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A PROPOSAL FOR MEASURING THE IMPLEMENTATION OF UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS IN THE TOURISM INDUSTRY

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Abstract

The United Nations have established the Sustainable Development Goals for all countries and stakeholders to address critical issues and situations that we as a society are experiencing, such as extreme poverty, climate-change and unbalanced economic growth. The Sustainable Development Goals are meant to be implemented in all industries and by all stakeholders. This study aims to provide a preliminary analysis of the connection between the tourism industry and the Sustainable Development Goals through its measuring and monitoring.

1.   Introduction

Tourism has undoubtedly become one of the leading industries in the global economy. It impacts on global and local GDP as well as on the economy of emerging regions and countries as a few examples. Thus, tourism is an economic and resource-consuming activity that has resulted in many positive economic impacts.

Nonetheless, as every economic activity and industry inevitably, tourism can lead as well to negative impacts such as natural resource consumption and mass tourism. Mosedale (2014), states that tourism often is mainly focused on its economic growth evading the acknowledgement of its impacts.

When it comes to the development of these regions and countries, in the recent years the importance of maintaining a balance between economic growth, social stability and environmental preservation has led to the increase of research on the sustainable development of cities and different regions.

Since 1992, the UN has directed its efforts on the sustainable development of its members focusing on all three areas, social, economic and environmental.

Right after in 1998 tourism scholars started focusing on the impact of tourism on sustainable development, by the foundation of the Journal of Sustainable Tourism. Nonetheless, when the UN published the 17 SDG in 2015, which focused on the sustainable development of the state members on a global perspective, just a few academic pieces of research focused on the impact of tourism towards the achievement of the United Nations Sustainable Development Goals (Bramwell, Higham, Lane and Miller, 2016).

Bramwell et al. (2016), founders of the Journal of Sustainable Tourism, encourage academic research to focus on the challenges that our society is currently facing, including poverty, inequality, well-being, health, food and water security and many more.

Therefore, this is why this research discusses how the tourism industry can impact on the sustainable development of territories. This project itself aligns

with the SDGs, which include as one of its targets, defining and implementing tools to monitor sustainable tourism and its impacts.

The upcoming chapters will analyse the sustainable development concept, its relation to tourism and the importance of balance for the future preservation of all destinations, local community and the tourism activity itself. Furthermore, following the guidelines, this study aims to analyse how existing indicator systems could contribute to the monitoring and measurement of global sustainability represented by Sustainable Development Goals within the tourism industry.

Aims and Objectives

The ultimate purpose of this study is to understand the connection between the tourism industry and the monitoring and measuring of the Sustainable Development Goals.

In order to achieve this global purpose, the following objectives have been set:

1. Identify and select existing Tourism Indicator Systems.

2. Analyse the potential alignment of each system with the SDGs.

3. Discuss the SDGs and issues that are well covered by the selected systems, and also identify grey zones and opportunities.

4. Create a proposal of a collection of indicators to benchmark tourism contribution to the achievement of the Sustainable Development Goals.

Research Methodology, Structure and Limitations

This section aims to provide the reader with a detailed structure and overview of the methodology, processes and sources that have been used to develop this research.

This dissertation has been divided into two main chapters. Firstly, the theoretical framework followed by the case study.

The first chapter of the study consists of the research and analysis of literature developed in the past related to sustainable development and its connection to tourism. The present study begins with a brief introduction of the sustainable development concept. Following, as an essential part of this research, Sustainable Development Goals are introduced by analysing how the United Nations has worked and focused its efforts and resources into the study of sustainable development. This section focuses on the most prominent summits of the UN and its member states that have resulted in the foundation of the Sustainable Development Goals. To do so, a variety of institutional paperwork, reports and publications have been assessed.

Following the SDGs introduction, the chapter continues with a section dedicated to building the connection between SDGs and Tourism, as a result of analysing previous research and academic papers addressing the Sustainable Development Goals and the Tourism Industry. A chapter in this study is also designated to the analysis of sustainable tourism and indicators as a measurement tool and its importance for the competitive advantage of destinations.

To summarise, for the development of this study's theoretical framework, secondary sources have been mainly used, such as Institutional reports and publications as well as independent academic publications and articles.

Following the theoretical framework, the second chapter of this study is the case study. The case study in this research is an approach to how some existing Indicators systems could help destinations measuring and monitoring their impact on the Sustainable Development Goals.

For this analysis, two different Indicators Systems have been selected based on criteria such as the encompassment of all sustainable areas, (social, economic and environmental), as well as all stakeholders involved in the tourism activity and its sustainable development. In particular, the chosen indicators systems address issues utterly and gaps in all areas of the sustainable development concept, as well as offer indicators that involve all stakeholders involved in the destination, public administration, private sector, local community and the tourists itself, this has been the main criteria considered for the selection of the systems. Looking at other indicator systems like the Green Growth Indicator System, it has been observed that these are focused only on one specific pillar of sustainability or give a lot of importance to one of the stakeholders. In the case of the selected systems, it can be said that there is a balance concerning the issues and stakeholders that are addressed.

Following the mentioned guidelines, the indicator systems selected are the European Tourism Indicator System (hereafter ETIS) and the Indicators of Sustainable Development for Tourism Destinations (hereafter ISDTD).

The methodology for this analysis consists of the allocation of the indicators of each system to each of the Sustainable Development Goals based on the connection of the indicator and its potential value for the monitoring and measuring of the Sustainable Development Goal.

In the case of the ETIS, all indicators have been allocated to the corresponding Sustainable Development Goal. Nonetheless, when it comes to ISDTD, not all the indicators have been allotted. The main reasons for this are the number of indicators which in some cases are too detailed and also repetitive, as with the indicators included in the chapter Creating Trip Circuits and Routes which address marketing efforts on concrete products and services, and also on the chapter addressing violence at the destination some of the indicators might be useful for this particular study, but probably not all. Furthermore, even though tourists are essential for tourism activity and its development, this study has concentrated on the capability of destinations to impact the global sustainable development of the region, this is why the author has decided to look at how the tourism industry/destinations can impact global sustainability.

While the ETIS includes codified indicators, it will be easy for the reader to compare and identify indicators from this study on the original publication.

However, this is not the case for the ISDTD. This indicator system is structured by issues or specific topics related to or impacted by the tourism industry, an example of issue *Local Satisfaction with Tourism* and *Access by Local Residents to Key Assets*. Each issue has a group of indicators, and although each issue has a numeration, its indicators are not coded. This is why the author has applied a coding system resulting from the Baseline Issue the indicator belongs to.

The analysis of the connection focuses on the potential usage of each indicator on the measurement of each SDG performance, as well as what is lacking on each indicator system, what are the strong and weak points of each system as well as some thoughts on how the measurement and monitoring of the SDGs could be improved.

The analysis of the connection between the chosen indicator systems and the SDGs consists of two parts.

First, an initial allocation of the indicators is done subjected to the potential connection of each system and its indicators as individuals to the overall Sustainable Development Goal. From this first indicator allocation, a detailed analysis is done, in order to identify the indicators that would contribute best to the monitoring and measuring of the SDGs, as well as to identify gaps and opportunities of each system and its connection to Sustainable Development Goals.

In order to understand further the potential connection of each SDG and the indicator systems, it has been taken into account the targets that the SDGs include. Each SDG contains a variety of specific quantitative targets to achieve, which ultimately would lead to the achievement of the SDG.

Taking this into account, a second selection of indicators has been carried out. This second filter aims to identify and highlight the indicators that would directly contribute to the measuring and monitoring of each SDG's targets. Further explained, the indicators selected and allocated in the second table are those indicators which would more directly contribute and give visibility for the

monitoring of the specific target. For this last selection of indicators, it has also been taken into account the level of involvement of the tourism industry on the specific indicator. The role of the tourism industry on each of the indicators will provide the first insight into the potential impacts that the tourism industry can work towards the global Sustainable Development.

It is essential to mention that with the selected indicators systems, not all SDG's targets are addressed. The indicator systems selected are tourism centred; hence the indicators involve the tourism industry directly or indirectly. Following the SDGs patterns, their targets encompass all industries and sectors, so it is comprehensible that the indicators systems do not cover all the targets and issues addressed by the Sustainable Development Goals.

To summarise, for the data analysis, a qualitative content process has been used. It is beyond the capability and resources availability of the author to further execute this study applying quantitative methodologies.

This study has been developed, aiming to provide a first insight into the connection between Sustainable Development Goals and the tourism industry. Due to time constraints and aiming to focus on this very first step of the overall topic, the author has decided to end the study in this stage. With the outcome obtained, and as it will be explained in the upcoming chapters, there is room for future research on this significant topic.

Regarding the limitations of this study, it must be said that the availability of publications and studies on the connection between the tourism industry and the sustainable development goals has been a barrier. Following this study, the author aspired to develop a benchmarking of some destinations in order to test the indicator collection that has been created in this study. However, because of time and resource availability limitations, lack of information available, and difficult access to information to perform the benchmarking, it has been decided to finalise the study with a deep, detailed and prepared first analysis of the indicators systems.

Another limitation encountered during the execution of the analysis is the number of indicator systems available. Even though many indicators systems have been analysed and considered for their participation in this study, it is out

of the scope of this study's resources and availability of time to analyse all sets of indicators.

In closing, this study focuses on preliminary research to understand the connection between the Sustainable Development Goals and the tourism industry.

1. Tourism, Sustainability and Destination Intelligence

As this study focuses on the potential connection of the tourism industry and the Sustainable Development Goals, it is essential to first understand what Sustainability is in the tourism sector, as well as how international organisations have worked towards sustainability. On the following chapters this concept and topic will be developed and explain from a variety of perspectives.

1.1. Sustainable Development in the Tourism Industry

Authors like Wahab and Pigram (2004) pointed out the importance of sustainability in the tourism industry, and its impact on the global growth of our society.

The sustainability concept in the tourism industry is based on sustainable development as a global notion, defined on the Brundtland Report in 1987 as the "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" cited by Murgante, Borruso, and Lapucci (2011, p.1).

As stated in the United Nations Conference on Environment and Development in Rio de Janeiro in 1992 by all the stakeholders involved, sustainability implied the balance between environmental protection and preservation along with the economic and social development (Costa and Carvalho, 2011).

It is widely accepted among the academic community that there are three different dimensions of sustainability (Martínez and Rodríguez, 2015).

- Environmental Sustainability: must guarantee that the development of the region is compatible with the preservation of biological diversity, ecosystems and natural resources.

- Social and Cultural Sustainability: must guarantee that the development of the region preserves the identity and culture of the local community, preserving their values and the individual control of their lives.

- Economic Sustainability: must guarantee that the economic growth and development of the region is efficient and benefits all agents involved in the present and for future generations.

The Agenda 21 (UNCED, 1992), developed during the UN Conference on Environment and Development in Rio de Janeiro, already exposed the importance of planning and developing tourism programmes as strategies for sustainable advancement of urban and rural destinations to reduce the inequality between regions.

However, in the last few years, globalisation and its impact on tourism activity have made it more difficult for tourism researchers and experts to reinforce the idea that tourism is a crucial industry for the long-term growth and stability of new and mature destinations.

Sustainable Tourism is defined by authors such as Eber (1992) or Fennell (2003) as the tourism activity and all the stakeholders involved in it, that operate within its capacities, involving the local communities, at the same time that a great tourism experience is provided and guaranteed for future generations (Cited by Moral, 2017. p.84-85).

One of the most supported and used definitions of Sustainable Tourism was formulated by the World Tourism Organization and the United Nations Environment Programme Division of Technology, Industry and Economics (2005):

"Tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities" (p. 12)

Sustainable Tourism denotes a level of tourism activity that can be maintained over the long term because it results beneficial for the social, economic, natural and cultural environments of the area in which it takes place.

The sustainability definition and its division into three main pillars Social, Economic and Environmental, has provided a guideline for all economic sectors including tourism to implement strategies involving all stakeholder which would result in the improvement of the destination's or region's sustainability development.

As proven in the first paragraphs of this paper, it is clear that since the emergence of the sustainability concept and its application in the tourism industry, many researchers, public and international organisations have been interested in the topic. Purposely it is worth mentioning and analysing the actions and impacts that the World Tourism Organisation by the United Nations (UNWTO) has had over the last decades.

1.1.1.   UNWTO & Sustainable Development

In 2003 the UNWTO along with the UNEP proclaimed three main principles (UNWTO and UNEP, 2005, p.11-12) which aimed to be the base to all tourism strategies that were contributing towards the Agenda 21 and the sustainable development of the European Tourism, which should:

- Make optimal use of environmental resources that are an essential element in the development of tourism, the maintenance of all ecological processes and the preservation of natural heritage and biodiversity.

- Respect the social-cultural authenticity of local communities, preserving their built and living cultural heritage and traditional values, and contributing to the intercultural understanding and tolerance.

- Guarantee viable, long-term economic operations that will result in socio-economic benefits to all stakeholders, including substantial employment opportunities and social services to local communities, and contribute to poverty eradication.

Since 1992, Governments members of the United Nations have gathered together in different conferences and summits to discuss and agree on how we could globally improve the sustainable development of our communities and infrastructures.

Following, Table 1 presents the most relevant gatherings of Governments and the UNWTO in the last decade detailed with the participation, goal and outcome of each of them:

Table 1: Summary of UN Summits addressing sustainability and its outcome

Summit	Goal & Outcome
Earth Summit (1992, Rio de Janeiro)	Agenda 21
Millennium Summit (2000, New York)	MDGs
World Summit on Sustainable Development (South Africa, 2002)	Agenda 21 Commitment to eradicate poverty.
Rio + 20 United Nations Conference on Sustainable Development (2012, Rio de Janeiro)	The Future We Want
General UN Assembly (New York, 2013)	Open Working Group
UN Sustainable Development Summit (New York, 2015)	Transforming our World: 2030 Agenda for Sustainable Development

Source: UN (n.d)

Agenda 21

From the 3rd to the 14th of June 1992, more than 178 Governments members of the United Nations, gathered together in Rio de Janeiro, in what was named the Earth Summit (UNCED, 1992).

Their goal was to define and agree on an integrated plan of action, to work concurrently towards the control and sustainable development of every region where humans have an impact on the environment, focusing primarily on Forests — this plan of action named Agenda 21, referring to the upcoming 21st Century.

The Earth Summit led to the founding of the Commission on Sustainable Development in December of that same year. This new organisation formed

under the guidelines of the UN, had the goal to monitor, control and ensure all members' commitment and implementation of the agreed plan and specific actions, not only on a state level but also on a regional and local scope.

Agenda 21 was defined not only focused on the global impacts of a correct sustainable development of our communities but also how on a local scope, these communities would have a global impact.

Sors (2001) exposes that public participation in the sustainable plan and strategies promotes the interaction between the different stakeholders, resulting in better implementation of the plan.

Furthermore, the Guide proposed by the ICLEI (International Council for Local Environmental Initiatives) presented a process that encouraged local governments to prioritise the agreement between all stakeholders, including local communities, public administration and private sector (Echebarria, Barrutia and Aguado, 2004).

In 2003 the ICLEI wrote up a guide for local governments to expose how the Agenda 21 approach could be useful to strengthen the management and development of sustainable tourism in their areas and how to integrate tourism into broader sustainable development (ECLEI, 2003).

Even though not so many regions understood or saw the importance of this approach and action plan on sustainable tourism, some local authorities implemented the Local Agenda 21, including mostly Islands, Established Resorts and Historical Towns.

According to ECLEI, this is considering these destinations meet at least one of the following criteria:

- Tourism as the dominant economic activity and in some cases, the sole source of income for the local community.

- A high number of arrivals and tourism matured destinations.

- Destination previously affected by unmanaged tourism activity and its consequences.

One of the most critical points on Local Agenda 21 for Sustainable Tourism Development is to implement it through the Sound Analysis.

To summarise, the Sound analysis implies:

- A DAFO analysis of the area and how tourism is related to it.

- To carry out an analysis of current and potential markets.

- Set up a long-term vision of the tourism activity in the region

- Set up of strategic objectives

- Set up targets and indicators.

- Create an action plan of resources and stakeholders involved.

- Monitoring Plan for results.

Millennium Summit & MDGs

In September 2000, 149 head of states gathered together in New York to participate in the Millennium Summit.

During the summit which took place from the 6th to the 8th of September, international governments agreed and committed to the Millennium Declaration.

The Millennium Declaration presented the responsibility of governments to support and defend human dignity, equality and equity, as a fundamental right of all citizens focusing on vulnerable groups such as children and youth at poverty risk (UN, 2000).

The Millennium Summit exposed the risks and challenges of globalisation and encouraged governments to adapt and leverage the positive force that the countries faced during the transition.

The Millennium Declaration included values, principles, objectives and deadlines. All the objectives included in the Millennium Declaration were and are still now named Millennium Development Goals (MDGs.)

Table 2: List of Millennium Development Goals

- to eradicate extreme poverty and hunger;

- to achieve universal primary education;

- to promote gender equality and empower women;

- to reduce child mortality;

- to improve maternal health;

- to combat HIV/AIDS, malaria, and other diseases;

- to ensure environmental sustainability; and

- to develop a global partnership for development.

Source: UN (2000)

Governments participants of the Millennium Summit, that committed to the MDGs had the responsibility to achieve improvements in their region's sustainable development by 2015.

In the first publication of the Millennium Declaration, Tourism as an economic activity and potential vital sector on sustainable development was nearly addressed. Moreover, according to Marafa (2007), it took longer for the International Organizations to understand the role of the tourism industry. After analysing and studying the potential applications of the declaration in the tourism industry, this new approach of the Sustainable Tourism Development was introduced at the Review Summit in 2005.

Marafa (2007) also exposes that proper implementation of Sustainable Tourism Development strategies, such as the funding of different tourism projects by international governments or organisations like UNWTO or UNEP, would contribute without hesitance on the achievement of many MDGs.

The UNWTO itself stated in 2004 the importance to comprise tourism in the plans and strategies to achieve the MDGs. It encouraged all members to ensure that national and local tourism strategies and policies that address poverty issues are in place, as governments have a pivotal role to play in providing the right conditions for a thriving tourism industry that delivers benefits to the poor.

<u>2030 Agenda for Sustainable Development & SDGs</u>

One of the last milestones of the UN and its members in the approach to Sustainable Development was during the UN Summit for Sustainable Development in 2015.

During the summit, all members of the UN committed to an action plan that should be implemented by all countries and stakeholder for the next fifteen years in areas of critical importance for humanity and the planet, known as the 2030 Agenda (UN, 2015).

The 2030 Agenda was defined to encourage countries, industries and all stakeholders involved to seek for more sustainable practices in all of the three pillars that set sustainable development out.

The action plan was defined after the Millennium Development Goals and with aiming to complete what was not achieved with that latest strategy. The 2030 Agenda resulted in a completely new plan, shaped by 17 Sustainable Development Goals and 169 Targets.

These 17 Sustainable Development Goals, also known as SDGs, are framed under five different areas which are of most importance to humanity:

- People

- Planet

- Prosperity

- Peace

- Partnership

The Agenda 2030 for Sustainable Development (UN, 2015) states that one of their objectives with the plan is to promote and encourage sustainable tourism among the UN members and its regions.

 Nonetheless, the research and academic community has nearly addressed the connection between the leading economic activity that Tourism represents and the Sustainable Development Goals.

1.1.2. Sustainable Development Goals and Tourism

The UN has stated Sustainable Development Goals as a global goal from different perspectives. Global because all state members should commit and implement the Sustainable Development Goals on their future strategic plans and actions. Global, because of SDGs, in contrast to MDGs, are focused on both South and North Global. MDGs focused on how to impact on the sustainable development of emerging states and regions. In contrast, SDGs aim to improve the sustainable development of all regions, and they revolve around how actions in one specific region can impact positively on others. A clear example of this can be climate change actions; efforts taken on matured economies would have an impact everywhere in the world (Saarinen, 2019).

One of the essential global perspectives is the fact that SDGs can be implemented, merged with almost any industry. In conclusion, it results in the participation of all economic activities and stakeholders in the sustainable development of the region.

Table 3: Sustainable Development Goals

- Goal 1: End poverty in all its forms and everywhere

- Goal 2: End hunger, achieve food security and improve nutrition and promote sustainable agriculture

- Goal 3: Ensure healthy lives and promote well-being for all at all ages

- Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

- Goal 5: Achieve gender equality and empower all women and girls

- Goal 6: Ensure availability and sustainable management of water and sanitation for all

- Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all

- Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

- Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation

- Goal 10: Reduce inequality within and among countries

- Goal 12: Ensure sustainable consumption and production patterns

- Goal 13: Take urgent action to combat climate change and its impacts

- Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development

- Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity

- Goal 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

- Goal 17: Strengthen the means of implementation and revitalise the global partnership for sustainable development

Source: WTTC (2017).

For further details on the SDG, check:
https://sustainabledevelopment.un.org/topics/sustainabledevelopmentgoals

Shortly after the publication of The Agenda 30 for Sustainable Development and the statement of the SDGs, the approach of the research and academic community focused on the relationship between tourism and the current Sustainable Development Goals from many different outlooks.

Hughes and Scheyvens (2016) made one of the very first academic paths into the connection between SDGs and Tourism. They stated how vital is the tourism industry on the global growth of our economies and communities, and how important it should be for all economic activities to focus and be participants of the sustainable development of the territory.

Hughes and Scheyvens (2016) focus was on how the private sector and in particular, Multinationals could have an impact on the achievement of the Sustainable Development Goals by implementing a strategic Social Corporate Responsibility that followed the sustainability principles and guidelines.

In 2015, The United Nations General Assembly entitled 2017 as the International Year of Sustainable Tourism for Development (UN, 2015). With this declaration, the World Travel and Tourism Council aimed to encourage all private and public sectors, as well as non-governmental organisations, to boost the participation of the tourism industry toward sustainable development.

Saarinen and Rogerson (2014), made the connection between poverty alleviation and tourism. They stated that tourism as an economic activity has a direct influence on income and employment generation. However, they also manifested the importance of the quality and durability of the employment.

Furthermore, according to Kozak (2002) as tourists become more acknowledge, specialised and in some cases sensitised towards new trends and events, such as climate change, and sustainability, destinations urge to focus and review their competitiveness approach and planning.

To sum up, destinations need to encourage sustainable tourism at the same time as they include the sustainability principles in the planning and development of strategies and action plans to develop and grow as destinations and as communities.

1.2.   Destination Intelligence & Learning

As stated in previous chapters of this study, sustainability has become an essential factor for destinations to implement when planning and developing their strategies and policies. In regard to destination management and planning, Evans et. al (2003) state that there are three types of, Strategic, Tactical and Operational (Cited by Camprubi and Gassiot, 2018, p.12).

According to Evans et. Al (2003), strategic planning focuses on long-term objectives and aims to address high-level decision making and great complexed topics or areas (Cited by Camprubi and Gassiot, 2018, p.12).

Camprubi and Gassiot (2018, p. 9) define Strategic planning as:

"A decision-making method in the context of an organisation, which considers the complexity and changes in the environment of the organisations, with the aim of maintaining the competitiveness of the organisation."

As it can be observed, strategic planning involves competitiveness as an essential factor for destinations to develop and maintain. Moreover, as seen before, sustainable development is a competitive advantage; hence for its implementation and success, it is crucial to follow the strategic planning process.

According to Camprubi and Gassiot (2018) Strategic planning consists of the following phases:

- Internal and External Analysis
- Strategic Diagnosis
- Evaluation and Creation of the strategy
- Implementation and Monitoring of the strategy

Aligned with the objective of this study, it is relevant to analyse what tools and processes has the industry applied for the monitoring of the implementation of sustainable development strategies and policies.

1.2.1. <u>Measuring and Monitoring Sustainable Tourism</u>

It took a while for the academic world to address the connection between Tourism and SDGs. Nonetheless, as it has been previously mentioned, the concept of Sustainable Tourism has been part of the research focus for many years.

Sustainability has become an essential policy framework for tourism and destinations, guiding them on their forethought and development thinking (Saarinen, 2014).

When it comes to measuring and monitoring sustainability, according to Castellani and Sala (2010) and based on multiple pieces of research, it is a common and widely accepted tool used by the academic and research community.

Castellani and Sala, also stressed that indicators are most valuable for:

- The design Strategies and Action Plans for the development of the region, as it is easier to set numerical objectives to achieve.

- To facilitate the communication of the current situation and what the potential situations are to all stakeholders involved.

- To facilitate the monitoring and control of both progress and performance of the policies and actions implemented.

Furthermore, Torres and Saarinen (2014) state that many of the projects and papers carried out by institutions summon up indicators to evaluate and monitor the progress of the application of sustainability in the development of the region.

Regarding the measuring and monitoring of Sustainable Tourism, since 1990, the UNWTO itself has been defining measure indicators for sustainable tourism (Butler, 1993). Some authors such as Wheller (1993) and Hunter (1997) have stated the lack of meaning of sustainable tourism without indicators and monitoring tools to determine the effectiveness of the planning and developing strategies implemented by the destination or stakeholder (Cited by Torres and Saarinen, 2014).

Furthermore, in 2004, the UNWTO founded the International Network of Sustainable Tourism Observatories (UNWTO, 2020). The International Network for Sustainable Tourism Observatories is a UNWTO project composed by eighteen local organisations composed of all stakeholders involved in the tourism industry, which aim to support and encourage the constant improvement of sustainability and resilience through the monitoring of the industry performance and impacts.

One of the objectives or areas in which the INSTOs should direct their efforts is the Development of Issue Areas and Indicators. This objective encourages INSTOs to monitor specific areas and its development through a set of indicators, defined on the ISDTD.

In 2015 the UN along with the UN Statistics Division founded the Measuring Sustainable Tourism project which aims to unify concepts when it comes to sustainable tourism and also to include all economic, social and environmental factors and pillars on the statistical framework for measuring sustainability in the Tourism Industry (UNWTO, 2017).

The Measuring Sustainable Tourism project is also responsible for the definition of a battery of over 500 indicators included on the ISDTD.

As mentioned previously, some authors agree that sustainability could be a competitive advantage for the tourism industry. Martínez and Rodríguez (2015) pointed out that if destinations can address all economic, social and environmental issues and can control the impacts resulting from the sector's growth and direct them to the correct direction following the sustainability guidelines, this could become a competitive advantage. According to them, this is because destinations should address all these issues as any harm or damage on the social, economic or natural environments on the destination could directly lead to the loss of the destination's value.

1.2.2. <u>Indicators, Benchmarking & Sustainability as a Competitive Advantage</u>

When it comes to the analysis of a destination's competitiveness, many authors such as Dwyer & Kim (2003), Dymond (1997) and Ritchie & Crouch

highlight the importance of strategic planning for destinations to develop a competitive advantage (Cited by Martin and Tomáš, 2012, p. 99-101).

Benchmarking was first introduced as a competitiveness analysis model for manufacturing industries and corporations. When it comes to the Tourism Industry, Benchmarking has been used mainly focused on customer satisfaction, the accommodation sector and also on destination highlights and attractions (Kozak, 2002).

Kozak (2004, p. 41) defined Destination Benchmarking as:

"the continuous measurement of the performance of tourist destinations (strengths and weaknesses) not only against itself or other destinations in the same or in a different country but also against national/international quality grading systems by assessing both primary and secondary data for the purpose of establishing priorities, setting targets and gaining improvements in order to gain a competitive advantage."

Benchmarking allows destinations to understand what their positioning is and what are the best practices in the sector in the specific area that is being analysed. It also provides guidelines for destinations to implement the good practices that their competitors or the market-leading destination has currently in place.

Blázquez, Esteban and Molina (2011), remark that with the constant evolution and progress of the tourism activity and the tourists itself, the capability to gather, seize and analyse information has become a crucial ability for destinations to adapt and survive. Furthermore, Blázquez et al. (2011) point out that Benchmarking is an excellent governing tool, as it helps to understand, analyse, share knowledge and ultimately make decisions. It also provides destinations with innovation, better quality standards, and eventually, it boosts productivity.

2.   Indicator Systems & SDGs

As it has been exposed previously in this research, there is a clear connection between indicators and sustainability. In this chapter, the author aims to analyse different sources of indicators related to sustainability and their potential relation to the Sustainable Development Goals and its monitoring.

As stated by Torres and Saarinen (2014), there are various sets of indicators available for research. Ownership of researchers' experts on the matter such as Chris and Sirakaya (2006) and Blancas et al. (2010), and many more. Furthermore, as mentioned previously in this document, some institutions have also created sets of indicators to measure and encourage different regions and states to follow the guidelines of sustainable development in the tourism industry.

Due to time and availability of resources limitations for the development of this study, only two Indicators Systems have been selected for the following analysis. The reasoning behind the selection of these two indicators systems has been previously explained in the methodology of this study.

First and foremost, the ETIS, which had been funded by the European Commission to guide and provide resources for destinations in Europe to implement Sustainable Management. Although this system was created with the European Destinations as the primary target, the ETIS is suitable on a full scale of destinations worldwide, from municipalities to countries, it is also easy to implement and to comprehend. Moreover, it has been put in place by multiple destinations since its publication (Torres and Saarinen, 2014).

The main reason the ETIS has been selected to be part of this analysis is the fact that it is a global system, in terms of region and size of the destination that can implement it.

Second of all, the other indicator system selected to take part in this study is the previously mentioned publication, ISDTD, published by the World Tourism Organisation in 2004.

The ISDTD is a global indicator system since it includes the majority of the sustainable development fields and issues. Moreover, it is also global, as a wide range of destinations can implement it, with no limitations depending on the size of the destination, the type of destination or the tourism activity that takes place.

As mentioned previously in the methodology of this study, there are many publications and Indicators Systems published and available for research, systems such as the Green Growth Indicator System, which has been considered to be part of the study. Still, it has been ruled out since it focuses too much on the environmental pillar of sustainable development.

To sum up, for this study, the author has decided to take part in the global indicators system, global due to the potential implementation of each system by worldwide destinations of all sizes and systems that encompass all sustainable development pillars and areas.

On the following Table, allocation and analysis of each of the selected Indicators systems have been carried out, taking into account its potential connection to each of the Sustainable Development Goals previously presented. With the creation of this table, the author aims to study how each SDG could be measured and monitored through each system and its set of indicators.

Table 4: SDGs and Indicators' allocation

<u>SDG 1: End poverty in all its forms and everywhere</u>

- **ETIS:**
  - **B.3.1.** Direct tourism employment as a percentage of total employment in the destination
  - **B.3.2** Percentage of jobs in tourism that are seasonal
  - **B.4.1** Percentage of locally produced food, drinks, goods and services sourced by the destination's tourism enterprises

- **ISDTD**:

  - **2.9** Percentage of locals changing from traditional occupation to tourism over the previous year.

- ○ **9.1** Percentage of tourism businesses supporting local agriculture and aquaculture to maintain a fresh supply of accessible local foods.
- ○ **11.3** Percentage of business establishments open all year
- ○ **11.4** Percentage of tourist industry jobs which are permanent or full year
- ○ **11.5** Local unemployment rate in the off-season
- ○ **12.1** Percentage of goods and services purchased locally
- ○ **13.1** Ratio of income attributable to tourism versus traditional income-generating activities
- ○ **13.2** Ratio of local to "outsiders" directly employed by tourism

For this first SDG, most indicators for both systems have been allocated as a result of their connection to employment creation and income generation, which it is inevitable that it contributes to the prevention and alleviation of poverty among those employed by the tourism industry.

SDG 2: End hunger, achieve food security and improve nutrition and promote sustainable agriculture

- **ETIS:**
  - ○ **A.1.1:** Percentage of tourism enterprises/establishments in the destination using a voluntary certification/labelling for environmental /quality/sustainability and, or Corporate Social Responsibility.
  - ○ **B.4.1** Percentage of locally produced food, drinks, goods and services sourced by the destination's tourism enterprises

- **ISDTD:**

  - ○ **9.1** Percentage of tourism businesses supporting local agriculture and aquaculture to maintain a fresh supply of accessible local foods.
  - ○ **9.2** Percentage of employees in tourism establishments with access to healthy in-house food services.
  - ○ **9.3** Percentage of food handlers receiving food hygiene training Prevention, regulations (including hotels, restaurants, take away and street vendors)
  - ○ **11.3** Percentage of business establishments open all year

- ○ **11.4** Percentage of tourist industry jobs which are permanent or full year
- ○ **12.1** Percentage of goods and services purchased locally
- ○ **23.1** Percentage of catering waste which is recyclable and recycled
- ○ **23.2** Percentage of tourism establishments complying with safety and security standards (e.g. fire prevention, food safety and other health requirements, environmental standards)

For SDG 2, similar reasoning has been applied. It is thought that local purchasing of goods and services implies a direct impact on the local community economy and hence to hunger alleviation. For both systems, there have been allocated indicators that focus on how the tourism industry, tourism businesses can contribute directly to hunger alleviation by donating their food excess.

SDG 3: Ensure healthy lives and promote well-being for all at all ages

- **ETIS:**
  - ○ **A.1.1:** Percentage of tourism enterprises/establishments in the destination using a voluntary certification/labelling for environmental /quality/sustainability and, or Corporate Social Responsibility.
- **ISDTD:**
  - ○ **2.5** Number of social services available to the community which are attributable to tourism. (%)
  - ○ **2.6** Number of tourists per day, per week per km2.
  - ○ **2.7** Ratio of tourists to locals (average and peak day)
  - ○ **2.10** Percentage of housing affordable for residents
  - ○ **4.1** Percentage of tourism employees suffering increased fatigue and stress as a result of work
  - ○ **4.2** Percentage of tourism operators who provide day-care and other benefits for employees with children.
  - ○ **4.4** Percentage of tourism operators who provide transport for women returning from night shifts.
  - ○ **4.5** Number and coverage of health programs on drug abuse
  - ○ **8.1** Percentage of staff in tourism businesses with first aid training
  - ○ **20.1** Number of days when the quality of air is exceeding standards

- ○ **20.2** Number of warnings regarding the air pollution of the destination in major publications and guidebooks (would be done by a survey of these print sources)
- ○ **23.2** Percentage of tourism establishments complying with safety and security standards (e.g. fire prevention, food safety and other health requirements, environmental standards)

It can easily be recognised that both systems cover to a great extent, the health and well-being topic. This results from the believe that almost every indicator represents an impact on the life of the local community and the destination as an overall. All the strategies related to climate change, energy management, education, equality, etc. – will have an impact on the community's well-being. Hence the variety of topics and issues that the allocated indicators address, from air quality the approach of the tourism organisations of substance and drugs abuse within its employees.

SDG 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

- ● **ETIS:**
  - ○ **A.1.1:** Percentage of tourism enterprises/establishments in the destination using a voluntary certification/labelling for environmental /quality/sustainability and, or Corporate Social Responsibility.
- ● **ISDTD:**
  - ○ **2.11** Average distance to travel to work or school
  - ○ **13.3** Number and type of development programs in place (education, training, health, natural resource management, conservation etc.)
  - ○ **13.4** Number of scholarship and training opportunities for local youth (% of total)
  - ○ **13.5** Training funds spent per employee, frequency of training programmes and level of participation

Inversely to SDG 3, SDG 4 is one of the goals with less potential indicators identified that could help destinations' development within the sustainability principles. Nonetheless, from the three allocated indicators, two of them (A.1.1 and 13.3) tackle the topic through the implementation of programs and

strategies that promote equal and quality educational opportunities in the private and public sectors.

SDG 5: Achieve gender equality and empower all women and girls

- **ETIS**:
  - **C.3.1** Percentage of men and women employed in the tourism sector
  - **C.3.2** Percentage of tourism enterprises where a woman holds the general manager position.
- **ISDTD:**
  - **4.2** Percentage of tourism operators who provide day-care and other benefits for employees with children.
  - **4.3** Percentage of tourism operators who have regulations / made commitments regarding equal gender opportunities.
  - **4.4** Percentage of tourism operators who provide transport for women returning from night shifts.
  - **4.5** Percentage of employees who believe their gender has affected their job advancement, pay or benefits.
  - **4.6** Percentage of Women and Men of all tourism employment.
  - **4.7** Percentage of owner-operator tourism business run by women/men.
  - **4.8** Average income for women and men with tourism jobs

On SDG 5, tackling gender equality, it is clear that the indicators allocated are the ones that would help the destination identify economic and social gaps between gender, from fundamental information such as the difference in employment ratios to the glass ceiling factor.

SDG 6: Ensure availability and sustainable management of water and sanitation for all

- **ETIS:**
  - **D.3.2** Percentage of tourism enterprises separating different types of waste
  - **D.4.1** Percentage of sewage from the destination treated to at least secondary level before discharge

- ○ **D.5.1** Water consumption per tourist night compared to general population water consumption per resident night
- ○ **D.5.2** Percentage of tourism enterprises taking actions to reduce water consumption
- ○ **D.5.3** Percentage of tourism enterprises using recycled water
- ○ **E.8.2** Level of pollution in seawater per 100 ml (faecal coliforms, campylobacter)
- **ISDTD:**
  - ○ **9.3** Level of protection of water for irrigation of food crops and food processing;
  - ○ **12.3** Percentage of compliance of codes of conduct by tourists
  - ○ **12.2** Existence of customer code of practice and guidelines
  - ○ **18.1** Percentage of wastewater or greywater recycled
  - ○ **18.2** Number of establishments participating in water conservation programmes, applying water conservation policies and techniques, recycling treated wastewater (e.g. for irrigation purposes, hotels using water-saving shower heads, flush systems, advising guests on water saving, water issues, reusing of towels)
  - ○ **18.3** Water price per litre or cubic metre.
  - ○ **18.4** Percentage of the local population with access to treated water (UN Sustainable development indicators)
  - ○ **18.5** Percentage of sewage from the destination/site receiving treatment (also break out sewage from the tourism sector if possible)
  - ○ **18.6** Water saving (% reduced, recaptured or recyclable)
  - ○ **24.1** Visitor/local water usage
  - ○ **28.4** Application of environmentally friendly technologies and techniques (e.g. water, energy-saving devices, waste recycling, green purchasing, local sourcing) - % using

When it comes to SDG 6, it is clear that both systems cover the water management topic to a great degree. Mostly all indicators allotted are related to greywater and sewage treatment and management. However, ISDTD also covers water consumption guidelines and conducts, which are also important in the overall achievement of the goal by taking into account the efficient use of water as a limited resource.

SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all

- **ETIS:**
  - **D.6.1** Energy consumption per tourist night compared to general population energy consumption per resident night
  - **D.6.2** Percentage of tourism enterprises that take actions to reduce energy consumption
  - **D.6.3** Percentage of the annual amount of energy consumed from renewable sources (Mwh) compared to overall energy consumption at destination level per year
- **ISDTD:**
  - **16.1** Percentage of businesses participating in energy conservation programs, or applying energy saving policy and techniques
  - **16.2** Percentage of establishments (e.g. hotels) using renewable sources, generating own energy
  - **17.1** Percentage of establishments (e.g. hotels) using renewable sources, generating own energy
  - **17.2** Total consumption of fossil fuels in the destination for tourist transportation
  - **28.4** Application of environmentally friendly technologies and techniques (e.g. water, energy-saving devices, waste recycling, green purchasing, local sourcing) - % using

As for SDG 7, and how can the tourism industry take part in the sustainable use and management of energy, it must be said that the allotted indicators are not only related to the overall consumption of energy, but the type of energy consumed.

SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

- **ETIS:**
  - **B.1.3** Relative contribution of tourism to the destination's economy (% GDP)
  - **B.2.2** Occupancy rate in commercial accommodation per month and average for the year

- ○ **B.3.1** Direct tourism employment as a percentage of total employment in the destination
- ○ **B.3.2** Percentage of jobs in tourism that are seasonal
- **ISDTD:**
  - ○ **2.10** Percentage of housing affordable for residents
  - ○ **11.3** Percentage of business establishments open all year
  - ○ **11.6** Tourist arrivals by month or quarter (distribution throughout (And the results of management the year
  - ○ **11.7** Percentage tourism authority budget spent promoting off-peak and shoulder low season tourism
  - ○ **11.8** Average tourism wage/average wage in the community
  - ○ **11.9** Longevity of tourism businesses (rate of turnover)

With regards to SDG 8, the economic area is covered broadly by both systems. It is also certain that for this SDG, the indicators cover a wide range of areas, from primary, affordable assets to addressing the off-season issues and its economic impacts.

SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation

- **ETIS:**
  - ○ **A.1.1** Percentage of tourism enterprises/establishments in the destination using a voluntary certification/labelling for environmental /quality/sustainability and/or Corporate Social Responsibility
  - ○ **D.7.1** Percentage of local enterprises in the tourism sector actively supporting the protection, conservation and management of local biodiversity and landscapes
- **ISDTD**:
  - ○ **2.14** Mode and the average distance of travel to work or school
  - ○ **27.1** Annual levels of investment in public transport compared with infrastructures. Road infrastructure
  - ○ **27.2** Percentage of tourism businesses that have completed an Environmental Impact Assessment (EIA)

- **28.3** Percentage of establishments in the destination with formal certification (In systems and environmental each or all of EMS, ISO 14000, HACCP etc. or national equivalents)
- **28.4** Application of environmentally friendly technologies and techniques (e.g. water, energy-saving devices, waste recycling, green purchasing, local sourcing) - % using

As for SDG 9, there is a clear difference between both systems. One on hand, the coverage of ETIS in this area, is quite weak. The allocated indicators represent the use of certifications and programs that encourage sustainability or efficient use of resources, which is believed to promote innovation. On the other hand, ISDTD also tackles the use of certifications as part of the innovation promotion. However, some indicators address the capability of the public sector to promote innovation, as well.

SDG 10: Reduce inequality within and among countries

- **ETIS:**
  - **B.3.2** Percentage of jobs in tourism that are seasonal
  - **C.4.1** Percentage of rooms in commercial accommodation establishments accessible for people with disabilities
  - **C.4.2** Percentage of commercial accommodation establishments participating in recognised accessibility information schemes
  - **C.4.3** Percentage of public transport that is accessible to people with disabilities and specific access requirements
  - **C.4.4** Percentage of tourist attractions that are accessible to people with disabilities and, or participating in recognised accessibility information schemes
  - **E.8.5** Percentage of beaches accessible to all
  - **E.9.1** Percentage of the destination with an accessible tourism strategy/action plan, with agreed monitoring, development control and evaluation arrangement
  - **E.9.2** Percentage of commercial accommodation with rooms accessible to people with disabilities and or participating in recognised accessibility information schemes.

- ○ **E.9.3** The destination is equipped with an accessibility management office or person available to the public.
- ○ **E.9.4** Percentage of businesses that have a budget for accessibility improvements.
- ○ **E.9.5** Percentage of each category of transport in the destination that is accessible, i.e. public transport and private hire coaches, minibuses, taxis or minicabs
- **ISDTD:**
  - ○ **2.5** Number of social services available to the community
  - ○ **2.10** Percentage of housing affordable for residents
  - ○ **2.12** Number of residents who have left the community in the past year.
  - ○ **2.13** Number of immigrants taking tourism jobs in the past years
  - ○ **3.1** Access by locals to key sites
  - ○ **3.2** Frequency of visits by locals to key sites
  - ○ **3.3** Cost of access to key sites in hours of local wages
  - ○ **3.4** number of complaints by local residents regarding access to key sites.
  - ○ **7.1** Existence of disabled access programs including tourism industry infrastructures.
  - ○ **7.2** Percentage of attractions with wheelchair access.
  - ○ **11.8** Average tourism wage/average wage in the community
  - ○ **13.1** Ratio of income attributable to tourism versus traditional income-generating activities

Concerning SDG 10, it must be observed the variety of perspectives that the SDG implies as to inequalities reduction. However, the main topic tackled by most of the indicators allocated is accessibility, followed by the indicators that address the difficulties that the local community might be facing due to high volumes of tourism in the destination.

SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable

- **ETIS:**

- ○ **E.9.1** Percentage of the destination with an accessible tourism strategy/action plan, with agreed monitoring, development control and evaluation arrangement
  - ○ **D.1.2** Percentage of tourists and same-day visitors using local/soft mobility/public transport services to get around the destination
  - ○ **D.2.2** Percentage of tourism accommodation and attraction infrastructure located in 'vulnerable zones'
- **ISDTD:**
  - ○ **2.10** Percentage of housing affordable for residents
  - ○ **23.3** Existence of a contingency plan for tourists and visitors to the region in the event of incidents
  - ○ **23.2** Percentage of tourism establishments complying with safety and security standards (e.g. fire prevention, food safety and other health requirements, environmental standards)
  - ○ **29.1** Density of buildings per hectare (footprint and floor space per unit area
  - ○ **29.2** Percentage of total capacity used (average and peak)
  - ○ **29.3** Area impacted/loss of natural habitat/landscape.
  - ○ **29.4** Traffic generated from tourism
  - ○ **29.5** Percentage of the area designated for tourism purposes.
  - ○ **29.6** Extent and capacity of public transport

SDG 11 is a similar case as SDG 10, as there are many areas included in it. It should be noted, the difference between both systems. ETIS coverage of this topic is quite weak; the indicators allocated from these systems are mostly related to the planning and implementation of strategies to develop the destination (regions) within the sustainability principles. On a separate note, ISDTD has a broader coverage of the topic, and as it can be observed, more areas of this topic are addressed. Overall, most of the indicators allocated are related to the carrying capacity of the infrastructures and land in general.

SDG 12: Ensure sustainable consumption and production patterns

- **ETIS**:
  - ○ **B.4.1** Percentage of locally produced food, drinks, goods and services sourced by the destination's tourism enterprises

- ○ **D.1.2** Percentage of tourists and same-day visitors using local/soft mobility/public transport services to get around the destination
  - ○ **D.2.1** Percentage of tourism enterprises involved in climate change mitigation schemes — such as CO2 offset, low energy systems. — and 'adaptation' responses and actions
  - ○ **D.5.2** Percentage of tourism enterprises taking actions to reduce water consumption
  - ○ **D.6.3** Percentage of the annual amount of energy consumed from renewable sources (Mwh) compared to overall energy consumption at destination level per year
  - ○ **E.9.4** Percentage of businesses that have a budget for accessibility improvements.
  - ○ **E.9.5** Percentage of each category of transport in the destination that is accessible, i.e. public transport and private hire coaches, minibuses, taxis or minicabs
- **ISDTD:**
  - ○ **6.1** Number of places in the destination where information regarding sustainable tourism is available.
  - ○ **6.2** Percentage of visitors receiving information on sustainable tourism practices provided prior to their visit to the destination and at the destination.
  - ○ **11.1** Ratio of the number of tourists in peak month to lowest month.
  - ○ **11.2** Percentage of tourism authority budget spent promoting off-peak and shoulder seasons.
  - ○ **11.3** Percentage of business establishments open all year
  - ○ **11.5** Local unemployment rate in the off-season
  - ○ **28.1** Percentage of visitors who seek environmentally friendly and culturally sustainable (environmentally sensitive experiences, (exit Questionnaire)
  - ○ **28.2** Percentage of establishments and operators marketing sustainable, sensitive destination or products or green products or experiences
  - ○ **28.3** Percentage of establishments in the destination with formal certification (In systems and environmental each or all of EMS, ISO 14000, HACCP etc. or national equivalents)

- ○ **28.4** Application of environmentally friendly technologies and techniques (e.g. water, energy-saving devices, waste recycling, green purchasing, local sourcing) - % using

On the subject of SDG 12, it becomes clear that both systems encompass the topic significantly. For both systems, the selected indicators have been those who would help monitor and highlight how the destination can encourage sustainable consumption and production of goods and services. From producing and consuming locally to quality of employment, to the existence of conduct guidelines for customers. Not only taking into account the private sector but how the administration or public sector can encourage sustainable consumption and production within the destination.

SDG 13: Take urgent action to combat climate change and its impacts

- **ETIS:**
  - ○ **D.1.2** Percentage of tourists and same-day visitors using local/soft mobility/public transport services to get around the destination
  - ○ **D.1.4** Average carbon footprint of tourists and same-day visitors travelling from home to the destination
  - ○ **D.2.1** Percentage of tourism enterprises involved in climate change mitigation schemes — such as CO_2 offset, low energy systems. — and 'adaptation' responses and actions
  - ○ **D.2.2** Percentage of tourism accommodation and attraction infrastructure located in vulnerable zones.
  - ○ **D.3.1** Waste production per tourist night compared to general population waste production per person (kg)
  - ○ **D.3.2** Percentage of tourism enterprises separating different types of waste
  - ○ **D.3.3** Percentage of total waste recycled per tourist compared to total waste recycled per resident per year
  - ○ **D.4.1** Percentage of sewage from the destination treated to at least secondary level before discharge
  - ○ **D.5.2** Percentage of tourism enterprises taking actions to reduce water consumption
  - ○ **D.5.3** Percentage of tourism enterprises using recycled water

- ○ **D.6.3** Percentage of the annual amount of energy consumed from renewable sources (Mwh) compared to overall energy consumption at destination level per year
- ○ **D.7.1** Percentage of local enterprises in the tourism sector actively supporting the protection, conservation and management of local biodiversity and landscapes
- **ISDTD**:
  - ○ **17.1** Percentage of establishments (e.g. hotels) using renewable sources, generating own energy
  - ○ **17.2** Total consumption of fossil fuels in the destination for tourist transportation
  - ○ **19.1** Waste volume produced by the destination (tonnes) pa / Person years pa (by month)
  - ○ **19.2** Number of tourism establishments recycling their own waste (e.g. Composting)
  - ○ **20.1** Number of days when the quality of air is exceeding standards
  - ○ **20.2** Number of warnings regarding the air pollution of the destination in major publications and guidebooks (would be done by a survey of these print sources)
  - ○ **20.3** Contribution of the tourism industry to greenhouse gases
  - ○ **27.1** Annual levels of investment in public transport compared with infrastructures. Road infrastructure
  - ○ **27.3** Frequency, capacity of services and use levels (land, sea and air transport)
  - ○ **27.4** Level of air and ground emissions for passenger transport during traffic congestion and emission peak holiday periods to lowest (per passenger-km)
  - ○ **27.5** Number of passengers transported by local public transport for tourism/leisure purposes (also compared to the number of tourists using individual transport).
  - ○ **28.4** Application of environmentally friendly technologies and techniques (e.g. water, energy-saving devices, waste recycling, green purchasing, local sourcing) - % using

- ○ **28.5** Number and types of avenues/channels used to promote sustainable tourism (e.g. audio-visual and printed media, events, Internet)
- ○ **28. 6** Level of effort to engage locals in protection activities (number of meetings, programs, expenditure)
- ○ **29.7** Atmospheric pollution (total emission of greenhouse gases by airline/flight, emission per passenger-km

SDG 13 is one of the goals that are mostly addressed by both systems. For this goal, the indicators allotted are those that address to any degree the climate change challenge. From greenhouse emissions reduction, efficient use of resources to ratios of use of public transport.

SDG 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development

- **ETIS:**
  - ○ **D.4.1** Percentage of sewage from the destination treated to at least secondary level before discharge
  - ○ **D.7.1** Percentage of local enterprises in the tourism sector actively supporting the protection, conservation and management of local biodiversity and landscapes
  - ○ **E.8.1** Number of berths and moorings for recreational boating
  - ○ **E.8.2** Level of pollution in seawater per 100 ml (faecal coliforms, campylobacter)
  - ○ **E.8.3**Percentage of beaches awarded the Blue Flag
  - ○ **E.8.4** Area and volume of sand nourishment
- **ISDTD:**
  - ○ **9.3** Level of protection of water for irrigation of food crops and food processing
  - ○ **12.3** Percentage of compliance of codes of conduct by tourists
  - ○ **12.2** Existence of customer code of practice and guidelines
  - ○ **18.7** Level of contamination of seawater (faecal coliforms, campylobacter)
  - ○ **18.8** Level of contamination of seawater (heavy metals)
  - ○ **22.2** Percentage of total capacity used (average and peak)

- ○ **27.3** Frequency, capacity of services and use levels (land, sea and air transport)
- ○ **28.7** Number and extent of issues covered by the action plan (transport, tourism, land use and biodiversity, energy, water, waste, social issues, economic issues, etc.);

For SDG 14, the indicators allocated are those that address directly or indirectly the quality of the seawater, as well as the status of the water resources (beaches, coastal line, ports, etc.) that form the destination. It is essential to highlight that both systems cover this SDG to a great extent, with an emphasis on the pollution and quality of the seawater.

SDG 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity

- **ETIS:**
  - ○ **D.2.2** Percentage of tourism accommodation and attraction infrastructure located in 'vulnerable zones'
  - ○ **D.7.1** Percentage of local enterprises in the tourism sector actively supporting the protection, conservation and management of local biodiversity and landscapes
  - ○ **E.8.3** Percentage of beaches awarded the Blue Flag
  - ○ **E.8.4** Area and volume of sand nourishment
  - ○ **E.8.6** Total km of free beaches relative to total km of beaches
  - ○ **E.8.7** Number of days per year the beach/shore is closed due to contamination
- **ISDTD:**
  - ○ **12.3** Percentage of compliance of codes of conduct by tourists
  - ○ **12.2** Existence of customer code of practice and guidelines
  - ○ **15.1** Existence of protected area(s) at the destination
  - ○ **21.1** Percentage of site cleared for development
  - ○ **22.1** Number of tourists per square metre of the site (per square kilometre of the destination) – mean number/peak month average/ peak day.
  - ○ **22.2** Percentage of total capacity used (average and peak)

- ○ **27.3** Frequency, capacity of services and use levels (land, sea and air transport)
- ○ **28.7** Number and extent of issues covered by the action plan (transport, tourism, land use and biodiversity, energy, water, waste, social issues, economic issues, etc.)

SDG 15 has an unequivocal definition regarding the preservation and sustainable usage of land. The indicators allocated to this SDG are those which would help destinations track the use of the region's land over the years and those that promote the use of the land and infrastructures within the sustainability principles. From carrying capacity of the region, variation in land used for tourism purposes (accommodation, leisure, venues, etc.), to the existence of guidelines and programs to protect the ecosystems that shape the destination actively.

SDG 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

- **ETIS:**
  - ○ **C.2.1** Percentage of tourists who register a complaint with the police
- **ISDTD:**
  - ○ **1.2** Number of complaints by local residents
  - ○ **2.2** Frequency of community meetings and attendance rates
  - ○ **10.1** Total number of crimes reported involving visitors (by type)
  - ○ **31.1** Existence of policy on adult prostitution that reflects national laws.

SDG 16 has been quite different from the previous SDG 15, as it can be observed the number of indicators allocated is quite different from the trend. On the whole, most of the indicators selected are related to complaints reporting and local participation in policymaking.

SDG 17: Strengthen the means of implementation and revitalise the global partnership for sustainable development

- **ETIS:**

- ○ **D.2.1** Percentage of tourism enterprises involved in climate change mitigation schemes — such as CO2 offset, low energy systems. — and 'adaptation' responses and actions
- ○ **E.9.1** Percentage of the destination with an accessible tourism strategy/action plan, with agreed monitoring, development control and evaluation arrangement
- **ISDTD:**
  - ○ **2.1** Existence of a community tourism plan
  - ○ **2.3** Frequency of tourism plan updates
  - ○ **6.3** Percentage of tourism industry operators applying sustainable tourism principles in their strategic planning processes
  - ○ **14.1** Percentage of tourism businesses that have integrated their goals and fragmentation objectives with the destination tourism strategy
  - ○ **26.1** Degree of stakeholder participation in the planning process (e.g. number of meetings, dissemination channels and other consultation mechanisms used, level of participation)
  - ○ **26.2** Degree of stakeholder participation in the process of implementing plans (numbers/% involved in the review, advisory panels, etc.)
  - ○ **26.3** Existence of performance indicators designated for evaluating the plan implementation developed and used
  - ○ **26.4** Percentage of plan objectives which have been met;
  - ○ **30.1** Existence of a multi-stakeholder tourism plan

Source:

Last but not least, SDG 17 is also one of the topics that it is also tackled quite broadly by both systems. Most of the indicators allotted are related to the implementation of plans and programs to monitor the strategies and actions taken so that all stakeholders are compliant with the global sustainability plan.

3. Analysis and Discussion of Indicators and their connection to SDGs

Firstly, it is essential to mention that both Indicators Systems have been broken down into individual indicators. Then each of these indicators has been allocated on one or more Sustainable Development Goals based on its potential connection to its measuring and monitoring.

As it has been mentioned previously, both indicator systems have been selected based on how its sets of indicators comprise all global perspectives and areas of sustainability. However, there are some differences between both systems.

The most noticeable difference is the number of indicators that each system consists of. While ETIS has around 60 indicators, ISDTD has over 700 indicators, of which 29 are baseline indicators, which refer to indicators that cover the main issues presented by the system.

Related to the number of indicators, one of the main differences that have been detected is the in-depth information and topics that are covered by each system. As an example, ISDTD covers topics such as Sex Tourism and also Coping with Epidemics which currently has become an important topic and has a direct impact on both the tourism activity and local community, however, ETIS covers more general areas of the sustainable development, such as Destination Management, Climate change or Energy usage, with fewer indicators for each topic.

ETIS also provides detailed indicators on a separated section, based on specific issues or situations that the destination might be facing as well as the type of tourism that the destination focuses on.

Another difference between both systems is the outlooks that each system takes into account in regard to sustainable development. In particular, it has been identified that while ETIS has been created mainly focused on how the

destination can work towards sustainability, ISDTD covers as well how the destination can contribute to the preservation of the tourism activity and the improvement of tourists' satisfaction.

Starting to analyse each system contribution to the monitoring and measuring of the Sustainable Development Goals and the tourism industry participation in it, it must be acknowledged that despite all SDGs having indicators allocated, there are some gaps and weaknesses that should be addressed as well as some strengths that should always be implemented and encouraged.

In the following paragraphs, further analysis of each indicator system's contribution to sustainable development has been carried out.

At the outset, when it comes to SDG 1, apart from the fact that most if not all indicators are directly related to employment creation and income generation, which indeed would result in better economic conditions for those employed by the tourism industry. If we focus on the main targets and goals of this first SDG, it can be observed that the goal is to focus on the eradication of extreme poverty *"for all people everywhere"*. Having said that, it would be expected that the set of indicators covering this initial goal does not only cover the prevention of unemployment and the guarantee of a minimum income for the tourism industry employees in the local community but also how the industry can impact on the eradication of poverty everywhere. This is thought to be extremely important for the destinations located at or near a poverty risk area, in these cases the indicator 13.2 *Ratio of locals to "outsiders" directly employed by tourism* should be highlighted in the implementation of a benchmark, hence knowing in-depth if the destination businesses are employing and training locals instead of brining and employing foreigners to the destination.

Focusing on the eradication of poverty in the destination, although it is focused on the employment perspective of the goal, it is crucial to focus on the quality of the employment, which is covered by both systems. On this matter, indicators such as 11.5 and B.3.2 should be highlighted as well. In the tourism industry, seasonality is a critical matter as it will be expressed through this analysis. Controlling and addressing the seasonality of the tourism activity could have an outstanding impact on the global sustainable development of

the region. It is important to employ the local community, but it is as important to guarantee long term economic stability through this employment.

Subsequently, in regard to SDG 2 and the eradication of hunger, a similar connection has been identified. It can be observed that the indicators allocated are related to employment and income generation, as this is believed to alleviate hunger to those impacted economically, this would be monitored by indicators such as B.4.1 *Percentage of locally produced food, drinks, goods and services sourced by the destination's tourism enterprises,* which would be directly connected as well to SDG 1 and poverty eradication.

On a separate note, a very interesting point that could be tracked through indicator 9.2 *Percentage of employees in tourism establishments with access to healthy in-house food service*s, is the secondary target of improving nutrition, of SDG 2. By monitoring and encouraging the tourism industry businesses and organisations on the improvement of their catering offer not only to the tourists itself but to the employees, it is certain that the industry would be having a direct impact in particular to the enrichment of the local community health. Still, it overall would result in the achievement of this very important SDG. It is also interesting to highlight the indicator 9.3 *Percentage of food handlers receiving food hygiene training Prevention, regulations (including hotels, restaurants, take away and street vendors),* in the recent events of the COVID-19 pandemic, it has been displayed the importance of food security. The role that the restaurants and accommodation businesses play in these situations is also clear, so it is indubitable the importance of monitoring the management of food and its security. That being said, there is no doubt that the tourism industry can clearly contribute to the achievement of SDG 2 if the proper strategies and monitoring are implemented.

With regard to SDG 3, and as it has been said previously, there are many actions that would have an impact on the well-being of the local community and the tourists itself. However, if the specific targets of SDG 3 are analysed, there is at least one direct connection between the tourism industry and the SDG 3. In particular, it could be said that through indicators such as 20.1 *Number of days when the quality of air is exceeding standards* and 23.2 *Percentage of tourism establishments complying with safety and security standards,* the destination

could measure the impact of the air quality of the destination as well as the consequences and improvements when it comes to health issues due to improper management of food and other resources like water. It must be noted, that in regard to indicator 20.1, it would be difficult to calculate the impact of the tourism industry on the quality of the air, however it could be done by identifying the quality of the air during peak season compared to an off-season day.

However, it is clear that even though there are many indicators which address overall health, the ones that would be directly associated with the SDG 3 in order to monitor the impact of the tourism industry would be just a few, including indicators 2.5, 20.1, and 23.2. Nevertheless, it is important to mention the difficulty that this SDG represents, as there is an important gap between the health management sector and the tourism sector. Hence, it should be part of future research on how the tourism industry could impact more in-depth on this topic.

Moving on to SDG 4, it has a weak direct connection with the indicators allocated if the analysis is extrapolated only to the targets of this specific SDG. However, it is certain that if adapted there is a clear association between tourism and the promotion of basic and advanced educational opportunities; this can be identified through indicators 13.4 *Number of scholarship and training opportunities for local youth* and 13.3 *Number and type of development programs in place* which reflect the need to improve the management of scholarships and as well as the opportunities offered to progress from an educational and employment perspective. These topics are also addressed through SDG 4; however, this is done from a very basic point of view for the least developed countries and regions, hence for destinations located in these areas indicators such as 13.4 are extremely important to highlight.

On a different note, in regard to SDG 5 which aims to achieve gender equality, it is noteworthy the fact that almost all indicators allotted would directly contribute to the monitoring of this very important Sustainable Development Goal. As the specific targets of this SDG imply, all types of discrimination towards women should be eradicated. On this matter, it can be observed that

almost all indicators contribute to the monitoring of women discrimination on the issue of employment and job opportunity creation (see indicators C.3.1, 4.6 and 4.7). Related to this, leadership opportunities for women being a part of the specific targets of SDG 5, it is believed that indicators such as 4.7 *Percentage of owner-operator tourism business run by women/men* are of great importance for the monitoring of this Sustainable Goal.

Following, in regard to SDG 6, which addresses water management, it must be noted that as with SDG 5, there is a clear connection between the selected indicators and this Sustainable Goal. As it can be observed, indicators such as D.4.1 *Percentage of sewage from the destination treated to at least secondary level before discharge*, E.8.2 *Level of pollution in seawater per 100 ml (faecal coliforms, campylobacter)* and 18.5 *Percentage of sewage from the destination/site receiving treatment* do indubitably contribute to the measuring and monitoring of the quality of the water and its pollution levels which as it can be identified by its specific targets, are of great importance in this sustainable goal. As well as with the quality of the air, it might be difficult when calculating indicators such as E.8.2 to identify the responsibility or participation of the tourism industry on the pollution of the water. However, it is believed that analysing the difference from peak to off-season would give an insight into this.

Building up this set of specific targets there is also the point of water-efficient usage which can be recognised to be addressed through indicators D.5.1 *Water consumption per tourist night compared to general population water consumption per resident night*, 18.6 *Water saving (% reduced, recaptured or recyclable)* and 28.4 *Application of environmentally friendly technologies and techniques (e.g. water, energy-saving devices, waste recycling, green purchasing, local sourcing) - % using*. It is worth to highlight the potential contribution as well of indicators 12.2 *Existence of customer code of practice and guidelines* and 12.3 *Percentage of compliance of codes of conduct by tourists on the efficient use of water* as this is an issue that not only businesses can address from their internal management, but also by creating awareness and policies so that the external factor, hence the tourist are also taking part on the achievement of the Sustainable Development Goal 6.

SDG 7 *Ensure access to affordable, reliable, sustainable and modern energy for all* is a similar case as SDG 6, as the indicators allocated do also cover the topic to a great extent. It is apparent that indicators D.6.2 *Percentage of tourism enterprises that take actions to reduce energy consumption* and 16.1 *Percentage of businesses participating in energy conservation programs, or applying energy saving policy and techniques* would definitely contribute to the overseeing of the efficient use of energy by the destination. Likewise, indicators D.6.3 *Percentage of the annual amount of energy consumed from renewable sources (Mwh) compared to overall energy consumption at destination level per year* and 16.2 *Percentage of establishments (e.g. hotels) using renewable sources, generating own energy* do contribute as well to the monitoring of the consumption of renewable energies being this one the principle targets if this sustainable development goal focused on the management of the limited resources.

As noted previously in this study, the economy is one of the three main pillars of the sustainability concept. Hence it would be expected that the SDG 8, which focuses on the long-term stability of the economy in the region, would be addressed to a great extent. In fact, it must be highlighted that SDG 8 is one of the very few sustainable development goals that include the tourism industry directly in one of their specific targets. This specific target is related to the GDP that is generated by the tourism industry, thus as it can be observed that indicator B.1.3 *Relative contribution of tourism to the destination's economy (% GDP)* would unequivocally contribute to the monitoring of SDG 8. In addition to tourism participation in the region's GDP, SDG 8 also highlights the importance of the quality of employment in the tourism sector, which is also covered by indicators B.3.1. *Direct tourism employment as a percentage of total employment in the destination* and 11.3 *Percentage of business establishments open all year*; this last indicator is very interesting as it contributes to the monitoring of the employment generation throughout the year at the same time that highlights the importance of the seasonality issue that has been previously raised.

All in all, it has been observed that the tourism industry can certainly impact global sustainability specifically on the issues and topics addressed by SDG 8,

along with the fact that both systems analysed have been proved to contribute directly to its monitoring.

As for SDG 9 *Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation,* it must be noted that this topic has a wide variety of perspectives and subcategories. Nonetheless, even though there is not an implicit connection, as seen on the previous SDG, there are some indicators that would contribute to the monitoring of this sustainable development goal. One connection that is very interesting is in regard to indicators A.1.1 *Percentage of tourism enterprises/establishments in the destination using a voluntary certification/labelling for environmental /quality/sustainability and/or Corporate Social Responsibility*, 28.3 *Percentage of establishments in the destination with formal certification* and 28.4 *Application of environmentally friendly technologies and techniques*. Part of this SDG 9 is to upgrade infrastructures and industries and make them more sustainable; hence it is certain that these indicators would reflect the number of tourism businesses and organisations contributing to the achievement of this sustainable development goal.

Altogether, it could be said that for SDG 9 there is a great connection from both the indicators towards its monitoring, as well as the contribution of the tourism industry towards the fulfilment of SDG 9.

When it comes to SDG 10, there are a couple of things to highlight. First, despite the variety of topics addressed by this sustainable development goal, the allocated indicators only cover a couple of those. However, the second thing to highlight is the fact that there is a clear connection between the indicators allotted and the SDG 10. The mentioned connection precisely relies on the fact that by aiming at the encouragement of the removal of all barriers for everyone regardless of gender, disability, sex or economic and social status, all the indicators that reflect discriminations of any type, would be directly contributing to the monitoring of this SDG. Some clear examples of this association would be indicators 2.13 *Number of immigrants taking tourism jobs in the past years* if looking into policies that would promote inclusivity, 3.3 *Cost of access to key sites in hours of local wages* to have an insight of the economic difference and discrimination that the local community might be going

through, however, there is no doubt that the strongest and most direct connection between SDG 10 and the selected indicators are focused on the accessibility topic. This probably results from the fact that accessibility has become in the recent years a very important issue or area in which the whole industry has focused, in order to guarantee equality and the same opportunities to those with some kind of disability or limitation.

Despite the fact that there is this clear connection in terms of monitoring and impact of the industry, it is interesting to observe that almost all indicators address physical disabilities. It would be very interesting for the set of indicators to address mental health disabilities as well. In addition, it can be regarded that the indicators do also approach equality when it comes to the economic outlook of the topic, with indicators 11.8 *Average tourism wage/average wage in the community* and 13.1 *Ratio of income attributable to tourism versus traditional income-generating activities*, which would help identify economic inequalities for those employed or working for the tourism industry.

SDG 11 *Make cities and human settlements inclusive, safe, resilient and sustainable*, is also a clear example of the connection between tourism and the achievement of sustainable development. SDG 11 focuses on the development of the region or city and its infrastructures within the sustainable guidelines, including public transport, green areas and parks, and quality of air and other resources. Hence at it has been seen previously with other SDGs and some indicators that might apply to more than one sustainable goal, there are several indicators allocated which would directly contribute to the measuring of this goal, some examples would be 2.10 *Percentage of housing affordable for residents* and E.9.1 *Percentage of the destination with an accessible tourism strategy/action plan, with agreed monitoring, development control and evaluation arrangement*.

Further with the analysis, in regard to SDG 12 *Ensure sustainable consumption and production patterns*, it must be noted that there is a similar situation as with SDG 11. It can be observed that on SDG 12, the indicators allocated might have been discussed before and allocated to other SDGs. However, it is interesting to highlight the clear connection between the allotted indicators

and this sustainable development goal. To be more specific, since SDG 12 focuses on the encouragement of companies and organisations to adopt sustainable policies and plans, emphasising the policies that address resource management. On this matter, it is clear that indicators such as D.2.1 *Percentage of tourism enterprises involved in climate change mitigation schemes — such as CO2 offset, low energy systems.— and 'adaptation' responses and actions*, D.6.3 *Percentage of the annual amount of energy consumed from renewable sources (Mwh)* and D.5.2 *Percentage of tourism enterprises taking actions to reduce water consumption* would directly contribute to the monitoring of SDG 12. As it can be observed for this SDG, it is necessary to highlight the participation of the ETIS compared to ISDTD.

Moving forward to SDG 13 *Take urgent action to combat climate change and its impacts,* it can be observed that a lot of indicators have been associated with this sustainable development goal. As mentioned previously, all these indicators reflect actions or information on how the tourism industry could contribute to the mitigation of climate change. However, looking into those specific indicators that could directly monitor the progress of this SDG 13, it must be noted that even though, SDG 13 includes direct implementation of strategies that would have an impact on the mitigation of climate change, this particular SDG also emphasises the importance of the administration role on the achievement of this goal, as well as the importance of creating awareness and information availability for all stakeholders involved to take part in this. On this matter, taking into account the perspective from which this SDG is focused, it could take part in it indicators such as D.7.1 *Percentage of local enterprises in the tourism sector actively supporting the protection, conservation and management of local biodiversity and landscapes* which would reflect the efforts and success of the administration's campaigns and policies set up to encourage the tourism industry to work within the sustainability principles. However, it is a bit unclear which of the indicators would directly contribute to the measuring and monitoring of this sustainable goal. From the author's view, it would be necessary to develop indicators towards the administration role in the sustainable tourism policy makings and its awareness creation among tourists and businesses, indicators such as 28.5 *Number and types of avenues/channels used to promote sustainable tourism*

(e.g. audio-visual and printed media, events, Internet) and 28. 6 *Level of effort to engage locals in protection activities (number of meetings, programs, expenditure)*, nevertheless, it is still believed that further investigation and indicator development should be carried out in order to guarantee the contribution to the measuring of SDG 13.

On a different note, and getting back to the general trend identified until now, in regards to SDG 14 *Conserve and sustainably use the oceans, seas and marine resources for sustainable development*, it is important to mention the fact that in this particular case this sustainable development goal does focus on the direct impacts and actions that would mitigate the damage and erosion of the marine ecosystems and soil.

On this matter, it is important to highlight the connection to this SDG 14 of indicators E.8.2 *Level of pollution in seawater per 100 ml (faecal coliforms, campylobacter)*, 18.7 *Level of contamination of seawater (faecal coliforms, campylobacter)* and *18.8 Level of contamination of seawater (heavy metals)*, all these indicators address the pollution and quality of the seawater directly, however, in order to identify how the tourism industry is having an impact on this, it would be interesting to analyse the pollution associated to the tourism activity of cruises, recreative boats, etc.

Carrying on with the analysis, next is SDG 15 *Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity*. In concordance with the previous SDG, this sustainable development goal focuses on the preservation of the terrestrial ecosystem, natural habitats and its biodiversity. Having said that, it is clear that there is a connection between some of the allocated indicators and this SDG.

Specifically, indicators such as 21.1 *Percentage of site cleared for development* do clearly reflect how the tourism industry can impact on the achievement of this SDG, in this particular case the connection relies on the fact that by monitoring the percentage of land that is cleared and designated every year for tourism businesses infrastructure development it would give an indication of the impact of the tourism industry on the preservation of the natural or green spaces and a trend of the destination practices. Moreover, it is believed

that indicators like 15.1 *Existence of protected area(s) at the destination* do also provide insight on the destination's intentions and capabilities to preserve and conserve the destination's natural green areas, an issue that is part of SDG 15.

All in all, it can be said that SDG 15 could be monitored through some of the indicators selected, hence the strong connection between the tourism industry and the achievement of this sustainable development goal is also clear.

When it comes to SDG 16 *Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels*, as it has been previously denoted, it has been difficult to associate indicators that would contribute to the measuring of this sustainable goal. It must be said that the SDG itself implies, to a great extent, the role of the administration to guarantee full and equal access to justice for everyone in the destination. However, it must be noted as well that the few indicators allotted would actually help to some degree to the monitoring of this very particular issue.

As an example, indicators C.2.1 *Percentage of tourists who register a complaint with the police* and 1.2 *Number of complaints by local residents* are believed to perfectly contribute to the tracking of the violence situation at the destination which is one of the main targets of this SDG. Even though it is quite unclear how the tourism industry alleviates the violence in the destination, it is thought that the perspective of the tourists would reflect the situation very well.

On a different matter, SDG 16 also addresses the policymaking and the transparency of the processes and institutions. On this, the connection that has been identified between the tourism industry and this SDG is exemplified by indicator 31.1 *Existence of policy on adult prostitution that reflects national laws*. This indicator reflects the adoption of national laws into particular industries; this indicator aims to monitor the number of businesses and organisations in the tourism industry and in particular the accommodation sector that includes internal policies and practices to prevent or manage prostitution that might occur at the hotel or its surroundings. All in all, despite the difficulties of allocating indicators, it can be said that there is a connection

between this Sustainable Development Goal and the tourism industry, as well as the connection of some of the indicators selected to its monitoring.

Last but not least, SDG 17 *Strengthen the means of implementation and revitalise the global partnership for sustainable development*. Despite the fact that this last SDG is not directly encompassed on any of the sustainability pillars (social, economic and environmental), it could be said that it is one of the most important SDGs. SDG 17 focuses on the compliance of all stakeholders for the implementation and monitoring of sustainable development plans and strategies. Having said that, it is interesting to highlight the connection identified between some of the indicators allocated and this very particular SDG.

Indicators such as 14.1 *Percentage of tourism businesses that have integrated their goals and fragmentation objectives with the destination tourism strategy*, 26.1 *Degree of stakeholder participation in the planning process*, 26.2 *Degree of stakeholder participation in the process of implementing plans*, 26.3 *Existence of performance indicators designated for evaluating the plan implementation developed and used*, 26.4 *Percentage of plan objectives which have been met* and 30.1 *Existence of a multi-stakeholder tourism plan* clearly reflect the levels of the tourism industry stakeholders on their commitment to implement and monitor the sustainable development plans and policies set up on a national level as well as their individual contribution to the creation of strategies and policies of their own. Nonetheless, SDG 17 focuses as well on other areas in which the different stakeholder can contribute together to the sustainable development of the region through the creation of partnerships between them, that being said it would be interesting to develop indicators and research on how the tourism industry stakeholders could contribute to the creation of partnerships focused on funding generation and the increase of R&D, as well as how the tourism industry could contribute to the provisioning of economic opportunities for the least developing countries which is a very important topic on this Sustainable Development Goal 17.

From the analysis of SDG 17 and the allocated indicators, it can be observed that in this case, the role of ISDTD is quite significant compared to the participation of ETIS.

As an overview of the previous analysis, it can be said that both indicators systems have great participation in the measuring and monitoring of the Sustainable Development Goals. As observed, some systems have better coverage of specific SDGs; however, these are very specific cases.

As it has been mentioned previously in this study, each SDG has a variety of specific targets. In order to complete and validate this analysis, Table 5 has been created for the purpose of summarizing and adding value to the connection of the indicators selected and their association to the measuring of the Sustainable Development Goals. This process has been focused on the contribution of each of the indicators to any of the specific targets that constitute the particular SDG. To give a clear vision of how this final selection of indicators has been carried out, an example can be observed for SDG 5, and its target 5.1 End all forms of discrimination against all women and girls everywhere. On this case, the indicator C.3.1 *Percentage of men and women employed in the tourism sector* represents on a global scale the potential discriminations that are happening in the tourism industry. On the other hand, an indicator such as 4.3 *Percentage of tourism operators who have regulations / made commitments regarding equal gender opportunities* would not provide reliable data on the existence or not of discrimination of women in regard to employment opportunities, which is the ultimate objective of this target. This kind of reasoning has been applied for each of the previously selected indicators in order to create the following table.

Table 5: SDGs, Targets and Selected Indicators

SDG	SDG Target	Indicator	Outline
SDG 1: End poverty in all its forms and everywhere	**1.2** By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions	• **13.2** Ratio of locals to "outsiders" directly employed by tourism	The focus of this SDG and the indicators selected aim to measure the employment created by the tourism industry as well as the quality
		• **B.3.1.** Direct tourism employment as a percentage of total	

	according to national definitions	employment in the destination	of the employment (permanent, not seasonal) in order to guarantee a minimum income to the people, locals or outsiders employed by tourism.
		● **11.4** Percentage of tourist industry jobs which are permanent or full year	
		● **13.1** Ratio of income attributable to tourism versus traditional income-generating activities	
SDG 2: End hunger, achieve food security and improve nutrition and promote sustainable agriculture	**2.3** By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers […] and opportunities for value addition and non-farm employment	● **B.4.1** Percentage of locally produced food, drinks, goods and services sourced by the destination's tourism enterprises	The selected indicators do contribute directly to the measuring of SDG2, as this focuses in, hunger alleviation, nutrition improvement and efficient use of resources and food.
	2.2 By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children […] pregnant and lactating women and older persons	● **9.2** Percentage of employees in tourism establishments with access to healthy in-house food services	

	2.1 By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round	● **23.1** Percentage of catering waste which is recyclable and recycled	
SDG 3: Ensure healthy lives and promote well-being for all at all ages	**3.9** By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	● **20.1** Number of days when the quality of air is exceeding standards	SDG 3 addresses many topics related to the well-being of the local and other region's population. The indicators selected address in fact, direct effects of the tourism pollution generation on the overall health situation. As well as the participation of the tourism activity on the improvement of health and safety measures and infrastructures.
	3.D Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks	● **23.2** Percentage of tourism establishments complying with safety and security standards	
	3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	● **2.5** Number of social services available to the community which are attributable to tourism.	
SDG 4: Ensure inclusive and	**4.4** By 2030, substantially increase	● **13.4** Number of scholarship and	Indicators selected will contribute to

equitable quality education and promote lifelong learning opportunities for all	the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship	training opportunities for local youth	the measuring of the youth accessibility to advanced educational opportunities as well as the participation of the tourism industry on the implementation of scholarships.
		• **13.3** Number and type of development programs in place	
SDG 5: Achieve gender equality and empower all women and girls	**5.1** End all forms of discrimination against all women and girls everywhere	• **C.3.1** Percentage of men and women employed in the tourism sector	The selected indicators contribute to the measuring of the discrimination in employment by gender in the tourism industry, as well as the existence of the glass ceiling barrier for women to lead the sector.
	5.5 Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life	• **4.7** Percentage of owner-operator tourism business run by women/men.	
SDG 6: Ensure availability and sustainable management of water and sanitation for all	**6.3** By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	• **D.4.1** Percentage of sewage from the destination treated to at least secondary level before discharge	The chosen indicators directly contribute to the measuring of the quality of the water and the participation of the tourism industry in its improvement or deterioration.
		• **E.8.2** Level of pollution in seawater per 100 ml	

	6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	● **28.4** Application of environmentally friendly technologies and techniques	
SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all	**7.3** By 2030, double the global rate of improvement in energy efficiency	● **16.1** Percentage of businesses participating in energy conservation programs, or applying energy saving policy and techniques	The indicators associated with SDG 7 focus on the objective of efficient use of energy by implementing energy-saving policies and technology as well as the use of renewable or green energies by the tourism industry.
		● **D.6.2** Percentage of tourism enterprises that take actions to reduce energy consumption	
	7.2 By 2030, increase substantially the share of renewable energy in the global energy mix	● **16.2** Percentage of establishments (e.g. hotels) using renewable sources, generating own energy	
SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and	**8.5** By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value	● **B.3.1.** Direct tourism employment as a percentage of total employment in the destination	Focusing on the direct impact of the tourism industry on the region's GDP, as well as the stability and long-term vision of the economy with quality of
		● **11.3** Percentage of business	

decent work for all		establishments open all year	employment and the capability of the businesses to maintain the activity throughout the year
	8.9 By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products	● **B.1.3** Relative contribution of tourism to the destination's economy (% GDP)	
		● **A.1.1** Percentage of tourism enterprises/establishments in the destination using a voluntary certification/labelling for environmental /quality/sustainability and/or Corporate Social Responsibility.	
SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation	**9.1** Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	● **A.1.1** Percentage of tourism enterprises/establishments in the destination using a voluntary certification/labelling for environmental /quality/sustainability and/or Corporate Social Responsibility.	The selected indicators address the participation of the tourism industry in the creation and implementation of strategies and policies to boost sustainability.
		● **28.4** Application of environmentally friendly technologies and techniques	
SDG 10: Reduce inequality within and among countries	**10.2** By 2030, empower and promote the social, economic and	● **2.13** Number of immigrants taking tourism jobs in the past years	The chosen indicators to monitor SDG 10, address inequalities

	political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status	● **E.9.5** Percentage of each category of transport in the destination that is accessible, i.e. public transport and private hire coaches, minibuses, taxis or minicabs	in economic, employment and physical or mental disabilities discriminations, as well as the inequalities that the local community might suffer due to the tourism activity.
	10.1 By 2030, progressively achieve and sustain income growth of the bottom 40 percent of the population at a rate higher than the national average	● **13.1** Ratio of income attributable to tourism versus traditional income-generating	
SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable	**11.1** By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums	● **2.10** Percentage of housing affordable for residents	Focused on several of the SDG targets, addressing Housing issues due to the pressure of the accommodation sector, accessibility in the destination as well as the preservation of the area and the land used for the industry growth.
	11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with	● **E.9.1** Percentage of the destination with an accessible tourism strategy/action plan	

	disabilities and older persons		62
	11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries	• **29.5** Percentage of the area designated for tourism purposes.	
SDG 12: Ensure sustainable consumption and production patterns	**12.6** Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle	• **D.2.1** Percentage of tourism enterprises involved in climate change mitigation schemes	The selected indicators will contribute to the monitoring of SDG 12 by tracking the adoption of the tourism industry of the policies and campaigns to promote and implement sustainability
	12.2 By 2030, achieve the sustainable management and efficient use of natural resources	• **D.5.2** Percentage of tourism enterprises taking actions to reduce water consumption would directly contribute to the monitoring	
		• **D.6.3** Percentage of the annual amount of energy consumed	

		from renewable sources (Mwh)	
	12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses	• **23.1** Percentage of catering waste which is recyclable and recycled	
	12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse	• **D.3.3** Percentage of total waste recycled per tourist compared to total waste recycled per resident per year	
SDG 13: Take urgent action to combat climate change and its impacts	**13.3** Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	• **D.2.1** Percentage of tourism enterprises involved in climate change mitigation schemes — such as CO2 offset, low energy systems. — and 'adaptation' responses and actions	The associated indicators focus on addressing all kind of strategies taken by the tourism industry to mitigate Climate Change. Furthermore, these that focus on the creation of awareness and the encouragement of implementing sustainable policies within the industry.
		• **D.7.1** Percentage of local enterprises in the tourism sector actively supporting the protection, conservation and management of local	

		biodiversity and landscapes	
		● **28.5** Number and types of avenues/channels used to promote sustainable tourism	
SDG 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development	**14.1** By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution	● **E.8.2** Level of pollution in seawater per 100 ml ● **D.4.**1 Percentage of sewage from the destination treated to at least secondary level before discharge	The chosen indicators approach directly the impact of the tourism industry on the quality of the seawater. As well as the capacity of the destination to manage efficiently water as a resource.
SDG 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity	**15.1** By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	● **21.1** Percentage of site cleared for development	The indicator associated with SDG 15, directly measures the impact and path of the tourism industry on the preservation and conservation of land in the destination.
SDG 16: Promote peaceful and inclusive	**16.1** Significantly reduce all forms of violence and related	● **C.2.1** Percentage of tourists who register a	For SDG 16, the allocated indicators address the

societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	death rates everywhere	complaint with the police	violence factor of the destination from the tourist perspective, as well as the implementation of policies and strategies to prevent prostitution and all kinds of abuse by the industry businesses and organisations.
	16.3 Promote the rule of law at the national and international levels	● **31.1** Existence of policy on adult prostitution that reflects national laws	
SDG 17: Strengthen the means of implementation and revitalise the global partnership for sustainable development	**17.16** Enhance the global partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the sustainable development goals in all countries, in particular developing countries	● **14.1** Percentage of tourism businesses that have integrated their goals and fragmentation objectives with the destination tourism strategy	The indicators selected to monitor SDG 17, are those that address the commitment of the tourism industry and all the stakeholders, in the planning and implementation of sustainability strategies and policies.
		● **26.1** Degree of stakeholder participation in the planning process	
		● **26.3** Existence of performance indicators designated for evaluating the plan implementation developed and used	
		● **30.1** Existence of a multi-stakeholder tourism plan	

4.　　**Conclusions and Future Research**

For decades the research community has been addressing the tourism industry and its connection with sustainability. One of the main topics addressed in regard to sustainability is sustainable development. On this matter, international organisations like the United Nations have put all their efforts into creating awareness and encouraging all their state members to follow the guideline of sustainability.

As it has been disclosed in this study, the UN has been involved in the creation of different plans and programs to encourage sustainable development, The Agenda 21, Millennium Development Goals and the Sustainable Development Goals. The Sustainable Development Goals have been constituted to boost sustainability in all industries and globally, this is what differentiates it from all the other plans implemented before.

This study has aimed to analyse the potential connection between the tourism industry and the Sustainable Development Goals set by the UN. For the last 30 years, the UN has put a lot of effort into the promotion of Sustainable Development within its member states. With its first plans, Agenda 21 and the Millennium Development Goals, the UN aimed to address critical issues and situations that the least developed countries were facing, like extreme poverty and AIDS. After both these plans, the UN released the Sustainable Development Goals in 2015. The SDGs are a change on the pattern of any other plan the UN had created before. SDGs have been created on a global perspective, aimed to be implemented by all countries, developed and least developed, and for all industries to take part in. Hence, the objective of this study is to understand the potential contribution of the tourism industry on the achievement of the SDGs and global sustainable development.

In order to give an answer to this first objective, secondary goals have been set.

One of these secondary objectives is to identify and select two indicators systems to then analyse in regard to their connection to the Sustainable Development Goals. To identify which indicators systems to take part in the study, certain criteria were considered. In particular, the main characteristics

needed for the study were for these indicator systems to include all sustainability pillars. Hence it was a must for these systems to include indicators addressing economic, social and environmental issues. Furthermore, it was also taken into account the stakeholders that were included in these systems, including destination management, public administration, local businesses and organisations, as well as the local community and the tourists themselves. All these criteria have been found on both of the indicators systems chosen, the ETIS and the ISDTD. Apart from the mentioned criteria, these indicators systems are very well-known among the research community and have been discussed many times and implemented to a certain extend. The fact that these are well recognised within the tourism sector has been taken into account in the decision-making process. Even though there are many indicator systems available for research, and not all of them have been analysed or considered for the development of this analysis, it can be said that this secondary objective has been met. As will be further explained in this chapter, both indicator systems have been appropriate for this prospective analysis.

Going into more detail and focusing on objective two of this study, once the suitable indicator systems have been selected, an analysis of the potential connection of each system to each of the 17 Sustainable Development Goals has been carried out.

It has been displayed that indeed each SDG has a potential connection with different sets of indicators that will directly contribute to its measurement. By allocating already existent and well-known sets of indicators that have been used previously in other researches and studies to each SDG, it has been established that with the proper sources of information, the SDGs can be measured through the tourism industry.

It must be noted that the relation of the tourism industry and the measuring of the SDGs can be confirmed on a very particular area of each SDG. That is to say, that each SDG consists of multiple targets which address a variety of issues and topics. For each SDG, 5 different topics might be addressed through 6 different targets. What has been observed from the analysis carried out, is that with the indicator systems selected not all targets have been addressed.

Despite this, it can be confirmed that through the selected indicators and the corresponding indicator system, it is possible to monitor and measure the Sustainable Development Goals in the tourism industry. As it can be observed in the analysis of each SDG and the allocated indicators, all SDG have at least one indicator allotted which would directly contribute to a specific target.

When it comes to each system contribution, it is obvious that it is not possible to measure the overall SDG, but the contribution of the specific industry. When analysing each system contribution, it must be noted the balance of participation in terms of indicators allocated. While ISDTD has contributed with a total of 28 indicators, ETIS has contributed with 21. However, it is worth noting some differences on the SDGs that each system addresses through its indicators. As it can be observed, ISDTD approaches sixteen of the seventeen SDGs, while ETIS covers thirteen.

Last but not least, each system has more detailed coverage of some of the SDGs, in terms of the number of indicators allocated. As an example, ISDTD, according to the analysis addresses quite well, with four indicators, SDG 17, which focuses on the implementation of the SDG and the commitment of all the stakeholders. On the other hand, ETIS covers quite well, with four indicators as well, SDG 12, which addresses the encouragement of sustainable consumption and production of goods and services. In terms of differences, as it can be observed in the analysis of each system and its potential connection to the SDGs, each system has different characteristics. While ISDTD includes more quantity of indicators, hence addresses in a more detailed way and with a higher number of issues, ETIS features more generic indicators. Apart from each system differences, through the analysis, it has been detected that in some cases both systems do not address topics sufficiently, like with SDG 13 and the role of the public administration in the awareness creation on sustainable development. Despite that, in the end, it can be said that both systems are adequate for the measurement and monitoring of the SDGs. Conclusively, objectives two and three of this study can be confirmed to be fulfilled.

In order to conclude the analysis, and aligned with the fourth objective of this study, a final table has been created, aiming to provide and synthesise the

connection between the indicator systems with the Sustainable Development Goals and their targets. The final table gathers all those indicators that after the allocation and deep analysis are reliable to contribute best to the measuring and monitoring of each SDG. This table represents a prospective work of how tourism could measure its contribution to the achievement of the Sustainable Development Goals.

Despite the positive outcome of this study with the confirmation of the connection between the tourism industry and the monitoring of the Sustainable Development Goals, during the development of the study, it has been observed the existence of opportunities for future research.

As it has been pointed out throughout the document, but specifically on the analysis of the connection between tourism and the Sustainable Development Goals, some gaps have been detected. To start with, it would be of great value to develop further analysis and construction of sets of indicators explicitly addressing the implementation and monitoring of the SDGs, so that the research community and the tourism industry can have complete insight on how to monitor their contribution to the achievement of SDGs. As stated previously in this study, the connection that has been disclosed focuses on particular areas of each SDG.

In some cases, the contribution focuses as well on the impact on the same region or destination. However, it is encouraged for future academic research to develop further analysis on how the tourism industry could have a more significant impact on each SDG, focusing on the global perspective of these and addressing as many targets and topics as possible. So not only how it can contribute to the implementation of sustainability in the destination, but how through actions and strategies applied in the industry, it could have an impact on the spread of sustainability outside this territory. Furthermore, it has been identified as a research opportunity, to look into the role of the public administration in policymaking and awareness creation among its territory. As highlighted in the analysis of this study, with the indicator systems selected, it has been observed that it lacks the importance of the public administration role in the encouragement and promotion of sustainable development, and how to measure its work on this field.

Concerning other future research opportunities, it was part of the initial plan of this study, to validate the connection and the indicators selected through the execution of a benchmark of different destinations. This benchmark would provide accurate data on the effectiveness of the indicators. And in the case of positive outcomes, would allow destinations to compare themselves with their competitors or market leader in terms of sustainability and alignment with the Sustainable Development Goals.

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