S J, Nolte C and Agrawal A, 'Deforestation and timber production in Congo after implementation of sustainable forest management policy', (2016) 52, *Land Use Policy*, 15–22, page 15-6.

¹⁵⁰¹ Barik G M *et al*, 'Improved landslide susceptibility prediction for sustainable forest management in an altered climate', (2017) 230, *Engineering Geology*, 104–117, page 105.

¹⁵⁰² Jafari A *et al*, 'Assessing the sustainability of community forest management: A case study from Iran', (2018) 96, *Forest Policy and Economics*, 1–8, page 1-2.

that might be interested in the sustainable management of forests when enacting legislations. Furthermore, they must allow for public participation in their decisions.

The FAO has also published a set of criteria and indicators for the implementation and evaluation of sustainable development. These tools define sustainable forest management. They are also used for monitoring as they can be used to set conditions on the implementation and use of sustainable forest management. With time these tools can also change, thus setting the most possible goal for implementing sustainable forest management.¹⁵⁰³

These tools have also been recognized under the ITTO which regulates the commercial use of timber. There are also different thematic areas that have been recognized by the ITTO and the FAO. They have collaborated on efforts to collect data and report information to ensure that there is proper monitoring of sustainable forest management. Sustainable forest management at social level contributes to poverty alleviation and at environmental level contributes to climate change mitigation and adaptation, biodiversity and soil conservation. In addition, sustainable forest development means increasing the benefits from forests and food to meet the demands of local communities, but also conserving and maintaining forest services and ecosystems for the present and future generational benefits.¹⁵⁰⁴

Moreover, FAO tries to advise countries on their policies and provides supporting capacity building using field projects, training, seminars and public lectures. The Organization has helped countries define and recognize the principles of sustainable forest management. It also monitors the process and approaches in many states so that they can achieve sustainable goals. FAO has been identifying and promoting various innovative, multi-purpose forest management approaches and other techniques that can help mitigate and adapt climate change, the sustainable use of wood and timber, reduce pests/fires, and natural disasters. FAO works at national, regional and global levels by collaborative partnerships to solve forest-related issues. The description of the sustainable forest management approach and tools by the UN and FAO makes it clear that its purpose will change over time to maintain the value of forests. Thus, sustainable forest management has become a multidimensional and multipurpose concept that recognizes the multiple functions of forests.¹⁵⁰⁵

¹⁵⁰³ See website on <http://www.fao.org/3/w4345e/w4345e0c.htm>. Accessed on 18 January 2021.

¹⁵⁰⁴ See website on <http://www.fao.org/forestry/sfm/85084/en/>. Accessed on 18 January 2021.

¹⁵⁰⁵ Ibid.

Furthermore, sustainable forest management is used to negotiate trade-offs and balancing the interests in different ecological and socio-economic conditions, this is based on participatory planning methods and implementation of sustainable development. The idea is to reduce conflicts, use of traditional knowledge, innovative technology and effective forest management systems. Countries with good governance are also encouraged to define and implement national goals of sustainable forest management in environmental regulations, policies and programmes. However, the importance of sustainable forest management is that it is responsive and adaptable to socio-economic and ecological changes, needs and knowledge. Nonetheless, it is the economic dimension of sustainable development that continues to overpower and negatively affect the other social and environmental dimensions.

In 2005, the Global Forest Resources Assessment¹⁵⁰⁶ presented the seven thematic areas on the criteria and indicators for sustainable development, as follows¹⁵⁰⁷ namely [T]he seven criteria are (1) conservation of biological diversity; (2) maintenance of productive capacity of productive ecosystems; (3) maintenance of forest ecosystem health and vitality; (4) conservation and maintenance of soil and water resources; (5) maintenance of forest contribution to carbon cycles; (6) maintenance and enhancement of long-term socio-economic benefits to meet the needs of societies and (7) development of legal, institutional and economic framework for forest conservation and sustainable management. Similar criteria and indicators for measuring and assessing sustainable forest management were developed through the Helsinki Process in Europe. Similar efforts by the International Tropical Timber Organization (ITTO) are designed to enhance sustainable forest management in tropical regions.¹⁵⁰⁸

In Europe, sustainable forest management was taken into account during the second Ministerial Conference on the Protection of Forests in Helsinki (1993), when sustainable forest management was adopted and set as a binding resolution at the political level.¹⁵⁰⁹ The meaning of sustainable forest management was expanded to: - ‘*stewardship and use of forests and forest*

¹⁵⁰⁶ See Food and Agriculture Organization (FAO), 2006, Global forest resources assessment 2005—Progress towards sustainable forest management, FAO Forestry Paper 147, pages 120-30. See website on <http://www.fao.org/3/A0400E/A0400E00.pdf>. Accessed on March 6, 2020.

¹⁵⁰⁷ Hickey G, ‘Evaluating sustainable forest management’, (2008) 8, *Ecological Indicators*, 109–114, page 110.

¹⁵⁰⁸ Siry P J *et al*, ‘Sustainable forest management: Global trends and opportunities’, (2005) 7, *Forest Policy and Economics*, 551– 561, page 551-2.

¹⁵⁰⁹ Wolfslehner B, Vacik H and Lexer J M, ‘Application of the analytic network process in multi-criteria analysis of sustainable forest management’, (2005) 207, *Forest Ecology and Management*, 157–170, page 158.

land in a way, and at a rate, that maintains their biodiversity, productivity, generation capacity, vitality, and their potential to fulfill now and in the future, relevant ecological, economic, and social functions at local, national, and global levels’’¹⁵¹⁰. However, because that concept can mean anything, it can be expanded indefinitely. Of importance, the Madrid EU Ministerial Conferences, this was focused on the results of the Oslo Conference and the work of the Intergovernmental Negotiating Committee for a forest legally binding agreement on European forests. It has given birth to the ‘ordinary’ Forest European Conference process which was important at the time. However, not much effort has been put since then on these Conferences. At the moment there is no say how this issue can be resolved from the European Ministerial Conference.

The use of criteria and indicators has been due to the demand to evaluate forest management strategies, regimes and alternatives regarding their specific benefits and sustainability. This criterion is a principle or standard on how to judge, and the indicators are any variables of the forest ecosystem used to infer its status of a particular criterion.¹⁵¹¹ The criteria and indicators can be used to collect and report data or information within a forest ecosystem. These criteria and indicators have been developed in governments, research organisations, NGOs and private companies. This has been through the work of the Montreal Process¹⁵¹², Forest Europe¹⁵¹³, FAO and the ITTO. However, they are usually characterized by lack of knowledge, missing information, feedbacks, dependencies and uncertainties.

Furthermore, forest certification has provided an independent, third party verification of adherence on a defined set of management tools and standards that can promote and measure sustainable forest management.¹⁵¹⁴ A scholar¹⁵¹⁵ states that the criteria and indicators have become a powerful tool for sustainable forest management implementation and the assessment of sustainability. These criteria and indicators are used for improving forest biological

¹⁵¹⁰ See Ministerial conference on the protection of forest in Europe, Helsinki, (1993). See website <https://foresteurope.org/ministerial-conferences/>. Accessed on March 6, 2020.

¹⁵¹¹ Lammerts van Bueren, E.M. and Blom, E.M. *Hierarchical framework for the formulation of sustainable forest management standards*, (1997), Veenmann Drukkers, page 15-26.

¹⁵¹² Annex F: Criteria and Indicators for the Conservation and Sustainable Management of Temperate and Boreal Forests. The Montréal Process Third Edition, December (2007). See website on <https://www.montrealprocess.org/documents/meetings/working/an-6.pdf>. Accessed on March 6, 2020.

¹⁵¹³ Ministerial Conference on the Protection of Forests in Europe, (2007). See website on <https://foresteurope.org/ministerial-conferences/>. Accessed on March 6, 2020.

¹⁵¹⁴ Martín-Fernandez S and Martínez-Falero E, ‘Sustainability assessment in forest management based on individual preferences’, (2018) 206, *Journal of Environmental Management*, 482-489, page 482.

¹⁵¹⁵ Ibid.

diversity, maintenance of forest ecosystem health, social aspects of forest ecosystems and productive capacity. Moreover, the opinion of various stakeholders is important to make the assessment for sustainability more acceptable and applicable to the general society. These stakeholders can be forest owners, government forest managers, private individuals, community leaders and corporations.

The criteria and indicators try to identify relevant aspects that can be covered by forest management unit levels and attempt to define how sustainable development can be effectively operational. The purpose of the criteria and indicators is also for monitoring of progress towards the goal of sustainable forest management, and also allow governments and international organisations to monitor and report on the status of sustainable forest management in any country or region.¹⁵¹⁶ Thus, sustainable forest management is the production of forest services for the present and future generations. Forest sustainability is based on ecosystems having the potential to recycle themselves and that economic activity and social perceptions that define human behaviour and interactions with the natural environment are the choices that can be modified to ensure long-term productivity and the health of these ecosystems. In short, sustainable forest management tries to match the increase in demands of human population, whilst maintaining healthy forest ecological functions.¹⁵¹⁷

The criteria and indicators for SFM share some similarities with the forest certification, but there are also considerable differences between the concepts. Both concepts try to promote sustainable forest management, incorporate elements of sustainability and are based on data collection and evidence. However, the differences appear in the criteria and indicators application and certification systems in that the scales, use, user groups and purpose are different.

In addition, forest certification was recognised in the early 1990s for the purpose of reducing deforestation, forest degradation and the promotion of conservation for biodiversity.¹⁵¹⁸ It has been promoted by government groups to promote sustainable forest management with the criteria and indicators. These criteria and indicators are mainly for the national levels to monitor

¹⁵¹⁶ Rametsteiner E and Simula M, 'Forest certification—an instrument to promote sustainable forest management?', (2003) 67 (1), *Journal of Environmental Management*, 87-98, page 89.

¹⁵¹⁷ MacDicken G K *et al*, 'Global progress toward sustainable forest management', (2015) 352, *Forest Ecology and Management*, 47–56, page 47.

¹⁵¹⁸ See note 1516, page 87.

and describe the status and the followed trends in forests. The standards used in handing out forest schemes are diverse in that they can be certification schemes, licences or permits. With these tools, governments can control the numbers of corporations, private individuals or communities who can legally cut down trees, also the type of tools and demarcated areas for legal logging. These are usually equal to legal requirements and standards for cutting down trees.

In addition, there are quality audits of the standards and independent audits taken by the forest managers to improve forest management. Forest certification has embraced socio-economic, ecological and social issues of forest ecosystems worldwide. Forest certification is also aimed at policy makers and the market-to-consumers to manage the forests in a sustainable way since they need their goods and resources.¹⁵¹⁹

Forest certification is the process through which a certification body assesses forest management and its quality to a set of standards that are predetermined requirements. The certifier will then write an assurance that the product or process has conformed to the set requirements which are set up as standards. Its purpose is to reduce biodiversity loss and improve the quality of forest management in areas in which timber is sourced.¹⁵²⁰

Forest certification has catered for many different interests around the world. In industry and trade, it has been an instrument for environmental marketing and market access.¹⁵²¹ For the consumers, it gives them information on the impact of the forest products which they purchase. Furthermore, for the forest managers and owners, it has been a tool to market access and gain market advantage. As for national governments, it is a policy instrument to enhance and promote sustainable forest management and the sustainable consumption patterns of forest resources. For the environment movement, it is about campaigning and influencing how forests are managed to conserve or maintain biodiversity.¹⁵²²

¹⁵¹⁹ Ewald Rametsteiner and Markku Simula, 'Forest certification—an instrument to promote sustainable forest management?', 67 (2003), *Journal of Environmental Management*, 87–98, page 87-90.

¹⁵²⁰ Abhishek Chaudhary *et al*, 'Impact of Forest Management on Species Richness: Global Meta-Analysis and Economic Trade-Offs', 6, Article number: 23954 (2016), *Scientific Reports*, 1-10, page 1-4.

¹⁵²¹ See note 1516, page 89.

¹⁵²² Robyn Gulliver; Kelly S. Fielding and Winnifred Louis, 'Understanding the Outcomes of Climate Change Campaigns in the Australian Environmental Movement in Special Collection: Section: Climate Change Mitigation and Adaptation', 3 (1) (2019), *Case Studies in the Environment*, 1–9, page 1-4.

The main difference between criteria and indicators and forest certification are that criteria and indicators are mainly at national level whilst forest certification is at sub-national level. Criteria and indicators are mainly used to share information through a descriptive approach, whilst forest certification is a prescriptive approach used to establish proof of sustainable forest management. Finally, criteria and indicators are mainly used by national governments and policy-makers, whilst forest certification is used by market and commercial players.¹⁵²³

In addition, forest certification is a market driven tool. Its ideas are that consumers, who are concerned with deforestation, will prefer to buy timber products from sustainably managed forests. The process of forest certification recognises forests and products coming from them. The owner of the products can certify her/his products using public standards and, once they are verified for compliance, the owner obtains the right to label her/his products and finally sale. The verification serves as a label to consumers that this product was sourced from a forest that meets the public standard, which are usually environmental and social standards. The deterrence mechanism has been based on the fear of losing market access for product owners. This has resulted in decision-makers in forest management adopting a holistic concept and approach to sustainable forest management. Forest certification seems to have a positive impact on sustainable forest management and biodiversity conservation.¹⁵²⁴ Thus, forest certification is more supportive of the wider scope of sustainable forest management.¹⁵²⁵

The most important element of the forest certification system has been the forest certification standards. These standards have largely been developed outside the well-established standard setting bodies and the recognised private bodies' operational schemes and programmes. They have been developed through a multi-stakeholder approach, and these characteristics of each standard have been guided in part by the composition of standards development teams. The forest certification system has an inbuilt element, the further the development it also moves further to protect forests and towards convergence of differences.

There is however a need to develop a global set of compatible criteria and indicators. Importantly, there is a need to set up structures drawing on theory, rather than from case studies

¹⁵²³ See website on <http://www.fao.org/3/w4345e/w4345e0c.htm>. Accessed on 18 January 2021.

¹⁵²⁴ See note 1516, page 96.

¹⁵²⁵ See website on <http://www.fao.org/sustainable-forest-management/toolbox/modules/forest-certification/further-learning/en/?type=111>. Accessed on 18 January 2021.

and lists of issues. The further development of criteria and indicators will be welcome as this will increase the conceptual compatibility of various sets due to future developments. This will be important for regionally adapted and globally certification standards.

The certification standards and the criteria and indicators have a broad scope that tries to address environmental aspects, health, employment, resource use rights and labour relations. All these elements are part of sustainability, which is also now considered to be part of sustainable forest management in international forest policy. Forest certification can also be used in different incentive driven approaches, these can be used in different applications. It has also produced a verification procedure that is applicable in the forestry sector. There are market oriented certification, verification of forest management requirements, verification of legal compliance, and certification of the sequestration of carbon. However, a comprehensive development strategy is sometimes required for an effective system that recognises sustainable forest management, thus certification and labelling will be useful in complementary roles. The more holistic impact of forest certification seems to lie in the function of promoting sustainable forest management.¹⁵²⁶

Based on the current evidence, forest certification performance has been based and defined by local situations in order to be able to conduct an actual forest certification audit. That is, at a national level a verification and recognition system for good forest certification would need stringent core elements, a sufficient and adequate basis for comparison of different standards against established or recognised quality criteria. Forest certifications are also diverse and they reflect the diversity of stakeholder views and the local conditions. The requirements are that the certification scheme must be in accordance with national laws and ensure that the requirements for the relevant regulations of the country are being followed.

Forest governance can be improved by forest ownership. Forest ownership can improve forest protection especially in the private sector. In governments (public) normally there is a shortage of staff and lack of expertise when it comes to forest management programmes.¹⁵²⁷ In addition, private ownership describes a scenario whereby corporations, NGOs and individuals own and manage forests. They have a right to own and possess the forest area. Forest ownership implies that a person has land tenure rights to the forest area. These tenure rights are the ability to

¹⁵²⁶ See note 1516 page 97.

¹⁵²⁷ See note 1508.

control, use, acquire and dispose of a property. They are fundamental in determining how forest areas can and will be managed and protected. Tenure rights can be non-exclusive, but might imply control over forest lands and areas. They also affect how resources are allocated to protect forests. That is, a private forest owner can employ various methods to protect her/his forest area and can also employ forest rangers as s/he sees fit. Governments usually employ their own forest rangers, management and develop their own plans.

Furthermore, private owners can even hire private security officers or scientists to make sure their forests are being protected effectively. It is possible for the government to co-share powers with a private entity or to delegate its powers to a private entity. Public forests are usually kept for public good for the local communities, whilst private forests can be fenced-off and protected by the owners for private use only. The level of protection regarding private forest ownership is usually higher than the measures which the government would usually consider.¹⁵²⁸ However, this depends on international trading and environmental laws – the legality of timber trading affects forests under private owners.¹⁵²⁹

The majority of forests are owned by the government, and deforestation and decline primarily takes place in these forests. It is not just bad governance that has affected public forests, but also other issues. For example, the government also owns a majority of forest lands, this has led to many forests being abandoned since governments have public duties that are also a burden. In developed countries where forest governance is strong, the opposite is correct.¹⁵³⁰

However, governments have a strong work force and they have put stringent measures in place to protect their forests. Governments are also well-known for converting forest lands into infrastructural development projects. This can be to promote social and developmental goals which are caused by an increase in the demand for social welfare. Furthermore, in developing countries deforestation in public forests is linked to corruption¹⁵³¹ and poor government

¹⁵²⁸ Bouriaud L *et al*, 'How private are Europe's private forests? A comparative property rights analysis', Volume 76, July 2018, *Land Use Policy*, pages 535-552, page 549-551.

¹⁵²⁹ *Ibid*.

¹⁵³⁰ See website on <http://www.fao.org/sustainable-forest-management/toolbox/modules/forest-governance/basic-knowledge/en/?type=111>. Accessed on 18 January 2021.

¹⁵³¹ As above 173.

policies.¹⁵³² There is a need to examine the role that governments play in public forests, policies and the management approaches which they implement.

There must also be research on their success or failures in using the sustainable forest management approach.¹⁵³³ In times when the government lacks staff and resources, community and private ownership should also give a hand and step in with their resources. However, when changing forest ownership (public to private ownership) this process must be more than transfer of property rights. It must be about improving the quality of sustainable forest management. The main challenge in many countries has been the lack of an effective forest legal system, institutional and socio-economic framework to protect forests.¹⁵³⁴

Sustainable forest management has been recognised by the UNFCCC, CBD, UNCCD and lately the UNFF.¹⁵³⁵ This concept has been recognised as the basis of mitigating climate change, conservation of biodiversity and reducing desertification. Countries such as Spain, South Africa, Australia, Brazil, the United States of America and China have been working tirelessly to incorporate sustainable forest management practices into their national legislations. However, the lack of a binding instrument on forests over the decades has hindered the development of the approach. Nationally, countries have been trying to define it, but as per usual their efforts are not collective and the use of the approach has been disjointed. This has led to ill-defined elements and indicators being used by different countries. The role of sustainable forest management has been to explore the benefits of soft laws and policies due to the lack of a legally binding forest instrument.

6. Benefits of International Laws

There are various functions of international environmental law that have been discussed in the last decade and this has been mainly through the analysis of MEAs and their functions. There is a growing need for an instrument in forest protection because the loss of biodiversity is high.¹⁵³⁶ MEAs are mostly set up with binding obligations – secretariats are established as ways

¹⁵³² See section 168.

¹⁵³³ Ibid.

¹⁵³⁴ See above on 174. See also Mo Zhou, 'Adapting sustainable forest management to climate policy uncertainty: A conceptual framework', (2015) 56, *Forest Policy and Economics*, 66–74, page 66.

¹⁵³⁵ Faggin M J and Behagel H J, 'Translating Sustainable Forest Management from the global to the domestic sphere: The case of Brazil', (2017) 85, *Forest Policy and Economics*, 22–31, page 22.

¹⁵³⁶ See above 68.

of sharing knowledge and scientific innovations, and contact points for communication and contact, duties between developing and developed countries, and lastly how to attain funds for forest protection programmes and projects.¹⁵³⁷ There are benefits of having a binding stand-alone instrument for forest protection.

Binding international instruments have obligations that are enforceable under international law. From ‘soft laws’, this makes ‘hard laws’ to Parties that have ratified instruments and are responsible as per the obligations agreed. The aim of international laws is to fill the gaps, making elaborate recent research, designing treaties, improving social norms, campaigning for recognition and effective policy implementation. Furthermore, international environmental law is being used to campaign and improve environmental protection in countries that have refused to sign instruments (mainly China and the USA). It is being used to raise public awareness in different environmental fields to mitigate and adapt climate change, and reduce loss of biodiversity. Moreover, international environmental law is also used to solve environmental disputes amongst states, government institutions, corporations and individuals.¹⁵³⁸ It also helps judges and lawyers settle environmental disputes by clarifying environmental harms and crimes, settlements, principles and concepts (interpretation powers).¹⁵³⁹

The international instruments bring cross-sectorial integration because most of the environmental issues emanate from other sectors such as the industrial and manufacturing, human settlement and agriculture sectors. A binding forest instrument would also allow for the use of environmentally friendly technologies in the agriculture sector as it is the one sector that has been identified as causing more deforestation and forest degradation than other sectors. This increases co-ordination, integration and co-operation in different sectors.¹⁵⁴⁰ Co-operation with other sectors can also improve the reporting mechanism to know the current standards being implemented and rates of deforestation in different continents and regions. Furthermore, the forest governance framework is weak and fragmented, a binding instrument would redesign

¹⁵³⁷ Fitzmaurice M, Tanzi A and Papantoniou A, ‘Introduction to Volume V’, in Fitzmaurice M, Tanzi A and Papantoniou A (eds), *Multilateral Environmental Treaties*, Elgar Encyclopedia of Environmental Law, United Kingdom, (2017), 1-4, page 1.

¹⁵³⁸ Rest A, ‘The indispensability of an international environmental court’, (1998) 7 (1), *RECIEL*, 63-67, page 64.

¹⁵³⁹ Khalasthi R, ‘International environmental law in the courts of the United Kingdom’, (1999) 8 (3), *RECIEL*, 301- 308, page 301-2.

¹⁵⁴⁰ Sands P *et al*, *Principles of international environmental law*, (2012), 3rd Edition, Cambridge University Press, UK, page 10.

the governance institutions and resuscitate the regime so that it becomes effective in implementing forest principles and laws.

Much of the problems in forest protection on the international arena is how states and regions fail to recognise and value forests. The different functions of forests and the stage of the country (whether developing or developed) seem to matter the most. There is a need to raise public awareness that even if forests in different regions have different functions, this will not mean their values are less.¹⁵⁴¹

In addition, international environmental instruments provide for mechanism on how funds can be obtained by developing countries to kick start their forest protection programmes. This will also help in encouraging the *modus operandi* on common but differentiation of duties between developed and developing countries. Furthermore, this helps in globalising forest protection knowledge, understanding and sharing between developing and developed countries. Importantly, co-operation and integration is also required with the UNFCCC and the CBD to reduce deforestation and use up-to-date standards that are linked to climate change mitigation and adaptation in the Paris Agreement.

International environmental law is important because it has binding obligations on states to prevent actions that are considered environmental harmful.¹⁵⁴² International laws allows states to make national laws which govern their citizens.¹⁵⁴³ It prevents states from acting and conducting their business in a manner that degrades the environment.¹⁵⁴⁴ This also brings moral obligations to many states and helps reduce such conducts. The obligations set out in MEAs have articles that relate to states promulgating their own national laws, policies and regulations. These obligation are especially important because they are enforceable and breaches by states can lead to different sanctions.¹⁵⁴⁵ The ratification of a binding instrument by a state shows commitment and political will, this helps in deterring (compliance powers) individuals,

¹⁵⁴¹ Rousseau S & Deschacht N, 'Public Awareness of Nature and the Environment during the COVID-19 Crisis', (76) (2020), *Environmental and Resource Economics*, 1149–1159, page 1149-1152. See also Sang Seop Lim, John L.Innes and Michael Meitner, 'Public awareness of aesthetic and other forest values associated with sustainable forest management: A cross-cultural comparison among the public in four countries', Volume 150, 1 March 2015, *Journal of Environmental Management*, 243-249, page 243-6.

¹⁵⁴² Lang W, 'UN-Principles and International environmental law', (1999) 3, *Max Planck UNYB*, 157-172, page 171-2.

¹⁵⁴³ Nollkaemper A, 'Judicial application of international environmental law in the Netherlands', (1998) 7 (1), *RECIEL*, 40-46, page 46.

¹⁵⁴⁴ See note 1542, page 158.

¹⁵⁴⁵ Kiss A and Shelton D, 'Systems analysis of international law: A methodology inquiry', (1986) 17, *NYIL*, page 45.

companies or corporations that are involved in illegal deforestation activities to move away from those states.¹⁵⁴⁶

The most valuable elements that international environment instrument brings is that of a framework structure and the definition of concepts and principles.¹⁵⁴⁷ After the Rio Declaration and the Forest Principles were enacted, there has not been any further follow up. There has been lack of definition and development of SFM which was the guiding principle of forest conservation programmes under the CBD. This principle has also been left out in many programmes under the climate change and biodiversity regimes.

There is a need to integrate and co-ordinate these forest principles with many of the new principles that are being written in the Paris Agreement. In addition, the definition of principles and concepts brings consistency and uniformity in forest protection projects and these help in state co-operation which is required in transboundary forests.¹⁵⁴⁸ The instrument will also define the duties of the secretariat and develop contact points where research data will be kept and analysed. This will be useful in evaluating how forests are performing, better methods of forest protection and the activities that decrease the chances of deforestation, thus, helping to identify how forests can be protected better and solutions can be implemented quicker.

Currently, within the EU they are using administrative, civil and criminal sanctions which is not uniform amongst the Member States. In the EU, they also use strict and corporate liability, this is much more advanced than developing countries in Africa. In Africa –with exception of South Africa, Uganda and Kenya– these tools are in discord and the use of criminal sanctions is seen as over prosecution in most developing countries. Environmental harm does not have any moral bearing in Africa, it is usually accompanied warnings and fines. In Africa, administrative sanctions are rarely used since most of the public officials or government institutions do not have funds or expertise to research the environmental harms as also the economic consequences of administrative sanctions to business and markets. The instrument will have to bring about change in addressing the control and compliance tools needed to address forest deforestation and forest degradation.¹⁵⁴⁹

¹⁵⁴⁶ Mackenzie P C, 'Lessons from Forestry for International Environmental Law', (2012) 21 (2), *RECIEL*, 114-126, page 117.

¹⁵⁴⁷ Rothwell R D and Boer B, 'The influence of international environmental law on Australian Courts', (1998) 7 (1), *RECIEL*, 32-39, page 37-8.

¹⁵⁴⁸ *Ibid.*

¹⁵⁴⁹ See note 1546, page 124.

This has been fully recognised in the cyanide poisoning of elephants in Hwange National Park (Zimbabwe - 2015).¹⁵⁵⁰ The government (Ministry of Environmental Affairs) did not understand what was taking place, the remedy was slow, few perpetrators were caught (some even released without being charged) and the the sanctions for many did not offer any deterrence. Furthermore, the remedy that was offered was not enough to prevent further deaths of the elephants as the deaths continued. This shows a lack of understanding of environmental harms and lack of effective control and compliance mechanisms to prevent environmental harms in developing countries. However, the promulgation of a forest instrument will bring about obligations that will result in recognising and enforcing clear and precise control and compliance tools. Thus, there is an inadequate focus on forest issues at the moment, this is shown by disjointed efforts at the international level and the rate of deforestation in different regions.

There is no instrument at the moment that protects the socio-economic and ecological functions of forests. The instruments already given on the international arena fail to realise that forests are an ecosystem with various functions such as climate change mitigation and biodiversity conservation. To state clearly forest climate change mitigation role is just one in many functions, it is an entire ecosystem which requires proper valuation and protection. The ecosystem approach is not being used effectively in forest governance because it has never been clear or explicit and is ill-defined on forest protection issues.¹⁵⁵¹

An instrument for forest protection will advocate for forests and will bring about research and greater understanding of forest instruments. Furthermore, such an instrument would bring research and understanding between forests and other sectors, for example trade and human rights. This will help transpose all of the principles and concepts that have been mentioned in different fields that are concerning to forest protection. That is, this process can help absorb, research and discover new concepts and principles that work better in protecting forests, thus covering the gaps in forest protection.¹⁵⁵²

¹⁵⁵⁰ *Associated Press in Harare, Zimbabwe*, Another 22 elephants poisoned with cyanide in Zimbabwe reserve. See The Guardian UK, <https://www.theguardian.com/world/2015/oct/26/22-more-elephants-poisoned-cyanide-zimbabwe-reserve>. Accessed on 12 November 2018.

¹⁵⁵¹ See website on <http://www.fao.org/3/XII/1030-B4.htm>. Accessed on 18 January 2021.

¹⁵⁵² The climate change and biodiversity regime are now far advanced as COPs are held each year. New concepts and approaches are being identified and Decisions are being made binding. This has brought compactness and understanding in these fields, this also has clarified duties amongst States as the interpretation of the UNFCCC and CBD continue. In the forest protection however, the case has not been the same, as such efforts have not taken place.

Moreover, international law is usually promulgated at an international level, however it helps states modify and enact new national laws, policies and regulations.¹⁵⁵³ The great asset of international law is that it trickles down to domestic laws this will help in national forest protection.¹⁵⁵⁴ That is, states will have to introduce new measures as set up by the binding instrument which they have ratified.¹⁵⁵⁵ This brings uniformity and common legal standards from international to national level to govern forest protection. The promulgation of domestic laws brings about public awareness and participation as they are the pillars of democracy in many states.¹⁵⁵⁶ This will improve public and community knowledge and how people value or perceive forests.

The use of protected areas needs to be elevated in a binding instrument as this can protect the remaining forests. The use of land-use management tools such as regulation and spatial planning tools can help reduce deforestation. Zoning of activities in provincial and local governments needs to be recognised by a binding instrument as this can reduce human activities that can lead to deforestation and forest degradation in forest protected areas.¹⁵⁵⁷

Furthermore, there is a need to re-introduce and re-invigorate the EIA in forest areas, this will help prevent and minimise the chances of environmental degradation. Thus, bring about structural integration of forests into the climate change and biological diversity regime. Importantly, forests are not just trees, there is worthy abundance of species that seek refuge. These animals can be in abundance, threatened or near to extinction. By protecting forests, this is a way of making them thrive and improve in population numbers, these species can be plants, animals or both as forest protection.

In addition, forests are also seen as safe net for indigenous communities that gather fruits and hunt smaller animals for bushmeat. This has become a human rights issue because if the rate of deforestation keeps on rising or remains at least constant, this will mean that these communities will have to move to other areas.¹⁵⁵⁸ They usually seek small fertile lands to

¹⁵⁵³ Trouwborst A, 'The Precautionary Principle in General International Law: Combating the Babylonian Confusion', (2007) 16 (2), *RECIEL*, 186-195, pages 186-88.

¹⁵⁵⁴ See Bernstein S and Cashore B, 'Complex global governance and domestic policies: Four pathways of influence', (2012) 88 (3), *International Affairs*, page 585–604.

¹⁵⁵⁵ Currie D Whales, 'Sustainability and International Environmental Governance', (2007) 16 (1), *RECIEL*, 45-57, page 45.

¹⁵⁵⁶ See note 1546, page 123.

¹⁵⁵⁷ Miriam Hortas-Rico and Miguel Gómez-Antonio, 'Expansionary zoning and the strategic behavior of local governments. Evidence from Spain', Fedea, page 1-3. See website on

<https://documentos.fedea.net/pubs/eee/eee2017-05.pdf>. Accessed on 18 January 2021.

¹⁵⁵⁸ See note 1547, page 33.

cultivate and a water source. The instrument must introduce a fund to help indigenous communities find better environmentally friendly technology.

Furthermore, there is need to encourage developing states to find better energy sources (such as solar energy) than using firewood. The recognition of indigenous rights will also secure tenure land issues between public and private forest land owners and help with how traditional knowledge can be used in forest protection laws. This brings order, economic development, better enforcement and procedural fairness in the forestry sector.¹⁵⁵⁹ However, with deforestation there will be a decrease in food security which will lead to migration to other areas, this can cause social and state security issues as conflicts amongst different indigenous communities may arise.

Moreover, with the knowledge that is already in the international arena, it is important that the instrument cover all types of forests and the gaps that have been caused by the CBD, the UNFCCC and the UNCCD. This will help transpose all the forest protection principles, providing solutions and definitions since the CBD, the UNFCCC and the UNCCD have never done so. In addition, there is a need to co-operate efforts with NGOs and Inter-Governmental Organisations as this will improve transparency.¹⁵⁶⁰ Their functions should be clarified since there are issues regarding their powers.¹⁵⁶¹

However, the developing countries in the Southern Hemisphere may see the development of a forest instrument as a threat to their national sovereignty and right to make their decisions on how to utilise their resources. Developing countries have pointed out, that such an instrument would threaten their economic developmental plans. Moreover, in the international forest committee as already pointed out, there is a serious lack of financial backing from investors who have been frustrated in their efforts to make a binding instrument. There is also a lack of staff and expertise in many developing countries. Nevertheless, the benefits of a binding forest instrument are far greater than the drawbacks. There is a need to reduce the rate of deforestation, far more states are now required to mitigate and adapt to climate change,

¹⁵⁵⁹ Kim E R, 'The Nexus between international law and the Sustainable Development Goals', (2016) 25 (1), *RECIEL*, 15-26, page 16.

¹⁵⁶⁰ See note 1546, page 124. See also Gillespie A, 'Facilitating and Controlling Civil Society in International Environmental Law', (2006) 15 (3), *RECIEL*, 327-338, page 329.

¹⁵⁶¹ Yamin F, 'NGO and International environmental law: A critical evaluation of their roles and responsibilities', (2001) 10 (2), *RECIEL*, 149-162, page 149.

alleviate poverty, conserve biodiversity and reduce desertification in this era. Therefore, to a larger extent the benefits of a forest instrument outweigh the drawbacks far greater.

The assumption that a change in terminology when it relates to the use of forests by multinational corporations and small scale companies supplying these institutions would result in protection of forests was misguided. Sustainable development or rather the chase for sustainable use of forests has failed the lives it seeks to protect. This is mainly because the term still allows for the exploitation of forests for the benefit of one species (in one generation) over multiple others that inhabit and form the exploited forests. Forest governance needs to be more focused on protecting all species that live in forests and learning from indigenous peoples of the forests for guidance. Indigenous people have successfully lived within the forests and used the resources responsibly for multiple generations. This is due to their acknowledgment that humans are not superior to the life forms within the forests, and the acknowledgement that everything is interconnected.

Thus, in order to improve forest governance, we should be looking at the responsibility we have to the forests that give us so much. Once we realise that it is a reciprocal transaction wherein our use dictates the future health of the forests, then we treat it differently. When we acknowledge that we are custodians of the land for the now and not just the future, we start to interact with it differently. Learning from the protection of the environment provided for in the South African Constitution and the National Environmental Management Act (NEMA), we realise that without the insistence of community members commenting before any “development” can be undertaken on protected lands, then governments can easily choose “development/capital” over the environment. This situation is best illustrated in the matter of *Baleni and others*¹⁵⁶² where the applicants are affected community members litigating against the Department of Mineral Resources and Transworld Energy and Mineral Resources (a mining company attempting to mine in Xolobeni in the Coast of the Eastern Cape. In terms of NEMA, all affected parties need to be notified and agree on the proposed development. This process requires that mining companies provide details on how the mine will affect the community, where people will be moved to, what the environment will look like during the project, what will happen afterwards, what happens to the surrounding environment, and how the community will benefit. The applicants went to court because the mining company firstly did not provide

¹⁵⁶² *Baleni and others v Regional Manager Eastern Cape Department of Mineral Resources and others* (2020) ZAGPHC 485.

them with the requisite information before getting approval from the government, and insisted that it was not their responsibility to provide this information. In 2018 the community won a court bid to be provided with the information as their approval was essential before any works could commence.

This was just the beginning of the issues regarding the information. The community realised that the information provided was not sufficient enough to allow for a well informed decision to be made regarding the mine, that the company was purposefully obtuse, and that it was denying the community their right to protect their environment. The court agreed that it was necessary to provide the details to the community to help them make an informed decision. This did not mean that proprietary information should be disclosed. Heeding the initiative of this community and their relentless fight, countless other communities have opposed similar projects on these grounds. Historically communities have been lied to before only to have the land they live on destroyed while companies gain a fortune from exploiting the land.

There is no good exploitation of forests because it ultimately diminishes the resources, mining means less minerals for the soil and dams mean less water for rivers and aquatic life forms. Forests have many benefits but the best way to protect them is to only take what we need and we can only do that by being forced to listen to every single person in that community because a “spokesperson” can easily lie to gain for themselves while everyone else suffers because they believe the lies. We should trust forest communities to tell us how to protect them and to teach us how to strengthen and better use the land which we already have - less than fifteen per cent of land is covered in forest and this is nowhere near enough to justify the disrespect we are showing to what essentially are our lungs, pharmacies, protectors and water filters.

Improving forest protection at the international level is necessary. This is because the current systems rely on countries endorsing the norms and standards as well as domesticating the application. The system also has too many loopholes because it creates the impression that forest protection is not that important. There is a need for real time consequences for transgressors, without this the impact of the harm caused is not felt by the transgressor because the consequences are delayed and they get to enjoy the “spoils” of the harm caused. The uproar after the fact does little for forests when it could have been prevented at the onset if punishment was appropriate.

For instance it was clear from Jair Bolsonaro’s presidency that he would do all he could to exploit the resources in the Amazon, and yet he was and still is allowed to continue with his

presidency. This despite citizens consistently complaining about the effects his policies have on the Amazon, the immediate surrounding environment, and that of other Amazonian countries and the rest of the world. Despite Brazilians petitioning the International Criminal Court to prosecute him for his crimes against the indigenous people, the environment and the forest, there has been no action. International law needs to have an element of stringent criminal laws attached to environmental law. This is not because criminalisation means better protection but because criminalisation attaches an element of urgency and seriousness to the actions.

On a national level, courts should be able to sanction members of government who try to bypass the regulations just to approve a project, because this ensures that should a community not have the strength to fight then they are completely protected not only by the law but by the government itself. A bad environment impacts everyone, and all national governments should have a say in how their neighbours manage or mismanage the environment. The people are central, fauna and flora are indicators of what's to come and strong laws are the only way to ensure that all forests are protected.

7. Analysis

Forest governance is important for realising the highly productive landscapes which can be managed sustainably as the increase in demand of food intensifies around the world. Agriculture remains the most significant driver of forest degradation and deforestation, and there is a need to promote coordination, cooperation and positive interactions between agriculture and forest protection. Furthermore, SDGs are important as they integrate progressive goals such as sustainable agriculture, SFM and food security. There is a need to improve coordination between forest protection, land-use management, rural development, food security and agriculture.

Importantly, clear legal framework which govern land-use change, secure land-tenure systems that recognize indigenous people and traditional customary rights for land ownership, use and forest products can play a successful role for forest protection. States need to recognize areas where commercial agriculture is the principal driver of deforestation, and increase effective regulation with appropriate social and environmental safeguards. There are other private governance initiatives such as commitments to zero deforestation and voluntary certification schemes that can have a positive impact on forest protection. However, states must also adopt policies that alleviate poverty and improve rural development alongside actions that aim to improve local agriculture, land-use practices and agroforestry.

Currently, governance means the formal and informal rules, processes and organizations through actors articulate their interests and make or implement decisions. Forest governance is recognised as the way in which actors make or enforce decisions about the use, management, conservation and protection of forest resources. This concept has evolved throughout the years from a local to a global level. It also includes rules of management, government, benefits and traditional and customary rights. The use of mechanisms such as certification to support legal timber supply and the SFM, and the recognised international measures to encourage timber legality and the promotion of good governance.

Furthermore, effective forest governance is a process that engages with forest stakeholders to address key forest-related problems and issues. It involves other sectors such as agriculture and land-use management that affect forest governance. Women are among the key players to be taken into account as they are vulnerable and need their rights protected. It is of paramount importance to have women play a huge role in forest governance because of their rural forest dependence to alleviate poverty in rural families.

Good forest governance must adhere to rule of law, transparency, low levels of bribery or corruption, participation in decision-making, accountability, coherent to a set of laws, policies and regulations and transparency. These elements of good forest governance must be implemented in the forest sector and the sectors that influence forest protection and management, implementation of different laws, political stability, and/or sound capacities that influence the efficiency and effectiveness of governance. The Framework for Assessing and Monitoring Forest Governance under FAO and PROFOR which was established in 2011 has set our three pillars of governance, with forest managers playing a huge role in realisation of sustainable forest management.

Clear and equitable laws can ensure SFM since they can realise effective forest resource tenure and access, which is coupled with effective law enforcement – this can be instrumental in achieving positive forest trends. Good forest governance also includes empowering courts and police to punish and detect illegal activities, through cross-border collaboration, information sharing and access to information that is adequate and of a higher quality to comply with certain legal requirements. It is thus important for the forest sector to coordinate and cooperate with other sectors to enhance consistency and coherence to reduce certain drivers of forest degradation and deforestation. It must be noted that the failure to govern the agricultural sector

has been one of the negative effects to affect forest protection, management and the implementation of SFM.

The Framework for Assessing and Monitoring Forest Governance rests its idea on a comprehensive framework that can facilitate efforts to within and among stakeholders to improve forest governance. It recognises the three core pillars which are established in the framework as policy, regulatory and institutional frameworks, planning and decision making processes and compliance, enforcement and implementation. The framework also identifies six principles across the three pillars and address the quality of governance: accountability, effectiveness, efficiency, fairness, participation and transparency.

Effective forest governance must be well vexed to promote forest laws and policies that are fair and equitable. That is, these forest policies need to provide a clear and coherent system that facilitates SFM and use of forest resources. Good forest policies provide long-term vision for forest protection that are consistent with international instruments and builds structures for the development and implementation of legal or institutional frameworks. That is, effective laws can help forest policy into a good practice. Forest policies and laws are important to establish clear, and coherent rules of who owns forests, holds rights and benefits from forest resources and revenues they are capable of generating.

Clarity can promote understanding of traditional and statutory laws on ownership and the distribution of forest benefits. There is also a need to allow for institutional mechanisms that allow periodic review of forest policies and laws, this can enable adaptation in times of changing circumstances. FAO has gone further in developing the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security which provide guidance on the many principles, practices and internationally accepted standards of responsible governance of tenure. These voluntary guidelines provide governments with a framework of tenure-related strategies, laws, policies, activities and programmes. There are many guides which have been set up under FAO to explain and expand on the improvement of governance of forest tenure.

In addition, good forest governance can ensure that policies in the mining, agriculture, biodiversity, climate change and transport sectors are consistent with forest policies and regulations. The lack of complementarity results in these sectors such as agriculture negatively affecting forest protection when deforestation of lands is done for plantations and pasture for cattle. Thus, good forest governance can ensure that incentives are in place for a structure that

support SFM and make it more economically viable and attractive to protect land for other options.

Furthermore, forest managers play a huge part since they possess technical knowledge about the forest users and the other users that are involved in the informal development of effective forest policies and legal or institutional frameworks. They contribute to the dialogue on the forest governance frameworks and enable SFM which is technically viable for the management of forests. Forest managers can present their views and influence the development of forest governance frameworks. They also are involved in the organization of professional associations and the producer organizations. Representation is important since it can assist forest managers in the participation of effective negotiations of policy priorities, with other stakeholders such as authorities, private sectors, civil societies, local communities and other sectors.

There are other issues that are important to good forest governance such as stakeholder participation, accountability, transparency and stakeholder capacity and actions. An indicator of good forest governance is the extent to which actors are able to participate in decisions that affect forests. Quality and the reach of that participation in decisions is a good measure that can not be taken for granted. The participation of vulnerable groups such as indigenous people, elderly and the youth in decision making is of paramount importance when it comes to forest governance. States are important as they can facilitate dialogue processes which are important for opinions, expectations and the many important concerns from the local communities.

The creation of broad participation in forest governance has become a national cornerstone in forest programmes such as REDD+ and the European Union's FLEGT initiative. Such programmes and initiative can help international governance processes to support the local forest governance initiatives. The way and extent governments solve disputes is also of important concern since it can encourage mechanisms for conflict resolution which is always seen as good forest governance. Such principles such as free, prior and informed consent are important for ensuring that the forest communities and indigenous people have a greater say in forest governance processes. Providing space for participation and making such spaces equal is important in good forest governance.

In addition, transparency and accountability are paramount to good forest governance and are key to effective planning and the decision making processes. Transparency includes processes that welcome outsiders to scrutinize decisions which includes comprehensiveness, availability,

proactiveness and timeliness. Legal frameworks need to support the public access to information, promoting evidence-based policies and enforcement or imposition of sanctions for the failure to meet obligations that recognise disclosure of information. Transparency is also important in matters that require who is to benefit from forest revenue generated from resources. Importantly, operations and state finances generated from forest resources should be audited regularly – the results should be made public or easily accessible. The contracts, finances and operations of corporations that play a part in forest resources must also be audited to reduce corruption, ensure transparency and accountability. It is recommended that independent auditing be enabled to detect criminal behaviour and the enforcement of the rule of law.

A huge challenge in forest governance is to ensure all stakeholders have access to information and the digital technology opportunities to increase dissemination of quality information. The Forest Transparency Initiative under the World Resource Institute works to put information about operations of forest concessions and companies on the internet (online), where it can be obtained by anyone with a computer, phone, tablet or laptop. This relates to the collaboration of efforts with civil society organizations, private sector and the government to effectively improve public access to information. It is also essential to involve non-state actors that add credibility to the information. There are several international and civil society organisations that can perform functions as watchdog in many countries. There is a need to build capacity for the monitoring of forest operations independently. Furthermore, an indicator of good forest governance has always been the extent to which private entities which are operating the forest sector can participate in planning, decision making, and implementation and comply with the voluntary or market driven mechanisms. These mechanisms are important for legally and sustainably sourced timber and wood products.

Forest managers can always play a part in consulting with the relevant communities which the regulations may affect. They can also advocate for the participation and access to information from the government to ensure that vulnerable groups have their rights respected and well placed. In some cases forest managers can also directly consult with forest communities, which results in the facilitation of their participation and which helps in ensuring representation, benefit sharing and improving policy-making. They are also important since they mediate between local communities and companies that have interest in forests. Furthermore, forest managers play a huge part in decision making, decisions are usually made at the top. However, forest managers help and ensure policies, regulations and decisions being implemented are

conducive to SFM and equitable to the forest communities. Thus, forest managers play a huge part in enhancing accountability and transparency as they can advocate organizations for the compliance with sustainability and the legality standards, and an open approach that recognises the sharing of information.

The forest law enforcement and compliance is often linked with good forest governance. The absence of forest or environmental laws can create a huge impediment to good forest governance. Enforcement of forest laws can be undermined by the lack of user rights and access to information. Laws need to be clear, coherent and realistic for better enforcement; this makes laws difficult to exploit and vulnerable. Legal clarity is therefore paramount to compliance and law enforcement.

There is a need for effective coordination among national and local governments as a prerequisite for good forest governance. It is also helpful to implement international forest commitments and recognise effective cross-border cooperation when it comes to transnational forest crimes. Furthermore, effective internal controls and audits of forest related public and private agencies are important to reduce corruption. It is also important to give meaningful penalties for actions that breaches laws to enable and recognise good forest governance.

Forest managers can be said to promote law enforcement through providing information in forest operations which occur within their forests. They play a huge part in the certification and legality verification compliance procedures which are important for good forest governance. They also share their knowledge regarding the challenges being faced under law enforcement in the forest and forest-related fields. That is, forest managers are important role players for the achievement of good forest governance. They are important since they provide and collect the information on the ground. In developing countries they provide access to basic information on how communities and companies can comply with the regulatory mechanisms. They also inform decision makers about the need for effective training and capacity building to help promote legal compliance. Furthermore, forest managers can take action to recognise gender equality and social issues that are important to land tenure. They usually decide what actions must be adopted, equal participation and benefit from the land tenure governance processes.

8. Recommendations

It is important to find an alternative to the shortfalls encountered in the forest regime. Although not the best of alternatives, good forest governance seems to the last leg forest protection will

have to stand on until another important step is reached on the global stage. There is a need to strengthen forest governance at international, regional and national levels. Better forest governance will strengthen international and national laws, it also needs these important facets to be clarified, enhanced and strengthened.

The thesis motivates for global forest protection – setting forests on a new path to ecosystem restoration. Efforts such as working with indigenous communities, allies and forest leaders, as well as calling on industries and companies that are destroying forests and the governments that are failing to protect forests to account, will surely go a long way to advance forest protection.

Forests help sustain life, biodiversity, are sources of culture for indigenous people and stabilize the climate. However, forests and their ecosystems are hanging in the balance threatened and vulnerable, there is pressure from agriculture and infrastructure development. At this current moment, there is currently inadequate protection against activities that degrade and destroy forests. The need for forest protection remains more urgent than ever before. Furthermore, to avoid consequences of deforestation, the world needs to protect and restore what is left of forests urgently.

As it seems in the thesis, a binding instrument might not be the main route that can be taken. However, it is submitted that there are multiple alternative routes that can be followed and strengthened. Firstly, the binding route is not working as there is a divide between developing and developed countries. That is, a much voluntary route which includes soft laws and policies needs to be initiated. It is important to start with recognising the regional blocks from each continent and setting up meetings to help them build capacity throughout this process. Thus, developed countries will need to do more and aid in forest protection. Following these soft initiatives are agreements, clarifying certain principles and concepts under forest governance – and strengthening thereof. The UNFF can also help developing countries to transpose these concepts into their national legislations and National Development Plans.

Proper administrative engagement will need to be established from developed to developing countries in order to support the governments, farmers and indigenous people – i.e. there is a need to use forest protection leaders in developing countries. Proper and effective education plus public participation will need to be formed. It is imperative that these governments and communities be given educational and adequate information to understand the use of forests, as well as the importance, protection and effects of deforestation. Thus, it is important to help

regional blocks and states understand forest valuation and certification. Forests are an ecosystem that supports other ecosystems and without them, it will lead to species extinction and environmental catastrophe.

Developed countries will need to deploy their technology, finance and experts to developing and underdeveloped countries to help them conserve the remaining forest lands. A greater part will need to be played by United Nations Agencies as they are well established globally. They already have the institutions, what is left is to support them financially and with experts. Furthermore, developing countries will need to be adequately engaged on an equal footing. Previous engagement with these countries has proven highly problematic since they state that their concerns are not being heard and understood by developed countries.

Soft initiatives imply that there is a greater need to support forest protection leaders and activists. In the past few years, forest protection leaders are being persecuted globally. Much focus will need to be placed on them to protect and enable performance of their duties. These activists are prone to start programmes that help educate the public in many of the communities where travel and reaching the most vulnerable might prove to be difficult. They can also use nature-based solutions (traditional knowledge) since they know the environment well.

Many of the forest protection and environmental activists (such as indigenous leaders) are now respected and known. These activists can help the drive towards a sustainable use future and forest protection. However, protection and support is always required since their environments and jobs are dangerous and they need finances to fund most of their initiatives. It is important to understand that a Green Initiative Fund already exists. Many developed countries should donate to this fund, and further additional required technologies is to be distributed for developing countries.

In addition, to the soft initiatives, some of the National Development Plans (NDP) will need to focus on certain specific issues that reduce deforestation. Firstly, the reduction of cattle farms in many countries. These cattle farms require much of the forest lands that is being logged off for both grazing and feeding the cattle.

It must be stated here that our food production system is currently broken and will need to be fixed to reduce deforestation. The increase of these industrial agriculture farms contributes to approximately 80 per cent of deforestation around the world, this poses a threat to our planet. Thus, greedy companies are still destroying the Amazon for excess consumption. They are

fuelling land clearance with fires to expand their ranches. National Development Plans should be focusing on creating stock farming and sustainable forest management. That is, different values need to be ascribed to forests, for which these areas are prone to be affected by deforestation. However, a vegetarian diet needs an acre less forest lands whilst a meat eater needs three times more, increasingly, meaning more forest lands will need to be cleared just to feed livestock.

The reduction of the meat market has been explored extensively in the United States of America where fast food is commercialised more than in any other country. This has shown that educating the younger school children to eat healthier, also helps improve the way we protect the environment from plastics, waste and natural resources. Already we are seeing a trend, where most of the younger generation are prone to take up a flexitarian, vegetarian or vegan diet if they are well educated about the effects that some of their choices have on the environment. However, such educational crevices are still yet to be explored by multimedia companies that can market and advertise a healthier diet or more options to the youth.

Threats to nature vary per region, for instance, in the tropics, agribusiness clears forest land for use as pastures in cattle ranches, farmer's plant palm trees for palm oil, and soy plantations for animal feed and human consumption. Demand for wood by-products have threatened forests globally, whether it is used as easily discarded paper products or hardwood flooring and furniture. This is why we are campaigning for an increased number of forests for the future than present. Greenpeace's forest campaign has historically called for a stop to deforestation but the current climate emergency requires genuine effort and just restoration of natural ecosystems, and decreased degradation of the world's most vital landscapes. In too many developing or underdeveloped countries, ineffective or corrupt governments worsen the situation by turning a blind eye to illegal logging and other crimes - thereby endorsing these actions.

There is a need to teach students about the importance of forests and explore more outdoor activities. Children are the future, thus we need to inspire them to love the environment and protect the planet. Positive attitudes can be taught starting in primary (kindergarten) schools about reducing waste as they get older. It is important to build this environmental conscience and offer alternatives in their budding lives.

Importantly, the United States of America's craving for hamburgers and soy beans with much of them coming from Central America and Brazil, has resulted in deforestation for cattle

ranching reaching negative levels. Brazil's portion of the Amazon is under threat especially with the election of President Bolsonaro who has ignored and/or reversed all environmental laws and policies, to activate development and farming projects in forest lands. This lack of political willingness is problematic, however increasing safeguards such as forest certification (trading barriers and reducing international crimes) and reducing raw materials or produce from such countries will provide a way of forcing governments to recognise environmental initiatives and efforts in their territories.

Furthermore, it is also important to help reduce poverty in indigenous communities. The SDGs explain that to conserve the environment there is a need to alleviate poverty, improve sanitation, education and health. Most of the indigenous communities in the Amazon need help so they can reduce deforestation. Supplementing their agricultural funds and technology will help them increase their yields thus reducing more deforestation for fertile lands. There is also a need to pass knowledge and build capacity so that sustainable agriculture can be achieved. Mostly, forests are used by indigenous communities to supplement their lives, that is, selling charcoal, grazing lands and bush hunting. Thus, reducing their reliance on forest lands will initiate efforts for forest protection. This calls on all fraternities, developed countries and international companies to help find solutions to global poverty. These include fighting corruption at all levels, supporting land reforms, supporting local agriculture, establishing micro-lending schemes, increasing sustainable forest businesses, and any other initiative that improve lives and the environment in developing countries.

In addition, policies will need to focus more on mitigating and adapting to climate change. Climate change affects all aspects of life, be it human society and also the natural world, especially forests. As the climate warms, many species face extinction thus disrupting the ecosystems with the reduction of these vital players. This will increase the severity and frequency of wildfires and droughts in places such as California, Amazon and Australia as already seen this past summer. The relationship between forest protection and climate change has already been explained above. However, support for campaigns should be recognised as a means to enact progressive climate change policies.

Importantly, there are countries that have progressive policies to counter forest degradation. Canada can shed some light since it has a roadmap which guides forestry policies, logging practices and forest research. This leads to a progressive and ecosystem-based forest management system, they have called it the National Forest Strategy. It has inputs from many

stakeholders which include environmental groups, provinces, multinational companies, farmers' unions and universities. This policy paper is updated and renewed after every five years. More information is allowed from research groups and experts in different fields surrounding forest protection. The new section which encompasses best practices has been certified by the FSC and has become highly recommended. This strategy allows many role players to speak their voices and gives them a platform to make an impact. It is well conversed in the best practises which the experts might agree on and backed by research. Such policies are important to reduce deforestation and should be promoted under regional blocks or other states who want to adopt forest protection. Thus, the UNFF and FSC should put effort into helping states improve their policies and strategy.

Another country that has taken broader and stringent measures in reducing deforestation is Switzerland. Switzerland has banned outright logging as they have recognised the damages it has caused to the soil. It has further employed an eco-forestry strategy on all secondary forests. Much like Canada, it has also embraced new standards of socially responsible and ecologically sensitive forestry use. These standards have been embraced by companies, landowners and indigenous communities. With a good eco-forestry system, natural forests will yield better timber and protect their forest ecosystems.

Policies in countries with smaller forests should be focused exclusively on the banning of the import of logged timber. Forest certification can help reduce deforestation by the activities of illegal logging companies. However, this effort needs recognition from developed countries which are a big market for timber and wood. Many of the timber produced in the Amazon originates from or is fuelled by bribes, intimidation and corruption. One of the positive steps to reduce this illegal activity is legislation that recognises forest recognition and strictly monitors timber when it enters regional blocks or state port of entries.

Education to the public which is adequate and informative helps reduce the buying of products from illegal loggers. Thus, states can promote the selling of certified timber and timber bought from companies that recognise fair trade or countries that recognise sustainable development of forests. Forest protection leaders are needed to spread word amongst friends, family, communities, and ask others to do the same. In addition, ordinary citizens can approach grocery shops or write letters, email or telephone and help them change their methods and items of business. States should be promoting the buying and selling of organic produce. The government needs to make sure that the majority of products sold in shops are FSC certified.

This is a policy decision that has to be taken by national governments to protect their forests. Thus, forest protection will assist in the protection and conservation of wildlife, whilst simultaneously defending the rights of indigenous and native communities.

Corporations hold some power when it comes to the destruction of the world's forests, they not only have the ability to save them but are best equipped to ensure protection. Companies can contribute to deforestation by introducing, implementing and ensuring compliance with "zero deforestation" policies and clean up their supply chains. This means holding suppliers accountable in the production of commodities such as timber, beef, soy, palm oil and paper in a manner which does not rely on the destruction of forests and has a minimal impact on our climate and the environment. Not only should companies implement these policies, but they have to follow through on forest protection promises, maximize the use of their economic influence, and collaborate with like-minded institutions within their sectors, demanding that their suppliers transform their means of production so that nature is preserved, protected and environmental rights which are human rights are uplifted.

Companies should set bold targets to maximize the use of reclaimed wood, pulp, paper and fiber in their products. For the "new" raw materials which they purchase, they must ensure that any virgin fibre used has transparent and credible assurances that it has been sourced in a legal and sustainable way that respects principles of environmental and social responsibility. Third-party certification such as the Forest Stewardship Council can be a starting point in evaluating primary suppliers, this is because Greenpeace strongly advises against weaker forest byproduct certification schemes such as PEFC and SFI. Unfortunately these corporations are yet to initiate action on their own, without their participation forest protection becomes a mammoth task. This is why there are investigations which are exposing and confronting environmental abuses committed by multi-national corporations. Thanks to these actions, companies are forced to change their ways through building solutions that both protect jobs and the forests. Importantly, innovations and entrepreneurship has started to open the private sector to many environmental initiatives.

Forests around the world are homes to many indigenous people, these people have lived and thrived in harmony with the forests. It has been proven that when the rights to indigenous peoples' traditional lands and self-determination are respected, forests stay standing as they are protected by those who know them best. Too often, corporations and government officials overlook or intentionally walk over the rights of indigenous people and their safety. For

instance, the Waswanipi Cree people of Northern Quebec, Canada are fighting for the right to live of the last wild forest on their traditional land, meanwhile down South the Mundurucu people of the Amazon and the Bayat people of Sumatra are fighting against a proposed mega-dam that threatens rainforests, a river, endangered species and their way of life.

Everyone can make a difference in the struggle to save our forests by making informed choices daily. We have to consume less, avoid single-use unrecyclable packaging, eating sustainable and healthier food, and choosing reclaimed or responsibly-produced wood products, then we will all be part of the movement to protect forests and our natural ecosystems. We should make better choices for forests, nature, and people — and do so vocally. If we are to end deforestation in this lifetime, we require governments to participate in this battle. World leaders must embrace large-scale domestic and international forest conservation policies informed by the latest science, allowing us to live in harmony with the world's ecosystems while avoiding severe climate disruptions.

A few recommendations: -

- Supporting efforts that recognise and amplify the voices of indigenous and traditional forest communities.
- Sustainable utilisation of single-use products.
- Demand forest products that can be recycled.
- Making informed food and waste choices.
- Educating your family, friends, neighbours and community.
- Demand your government to source forest commodities from countries that respect and protect nature and human rights.
- Demand companies commit to reducing deforestation, through their actions in developing countries.
- Demanding food be labelled where it is originally from and grown.

There is a need to strengthen forest governance – improving on transparency, public participation, access to quality information and justice, enforcement of environmental infringement, building human rights synergies and accountability. The international law for forest protection is fragmented however this position is manifesting itself with new voluntary initiatives such as the New York Declaration and Bonn Alliance which are important for forest protection, manage and governance. Nonetheless, effective and efficient forest governance will

play an important role in cooperation and coordination of forest protection efforts. There is also a need to balance the global economic governance to fully realise a balance on sustainable development and global forest governance.

Capítulo 10: Conclusión

El capítulo 1 de la tesis es una introducción, en la que se mencionan los problemas encontrados en la protección de los bosques, se analiza la pregunta de investigación y se presenta la estructura de la tesis. El capítulo 2 se centra en las funciones vitales de los bosques como ecosistemas interdependientes que proporcionan amplios servicios a las comunidades locales y al mundo en general, por lo que se puede decir que los bosques naturales proveen funciones socioeconómicas y ecológicas. Los bosques también ayudan a mitigar y adaptar el cambio climático, a conservar la biodiversidad y a reducir la desertificación. Sin embargo, como se detalla en el capítulo 3, los bosques también se encuentran amenazados por actividades humanas que pueden llevar a la deforestación, con los consiguientes resultados de pérdida de biodiversidad, cambio climático y desertificación, tal y como dichos efectos de la deforestación se han expuesto en el capítulo 4. Así pues, los bosques desempeñan funciones vitales y deben ser protegidos por un instrumento especializado de carácter vinculante, lo que podría reducir la deforestación provocada por las actividades humanas.

No obstante, el capítulo 5 es más técnico, ya que se centra en los instrumentos ambientales internacionales que se relacionan con y son importantes para la protección de los bosques. Hay muchos instrumentos internacionales que reconocen las funciones de los bosques y guardan relación con la protección de los mismos. Esos instrumentos ambientales internacionales, principalmente el CDB, la CNUCLD, la CITES, la CMNUCC, el CIMT, la REDD y el Protocolo de Kioto, resultan inadecuados e insuficientes para la protección de los bosques, como se detalla en el análisis crítico al final del Capítulo 5. Ello se debe principalmente al hecho de que tales instrumentos no están específicamente destinados a la protección de los bosques, están fragmentados y desarticulados y no contienen suficientes medidas para proteger los bosques. Ello puede demostrarse por la forma en que la selva amazónica brasileña y la del Congo están siendo protegidas inadecuadamente, lo que redundará en altos niveles de deforestación anual. Los esfuerzos para proteger esos bosques a nivel nacional, regional e internacional son desarticulados, fragmentados e insuficientes.

Además, se están utilizando muchos instrumentos para reunir los principios forestales a nivel internacional, lo que ha creado lagunas y, puesto que nunca se ha hecho un esfuerzo tan ingente, nunca podría existir un instrumento de protección forestal. Es importante destacar una vez más que es más necesario proteger los bosques con un instrumento vinculante, ya que lo ideal sería que éste creara un marco vinculante y pudiera lograr un esfuerzo colectivo mundial para

proteger los bosques. A riesgo de ser repetitivo, los mecanismos, conceptos y principios ya existentes a nivel internacional deberían transponerse y las lagunas deberían cubrirse con un instrumento vinculante autónomo.

Existe una necesidad crucial de proteger los bosques debido a sus funciones y contribuciones ambientales. El método para hacerlo sería la elaboración y aplicación de un instrumento vinculante, ya que los instrumentos ya promulgados son inadecuados y con lagunas desarticuladas que es necesario colmar. Lo ideal sería que ese instrumento vinculante contara con mecanismos eficaces de aplicación y cumplimiento, y con obligaciones vinculantes para las Partes de reducir el deterioro de los bosques y la deforestación. Una alternativa puede ser la transposición de los instrumentos internacionales ya promulgados y la cooperación con los mismos.

En el capítulo 6 se examinan los obstáculos que han inhibido las negociaciones y los procesos de elaboración de un instrumento internacional vinculante específico para la protección de los bosques. Actualmente parece poco realista que se acuerde un instrumento vinculante, ya que la atención internacional se ha desplazado hacia la mitigación del cambio climático y la adaptación al mismo. Además, es poco probable que los países en desarrollo firmen un nuevo instrumento sobre la protección de los bosques; ello se debe a que los Estados consideran que la gobernanza de sus recursos naturales es parte integrante de su desarrollo social y económico, por lo que la defensa de dichos recursos se ha basado principalmente en la soberanía territorial (durante los incendios forestales de la Amazonia brasileña, el Presidente Bolsonaro lo expresó explícitamente). También hay otras cuestiones como son la fatiga de los tratados y los donantes, las cargas históricas y la pobreza, todos ellos problemas que han seguido obstaculizando y reduciendo las posibilidades de que se elabore un instrumento vinculante. Dichos obstáculos han hecho más difícil que la protección de los bosques gane espacio, reconocimiento y conversación en el ámbito internacional. Estos obstáculos, que han impedido la elaboración y las negociaciones de un instrumento vinculante, deben señalarse y resolverse mediante una mayor utilización del FNUB y de las Conferencias de las Partes.

Sin embargo, debido a la falta de un instrumento internacional vinculante, el deber de proteger los bosques ha recaído en los bloques regionales y en los Estados. En el capítulo 7 se examinan las medidas de protección de los bosques que han aplicado España, Sudáfrica y Australia. Dichos países han promulgado leyes y planes de protección de los bosques y han tenido una

mejor reputación en materia de aplicación de la ley en comparación con muchos países en vías de desarrollo y desarrollados. No obstante, esos países se ven afectados a nivel nacional por la falta de personal y de aplicación de estas leyes y reglamentos nacionales. Además, sus esfuerzos a nivel de España (regiones autónomas), Sudáfrica (provincial) y Australia (estatal) fueron desarticulados, en comparación con el tema nacional. España, Australia y Sudáfrica han demostrado suficientemente cierta voluntad política para promulgar leyes o aprobar políticas forestales nacionales para proteger los bosques mediante la utilización diligente e inteligente de los instrumentos internacionales y las "leyes blandas" que ya se han promulgado en mayor medida. Un nuevo instrumento forestal podría aportar una estructura y un marco vinculantes, claridad, cooperación, coordinación e integración de los esfuerzos mundiales para la protección de los bosques.

El Capítulo 8 explica y aclara el significado de los principios ambientales y los mecanismos de aplicación y cumplimiento que esos Estados han adoptado para proteger sus bosques. Se ha mejorado el uso de tales instrumentos, pero no se están utilizando colectivamente. Los instrumentos están también mal definidos y carecen de una estructura adecuada debido a la falta de un marco internacional de régimen forestal vinculante, sin embargo, el *soft law* y los informes y decisiones de las cumbres de la Conferencia de las Partes han tratado de aportar más claridad a las cuestiones abordadas en el Capítulo 8. Además, en el Capítulo 9 se examina la gobernanza forestal y los conceptos que se han elaborado en el ámbito internacional a partir de los instrumentos pertinentes y relativos a la protección de los bosques ya promulgados. Muchos de estos conceptos, principios y mecanismos no son vinculantes en lo que a bosques se refiere y se ha dejado a los Estados la responsabilidad de elegir lo que podrían querer y necesitar para proteger sus bosques de manera voluntaria. Ello ha conllevado que los esfuerzos de protección de los bosques sean inconexos, a que la fragmentación de los principios y los conceptos mal definidos, como la ordenación forestal sostenible y la evaluación del impacto ambiental, se reconozcan desde el plano internacional hasta los planos regional y estatal.

De lo anterior pueden extraerse algunas otras conclusiones, la protección de los bosques debe centrarse en la obtención de apoyo para un instrumento vinculante, el uso eficaz de los esfuerzos/instrumentos internacionales y el *soft law*, y un mayor reconocimiento del FNUB. El uso del ya referido *soft law* es importante, ya que el instrumento jurídicamente no vinculante es el primer instrumento que reconoce los conceptos de protección forestal y valoración de los bosques en los instrumentos de mercado. El NLBI debe servir para coordinar los esfuerzos con

los bloques regionales para reducir la deforestación y la degradación de los bosques que están bajo el UNFF. Además, el FNUB tiene que desempeñar un papel importante en la integración de los esfuerzos de los instrumentos ambientales internacionales que ya se han promulgado y el uso de leyes no vinculantes. Es decir, el FNUB debería comenzar a integrar y cooperar con el instrumento jurídicamente no vinculante en relación con el cambio climático, la diversidad biológica, el comercio, los derechos humanos y los regímenes de desertificación. Esta institución debería poner en marcha iniciativas y conferencias de sensibilización pública para concienciar sobre la importancia de los bosques y la creación de capacidad en diferentes regiones y Estados que no participan en estos esfuerzos.

En conclusión, ha habido una serie de instrumentos internacionales que se relacionan con y son pertinentes para la protección de los bosques. Sus marcos respectivos contienen un reconocimiento meramente limitado de la protección de los bosques, por lo que resultan insuficientes e inadecuados para protegerlos efectivamente. También hay instrumentos de *soft law* que se han promulgado en el ámbito internacional. Aunque no son muy útiles, dichos esfuerzos merecen ser aplaudidos. En la actualidad, es necesario transponer y consolidar los mecanismos de todos los instrumentos internacionales y las leyes no vinculantes para coordinar los esfuerzos y seguir utilizándolos eficazmente para la protección de los bosques. Los bosques siguen siendo deforestados y amenazados diariamente por las actividades humanas. Por lo tanto, es necesario proteger los bosques mediante un instrumento internacional vinculante específico. Este tiene que tener por objeto reducir la deforestación al máximo y aportar cohesión en el marco forestal. Es necesario cooperar y coordinar eficazmente la protección de los bosques con otros temas y cuestiones ambientales acuciantes como el cambio climático, la lucha contra la desertificación y la conservación de la diversidad biológica y la protección de los sitios del patrimonio.

En resumen, es importante contar con un instrumento internacional vinculante específico en el contexto actual. Sin embargo, las leyes no vinculantes tienen que seguir desempeñando un papel en la protección de los bosques y se requieren más esfuerzos del FNUB. El instrumento jurídicamente no vinculante como punto de partida ha venido estableciendo una norma en el proceso de elaboración e identificación, ya que las leyes no vinculantes han pasado a formar parte de la protección de los bosques. Los Estados y los bloques regionales han continuado desempeñando su papel crucial y de gran importancia, lo que ha sido una adición bienvenida y aliviadora en los esfuerzos para proteger los bosques.

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