SERVEI DE SISTEMES
D'INFORMACIÓ GEOGRÀFICA
I TELEDETECCIÓ
Universitat de Girona

Unlocking Geographical Information from Academia: an Open Source WebGIS Solution

Bruno Neves, António M. Rodrigues, Teresa Santos, Sérgio Freire

Centro de Estudos de Geografia e Planeamento Regional
Faculdade de Ciências Socias e Humanas . Universidade Nova de Lisboa

FCSH FACULDADE DE CIÊNCIAS
SOCIAIS E HUMANAS
UNIVERSIDADE NOVA DE LISBOA

FCT
Fundação para a Ciência e a Tecnologia
MINISTÉRIO DA CIÊNCIA, TECNOLOGIA E ENSINO SUPERIOR

1. e-GEO Research Centre for Geography and Regional Planning

2. Geographic Information

3. Visualization of Geographic Information

4. Unlocking Geographic Information

5. WebGIS Work in Progress

e-GEO Research Centre for Geography and Regional Planning

➢Research in Geography

•Geographical Modeling, Cities and Spatial Planning (GMCSP)
•*Modelação Geográfica, Cidades e Ordenamento do Território (MGCOT)*

•Environmental and Socio-Economic Dynamics: Management for Sustainability (ESDMS)
•*Dinâmicas Ambientais e Socioeconómicas: Gestão para a Sustentabilidade (DASGS)*

➢Research Projects
- International
- National
  - In collaboration with other institutions
  - Seed projects
  - Market-oriented projects

➢Individual Research

1. e-GEO Research Centre for Geography and Regional Planning

VI JORNADAS DE SIG LIBRE
Unlocking Geographical Information from Academia:
an Open Source WebGIS Solution

Centro de Estudos de Geografia e Planeamento Regional
Faculdade de Ciências Socias e Humanas . Universidade Nova de Lisboa

SERVEI DE SISTEMES
D'INFORMACIÓ GEOGRÀFICA
I TELEDETECCIÓ
Universitat de Girona

Geographic Information

➢ e-GEO – founded in 1981

➢ Many outputs
- Projects
- Individually

➢ Publications
- Articles in international scientific journals
- Articles in national scientific journals
- Books
- Book chapters
- Papers in proceedings of international scientific events
- Papers in proceedings of national scientific events
- Research Reports
- Working papers
- others…

Visualization of Geographic Information

➢Geographic Information
- Paper documents
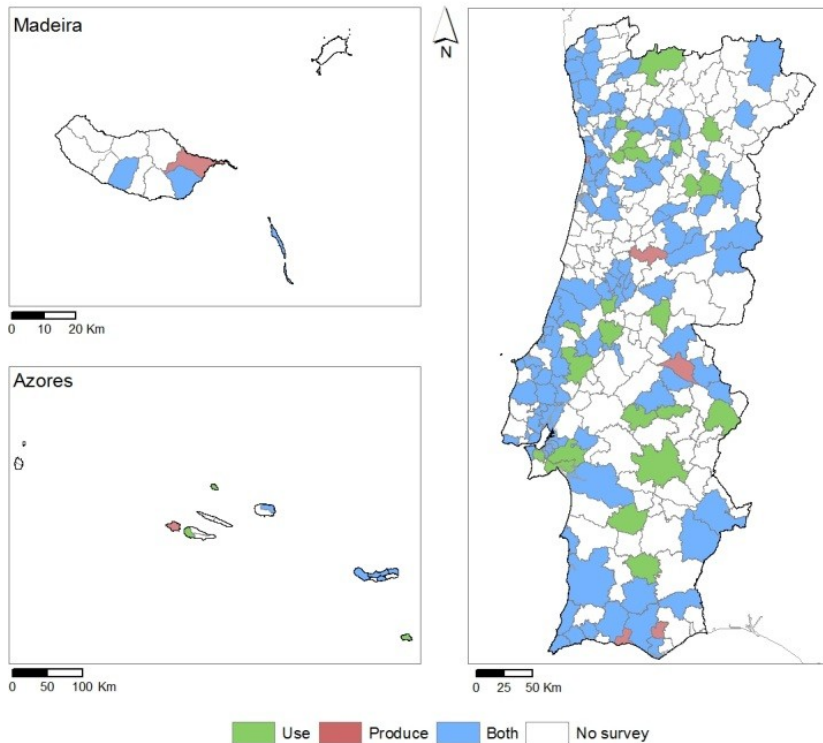- Digital documents

➢Static information

➢Case studies
1. The use of Geo-Information at the Municipal Level
2. Measuring peripherality in Mainland Portugal
3. Creating Web-based Solar Maps
4. Recent segregation in the Lisbon area: exploring relations between the social mix and urban dynamics
5. Feature extraction from satellite imagery and LiDAR to update municipal building's map

Visualization of Geographic Information

1. The use of Geo-Information at the Municipal Level

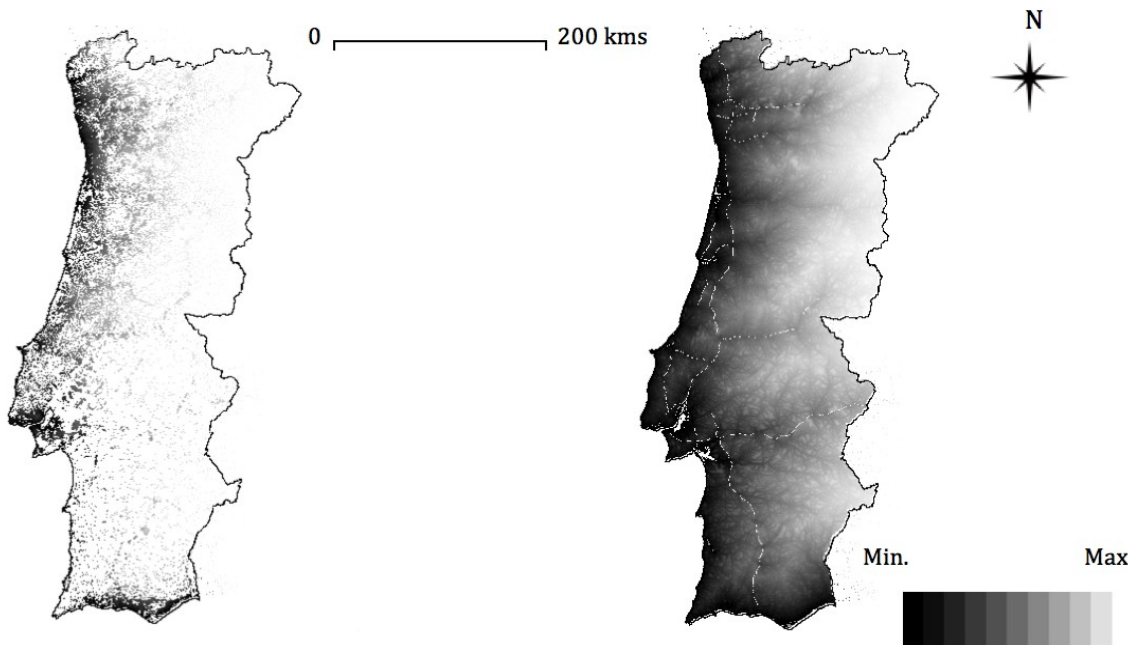**Geographic Information Function in Municipal's Activities**

Objectives of the Project:

• Evaluate the use of GI in local governments' Institutions.

3. Visualization of Geographic Information – Case study 1

Visualization of Geographic Information

2. Measuring peripherality in Mainland Portugal

Objectives of the Project:

• Quantify interiority in a landscape characterized by strong polarization towards the coast.

3. Visualization of Geographic Information – Case study 2

Visualization of Geographic Information

3. Creating Web-based Solar Maps
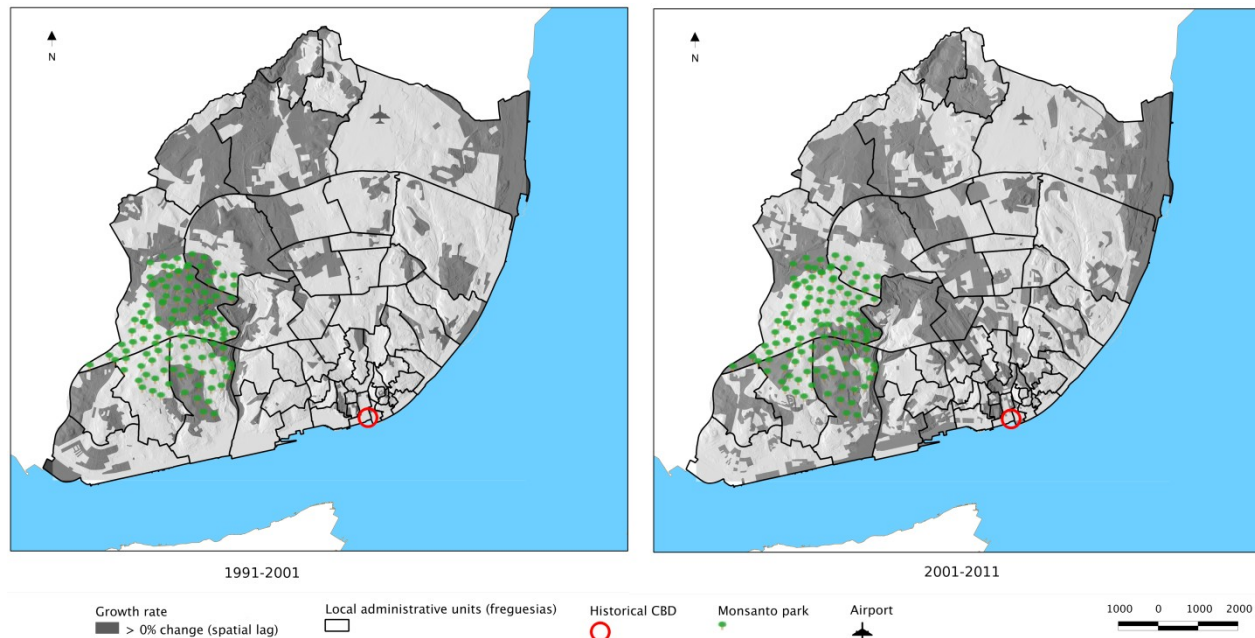

Annual solar radiation at the roof-tops

Objectives of the Project:

• Quantify buildings' potential in terms of solar energy production.

3. Visualization of Geographic Information – Case study 3

Visualization of Geographic Information

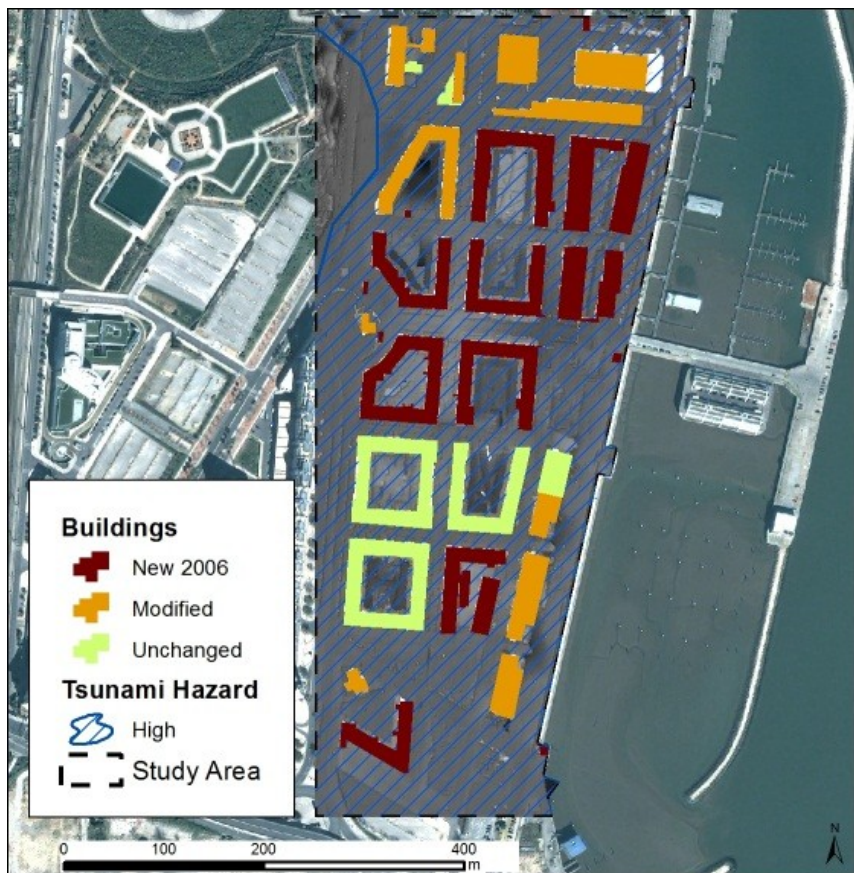4. Recent segregation in the Lisbon area: exploring relations between the social mix and urban dynamics

Objectives of the Project:

• Evaluate in detail social dynamics and its relation to urban growth.

3. Visualization of Geographic Information – Case study 4

Visualization of Geographic Information

5. Feature extraction from satellite imagery and LiDAR to update municipal building's map

Objectives of the Project:

- Assess population exposure to tsunami hazard using up-to-date geographic information.

10

3. Visualization of Geographic Information – Case study 5

Unlocking Geographic Information

➢Limitations
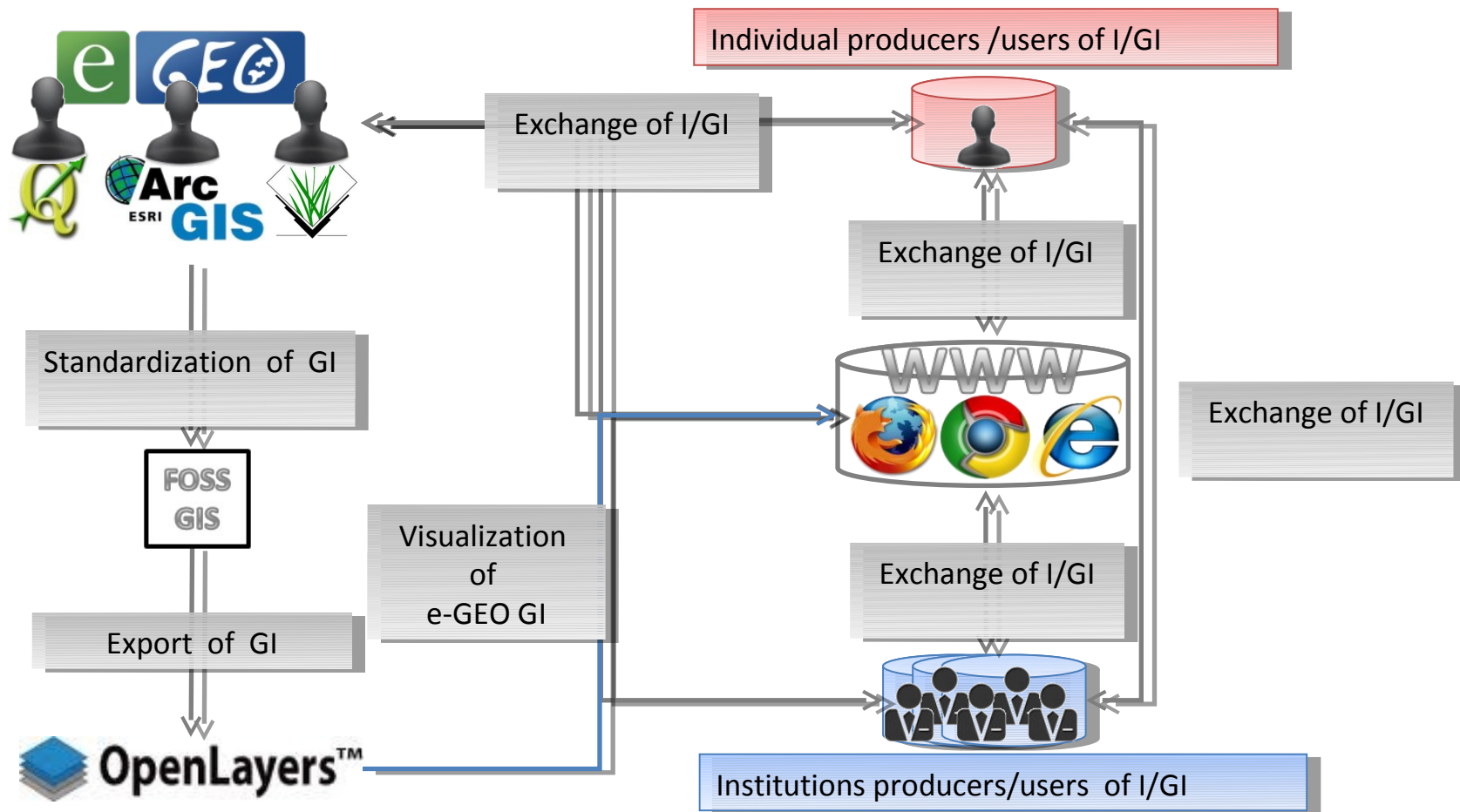- Paper/digital static information

➢Issues

1. The GI resulting from the research projects/individual research and its outcomes had not the visibility that was expected at the Centre
  - The GI was not in a proper format for researchers, general public or stakeholders to look up easily

2. How to make this GI available to everyone, everywhere, in a pleasant and clear way with minimum costs for the Centre

➢Answer

- **WebGIS**
  - ✓ 4 FOSS/FLOSS free(doms) + 1 free € (costs)

4. Unlocking Geographic Information

Unlocking Geographic Information

Individual producers /users of I/GI

Exchange of I/GI

Exchange of I/GI

Exchange of I/GI

Standardization of GI

FOSS GIS

Visualization of e-GEO GI

Exchange of I/GI

Export of GI

Exchange of I/GI

Institutions producers/users of I/GI

4. Unlocking Geographic Information

WebGIS Work in Progress

e-GEO Research Centre for Geography and Regional Planning

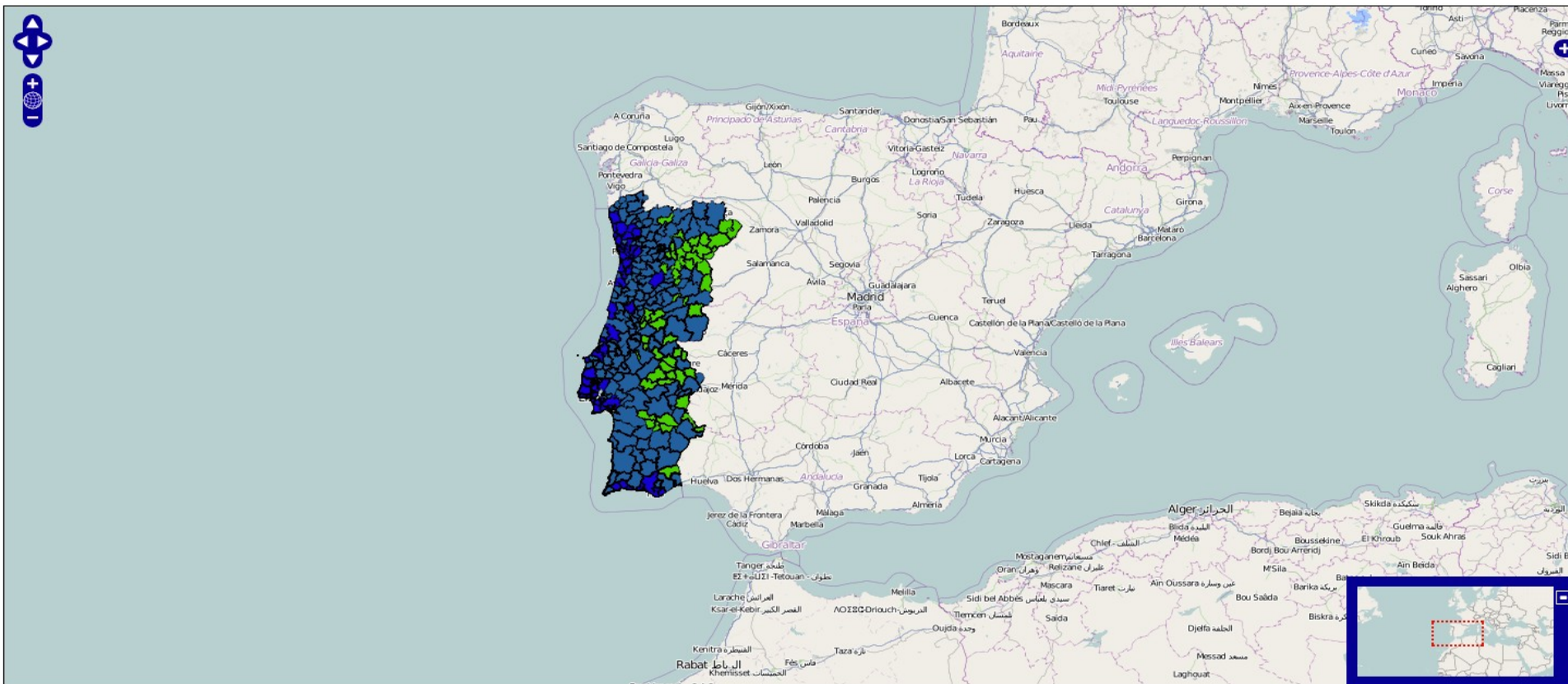Switch between base maps according to the needs

5. WebGIS Work in Progress

WebGIS Work in Progress

...from Bing Maps,

to Google Maps,

OpenStreetMaps,

Orthophotomaps,

according to the visualization scale

5. WebGIS Work in Progress

SERVEI DE SISTEMES
D'INFORMACIÓ GEOGRÀFICA
I TELEDETECCIÓ
Universitat de Girona

Centro de Estudos de Geografia e Planeamento Regional
Faculdade de Ciências Sociais e Humanas . Universidade Nova de Lisboa

WebGIS Work in Progress

e-GEO Research Centre for Geography and Regional Planning

Centro de Estudos de Geografia e Planeamento Regional
Faculdade de Ciências Sociais e Humanas . Universidade Nova de Lisboa

Peripherality in Mainland Portugal at the municipal level

FCSH FACULDADE DE CIÊNCIAS SOCIAIS E HUMANAS UNIVERSIDADE NOVA DE LISBOA   FCT Fundação para a Ciência e a Tecnologia

15

WebGIS Work in Progress

Conflicting issues:

•Different scales;

•Different themes;

•Different study areas;

•Conflicting personal interests.

5. WebGIS Work in Progress

Concluding remarks

• The researcher's work should not be concluded by publishing in a scientific outlet;

• Representations of "new geographies" allowing a better understanding of the realities being studied;

• Web-based geographical information system is an important tool, working as a bridge to fill the gap between researchers and society in general;

• We believe that, in the short-term, this platform will become an important vehicle for the exchange of information, discussion of results and the occurrence of knowledge spillovers between individuals or groups with distinct backgrounds.

Future work

• We expect, also in short-term, to have this platform working with more functionalities and information running in a well integrated way. For such, additional knowledge is required!

Concluding remarks and Future work

Muchas gracias

Unlocking Geographical Information from Academia: an Open Source WebGIS Solution

Bruno Neves, António M. Rodrigues, Teresa Santos, Sérgio Freire

(brunomaneves, amrodrigues, teresasantos, sfreire @fcsh.unl.pt)