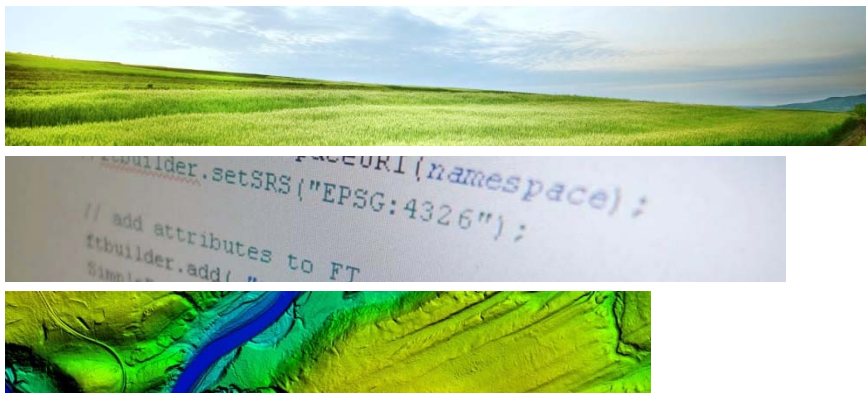


INSPIRE'd Land Use Planning Dynamic Indicators to Improve Planning Achievements



Maria José Vale,
mvale@dgterritorio.pt

- Relevance of information management within INSPIRE
- INSPIRE directive and European Spatial Data Infrastructure
 - eENVplus - eEnvironmental services for advanced applications within INSPIRE
- Indicators to improve planning achievements
 - Landuse Planning: INSPIRE'd land use Indicators to monitor good urban planning practices
- Conclusion

■ **INSPIRE directive and European Spatial Data Infrastructure building**

- ☐ Enable sharing environmental spatial information among organisations and promote public access to spatial information across Europe.

■ **INSPIRE directive common principles:**

- ☐ Data should be collected only once and kept where it can be maintained most effectively.
- ☐ It should be possible to combine seamless spatial information from different sources across Europe and share it with many users and applications.
- ☐ It should be possible for information collected at one level/scale to be shared with all levels/scales;
- ☐ Geographic information needed for good governance at all levels should be readily and transparently available.

Project

- **Integrate a large amount of environmental data** provided by the National/Regional Environmental Agencies and other public and private environmental stakeholders involved.
- This will be achieved through the **harmonisation and integration, within an operational framework, of existing services** resulting from previous European initiatives (funded projects, good practices, EU/national/local experiences) and it will allow overcoming of cross-border/languages barriers.
- eENVplus provides not only the ICT infrastructure but also the **documentation and support to ensure delivery of an operational infrastructure** oriented to create value –to be profitable, promote good governance, based on a well-defined organizational model and a tutored training framework.

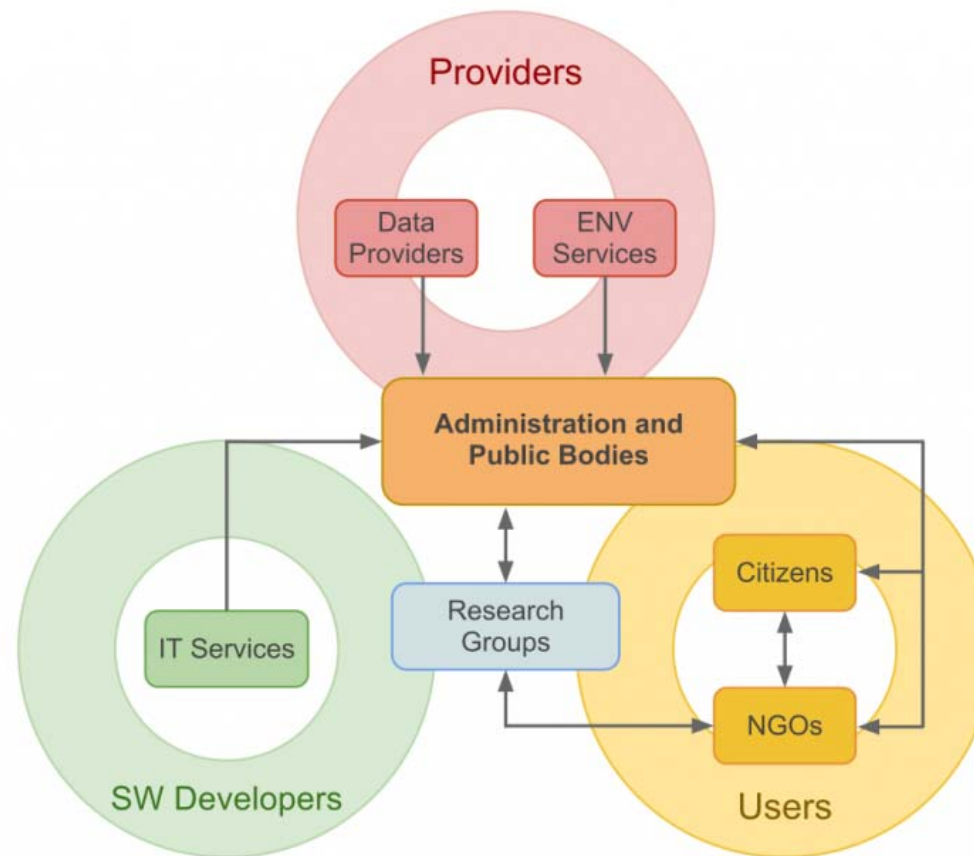
Pilot

- The eENVplus includes the DGT pilot :
1. **Implementation of web services related to environmental and territorial management indicators**
 2. **Monitoring and understand the growth of urban areas, urban sprawl**
 3. **Evaluate balanced economic grow.**
 4. **At Different levels - Scale**
 5. **Different data inputs - data fitness**

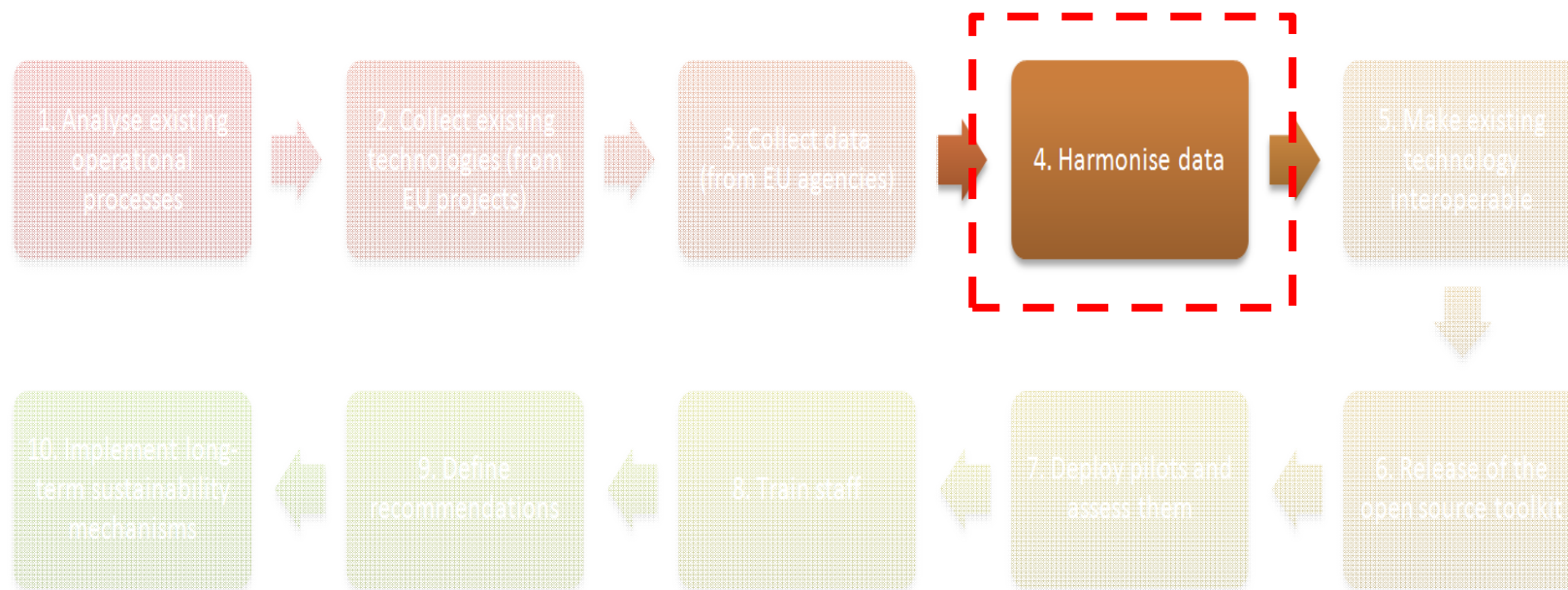
Both presented examples focus urban growth evaluation among a territory and explores adequacy of available geographic information produced by public entities, in this case DGT and the Statistics of Portugal (INE) to assess urban growth and its impact in different contexts.



Scenario: Urban Landuse Planning: INSPIRE'd land use planning Indicators to monitor good urban planning practices. Pilot: Portugal.

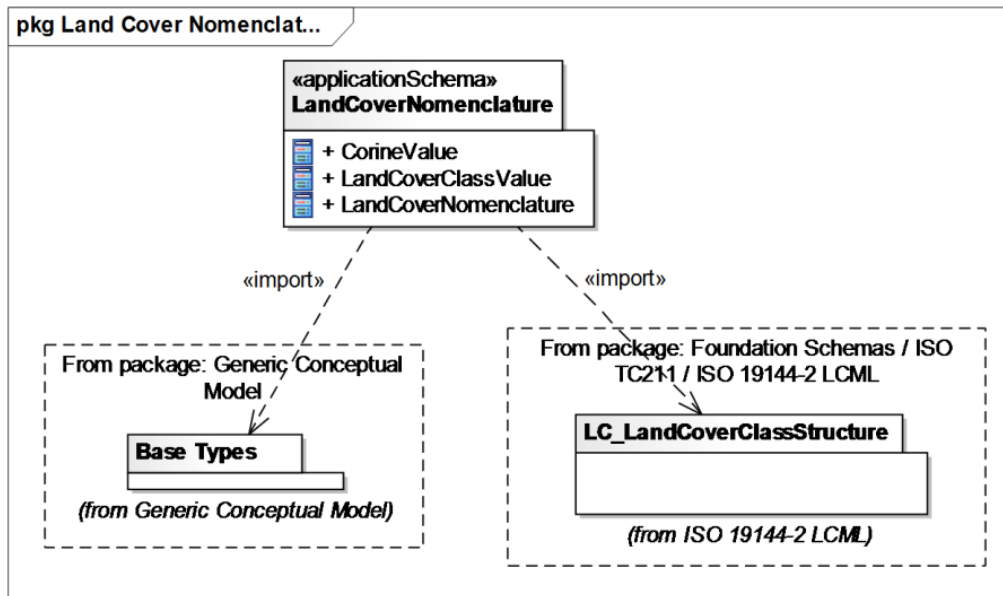
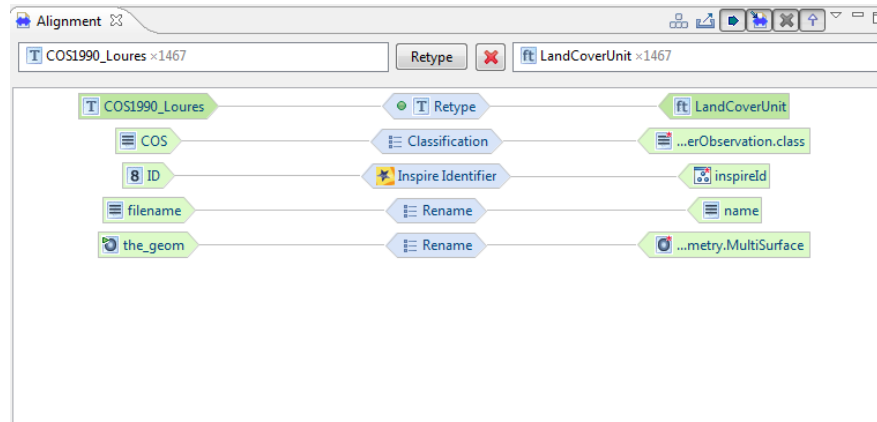






INSPIRE Data Theme	Content	Metadata	IPR/ Open data
I. 4. AU: Administrative units	Administrative units of the country: CAOP dataset	ISO 19115	Open data
II. 3. OI: Orthoimagery	Ortho imagery	ISO 19115	IPR, data available for eENVplus use
III. 1. SU: Statistical units	official statistics related to housing and demography	ISO 19115	IPR, data available for eENVplus use
III. 4. LU: Land use/II. 2. LC: Land cover	COS90	ISO 19115	Open data
III. 4. LU: Land use/II. 2. LC: Land cover	COS2007	ISO 19115	IPR, data available for eENVplus use

The spatial data correspond to several **INSPIRE data themes** and are organized by administrative units for the study areas. It covers land use, land cover, orthoimagery and statistical units, environmental and socioeconomic data, all harmonized according to the INSPIRE implementing rules



The Classification tool window shows a mapping table for source and target values. The table is as follows:

Source value	Target value
BT1	324
BT2	311
QO3	311
BT0	322
QO1	244
QO2	244
QO0	323
JT0	333
JT4	334
QN6	244
QN2	244
QN3	244
QN4	244
QN5	244
QN0	322
QN1	244
BR6	313
RR5	313

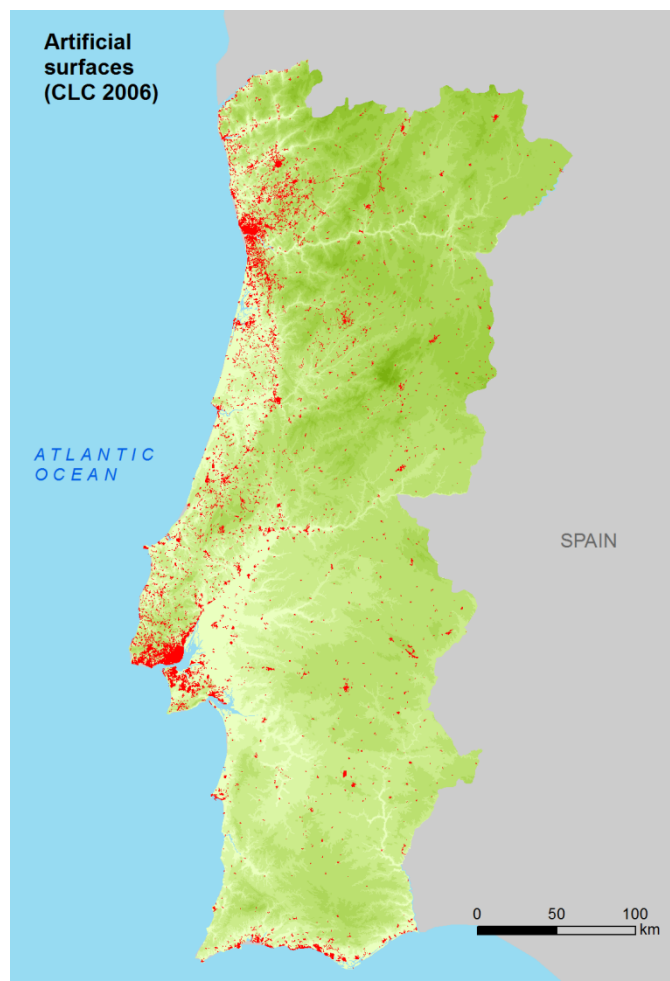
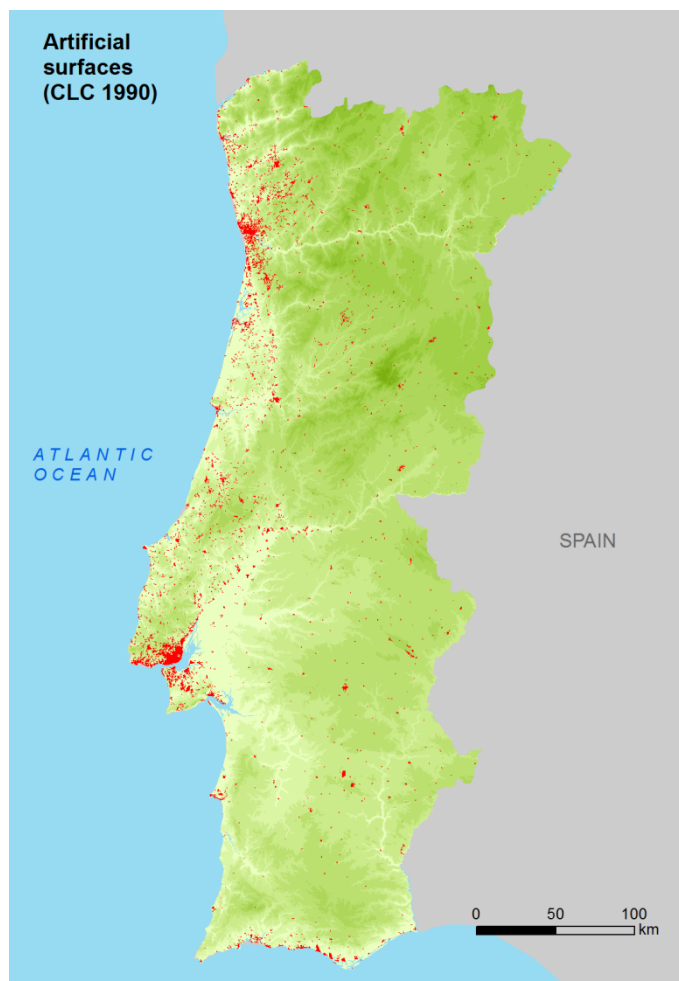
For unmapped source values: assign null

Explicit From file

Double click on a table cell to change its value.

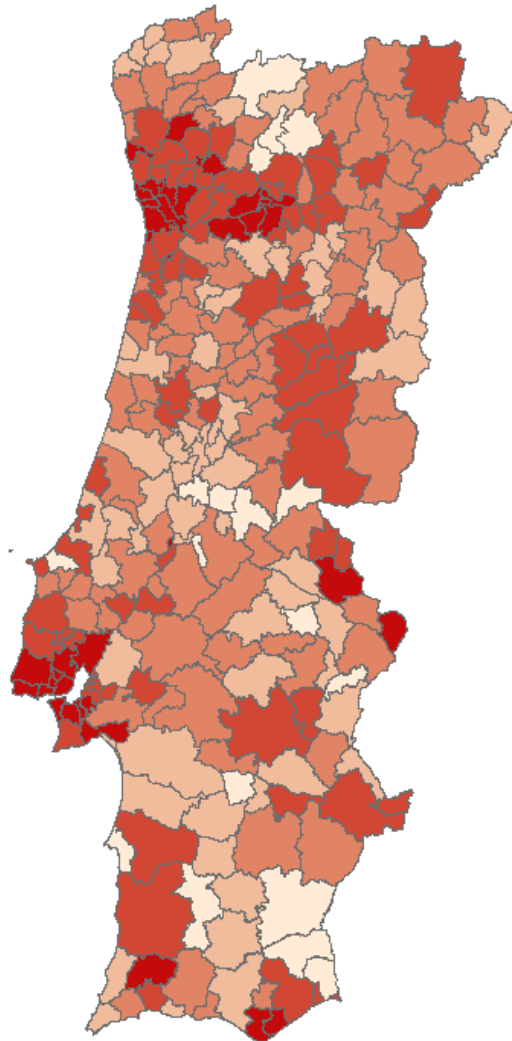
Buttons: Help, < Back, Next >, Finish, Cancel

Artificial surfaces - CORINE Land Cover (CLC)



	Area (ha)	Area (%)
Area PT	8908892	100,0
Artific. 1990	169845	1,9
Artific. 2006	310039	3,5

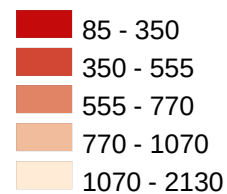
$\Delta 1,6\%$ (1990/2005)



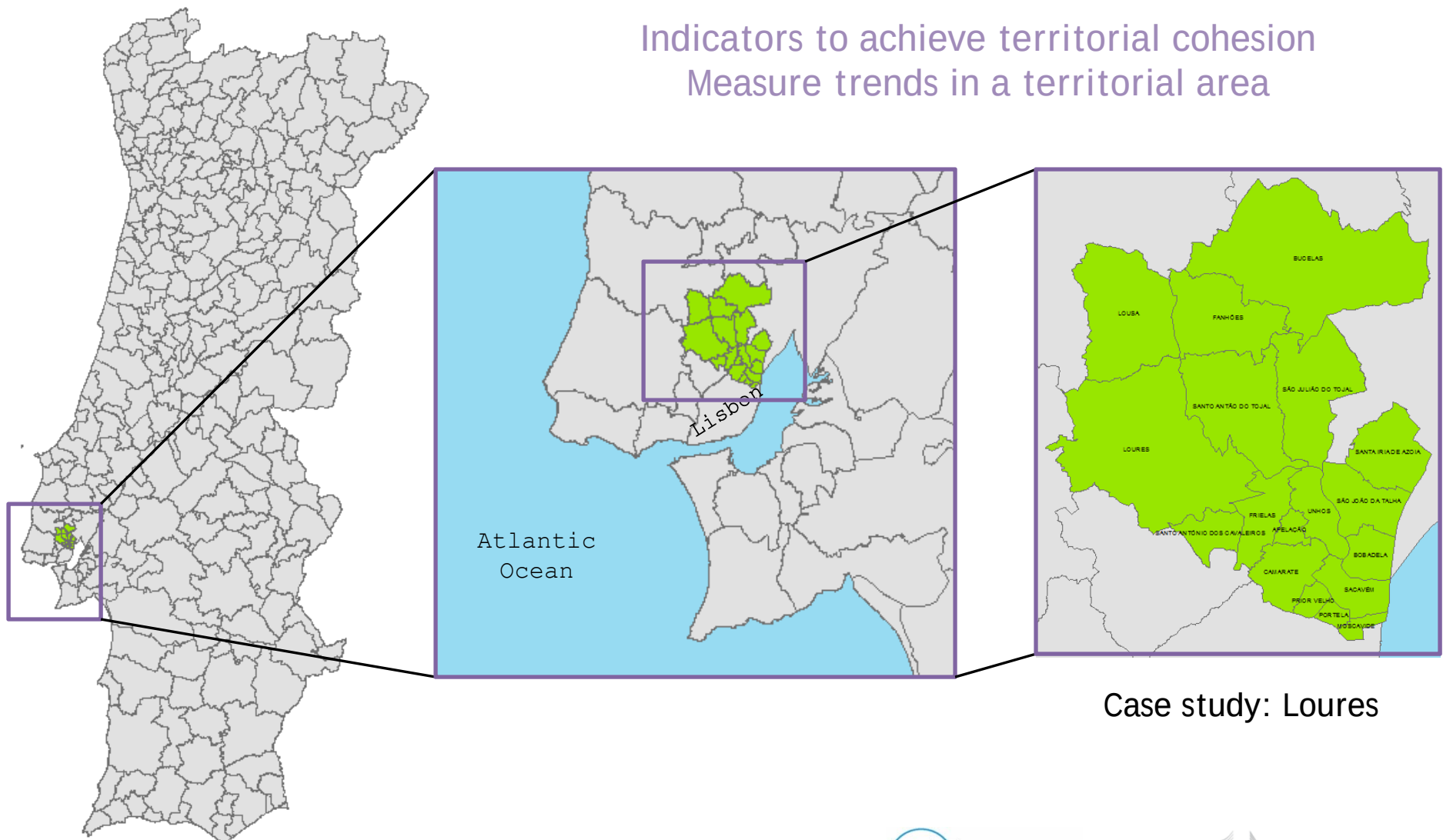
Evaluating Urban Growth distribution
among portuguese municipalities
in 2007 (Climate Change – Emissions Report)

An example to be applied
during the pilot...

Urban area per capita – COS 07 (ha/inhabitant)

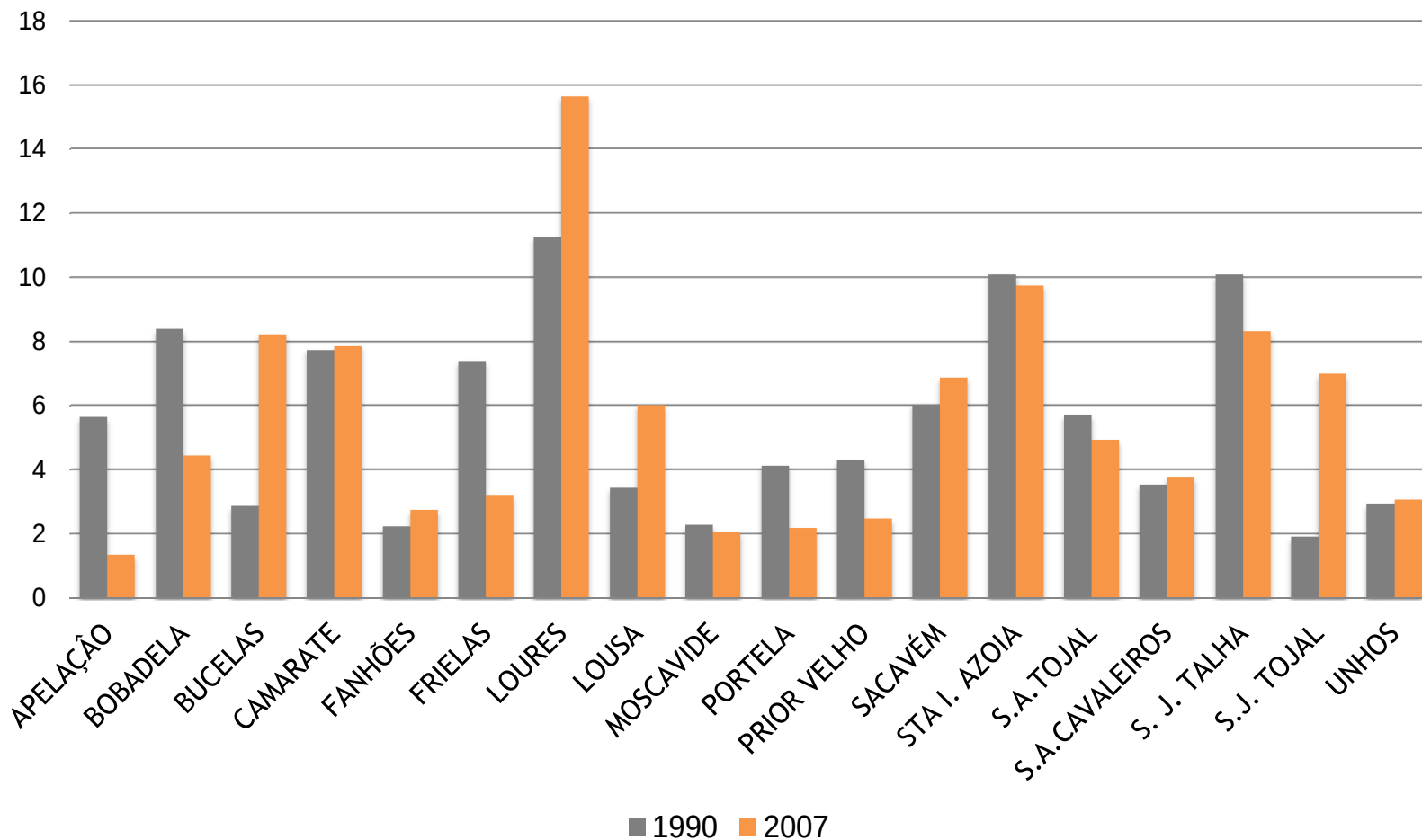


Indicators to achieve territorial cohesion
Measure trends in a territorial area



Case study: Loures

Proportion of urban areas in Loures (%)

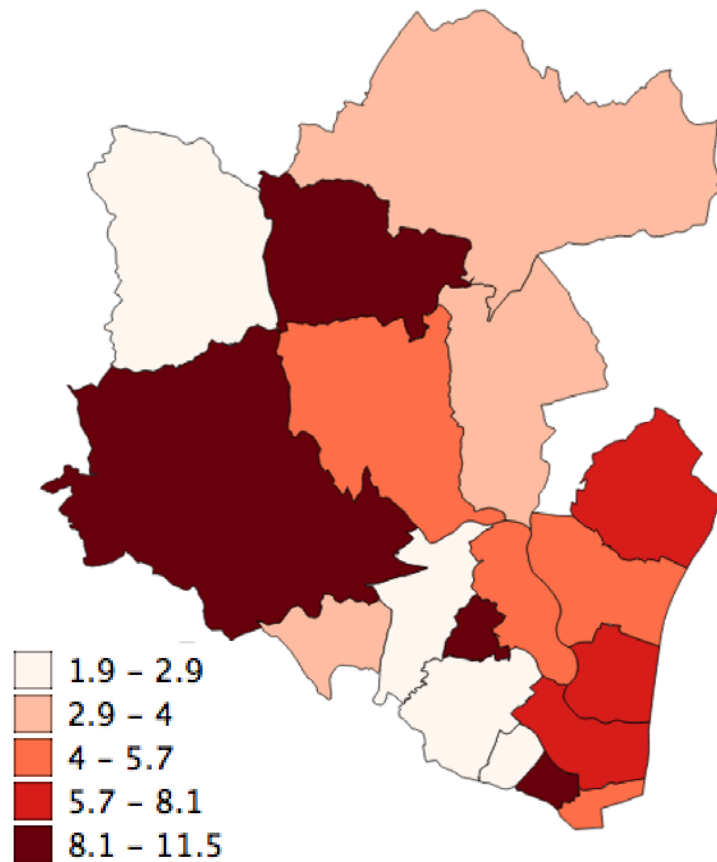


Source: COS

Land Use/Land Cover 1990 - COS95

Proportion of urban areas (%)

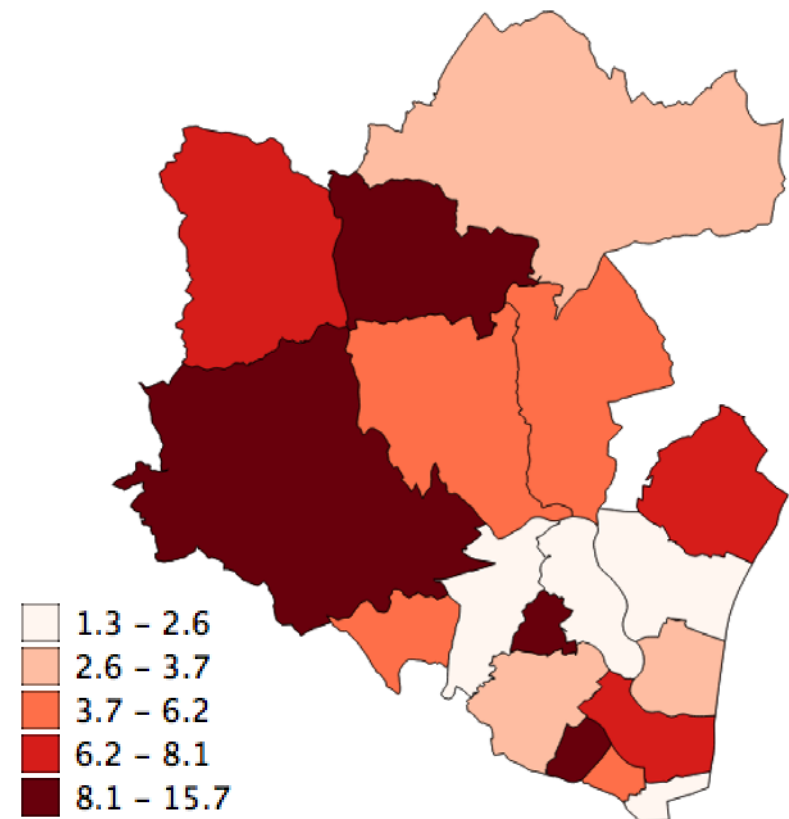
Source - COS



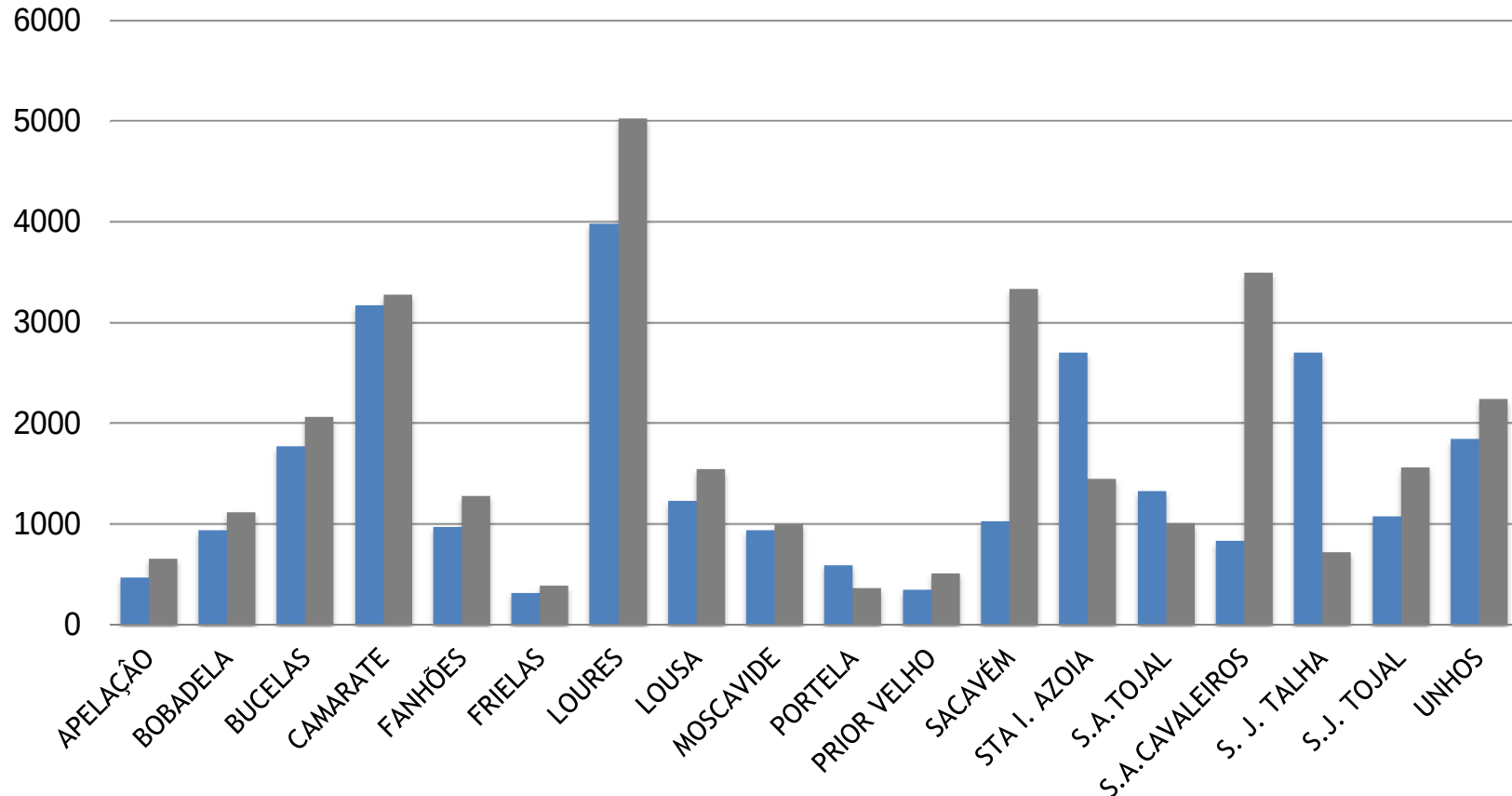
Land Use/Land Cover 2007 - COS2010

Proportion of urban areas (%)

Source - COS



Buildings (number) over Loures municipality

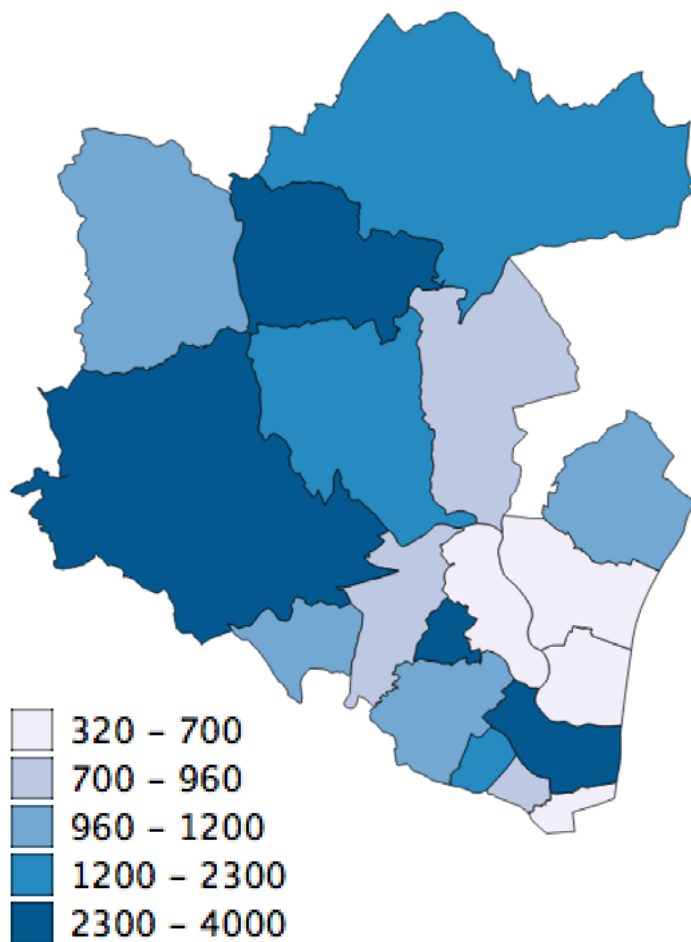


Building : Independent structure, covered, limited by external or interior walls that extend from the foundations to the roof, destined to serve housing or other purposes. (metadata - INE)

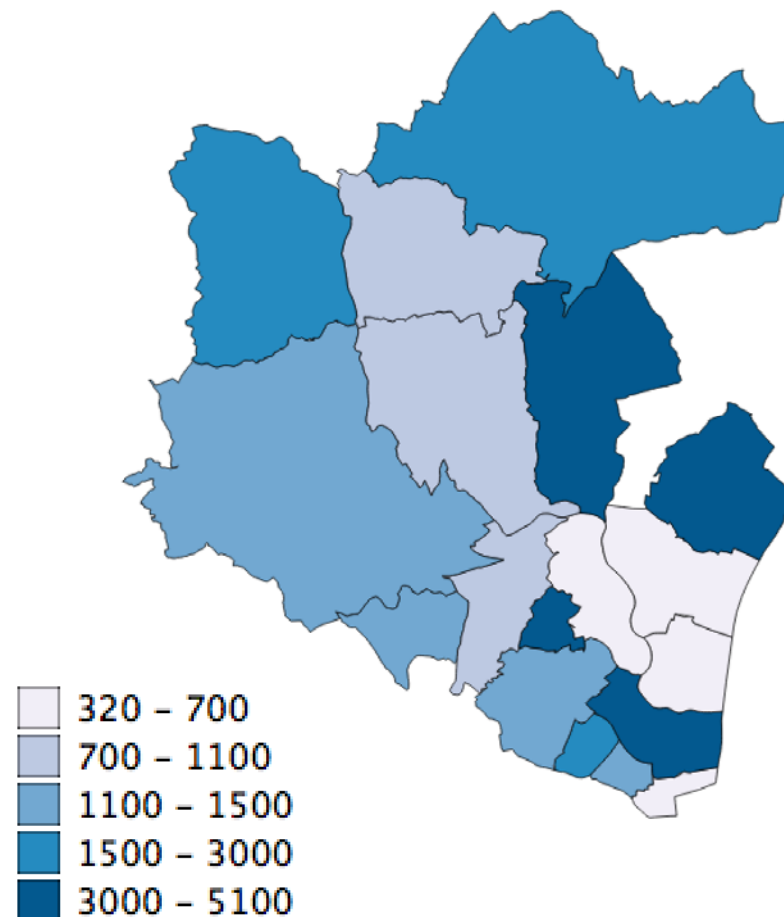
■ 1991 ■ 2011

Source: BGRE 1991, BGRI 2011, INE

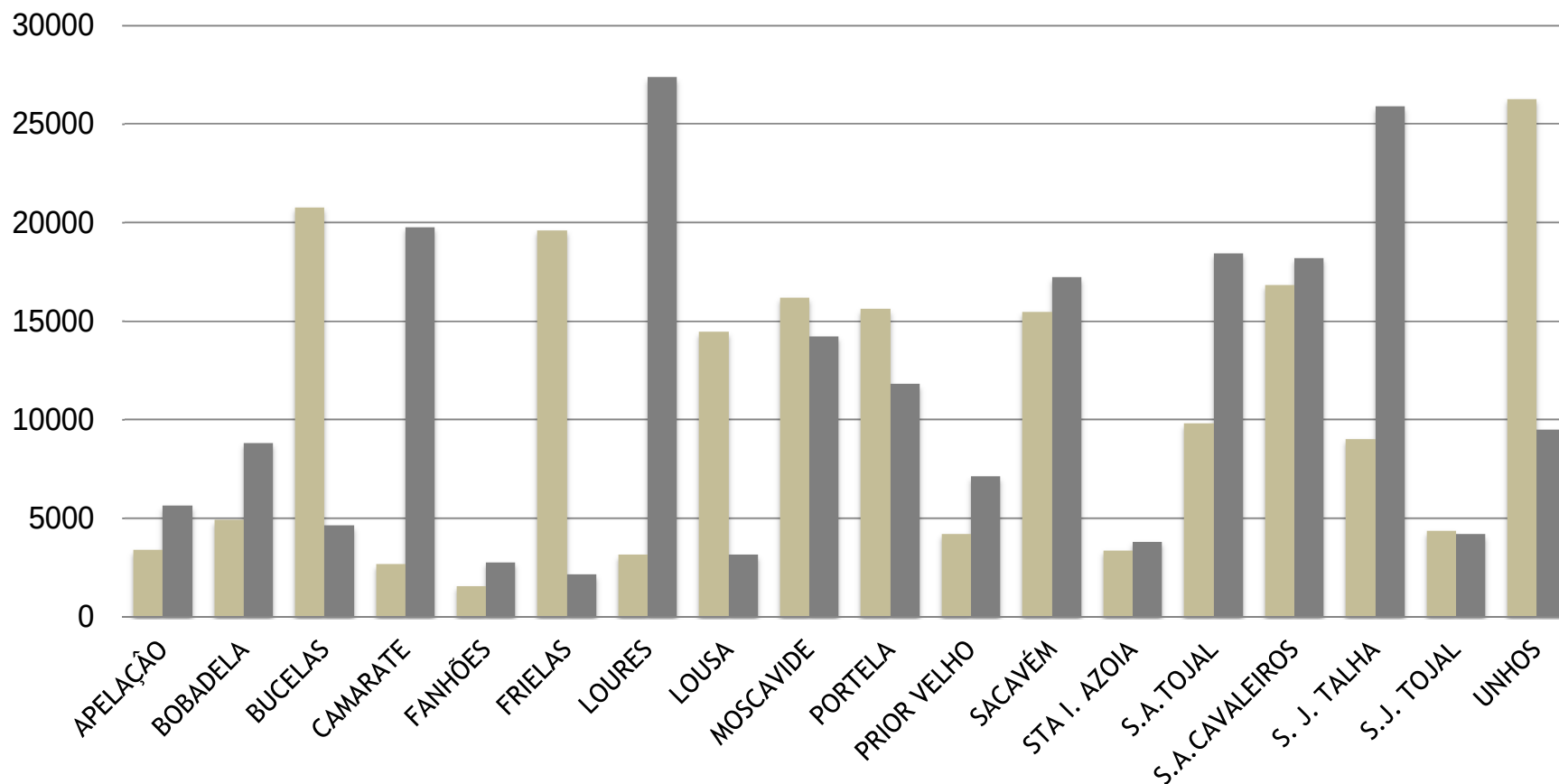
Buildings distribution over Loures Municipality - 1991



Buildings distribution over Loures Municipality - 2011



Inhabitants over Loures municipality (thousands)



Resident population

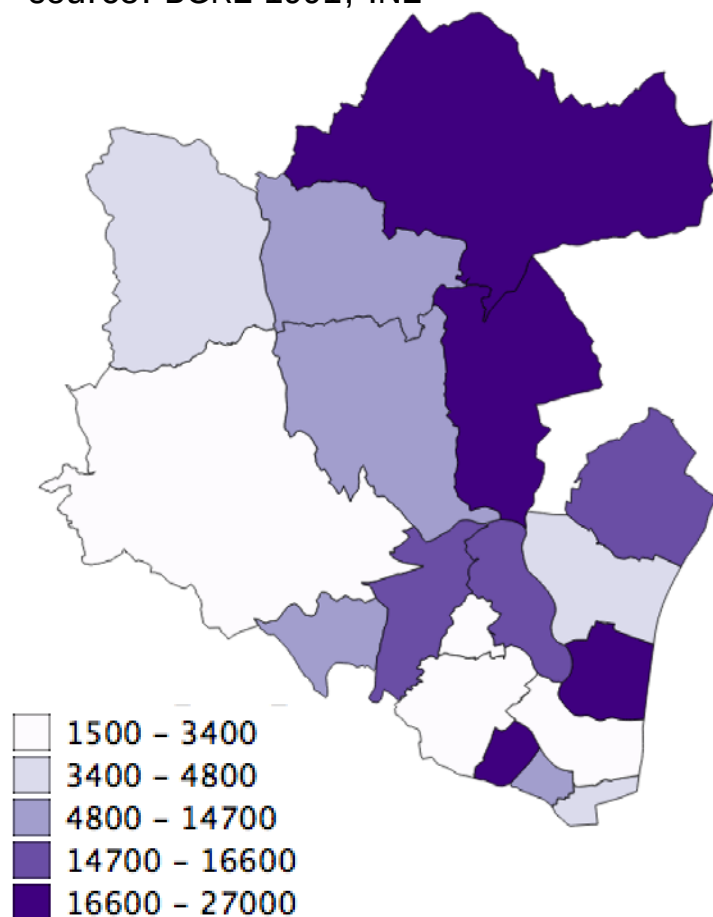
People who, regardless the time of observation, are present or absent in a given housing unit where they live most of the year (metadata - INE)

■ 1991 ■ 2011

Source: BGRE 1991, BGRI 2011, INE

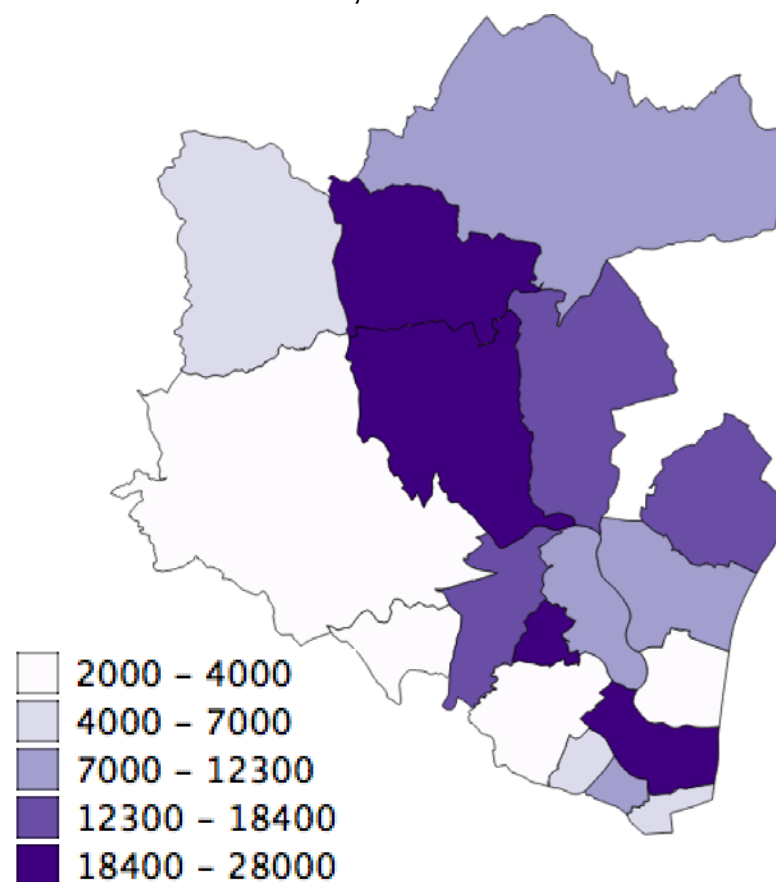
Inhabitants distribution over Loures Municipality (thousands)- 1991

Source: BGRE 1991, INE

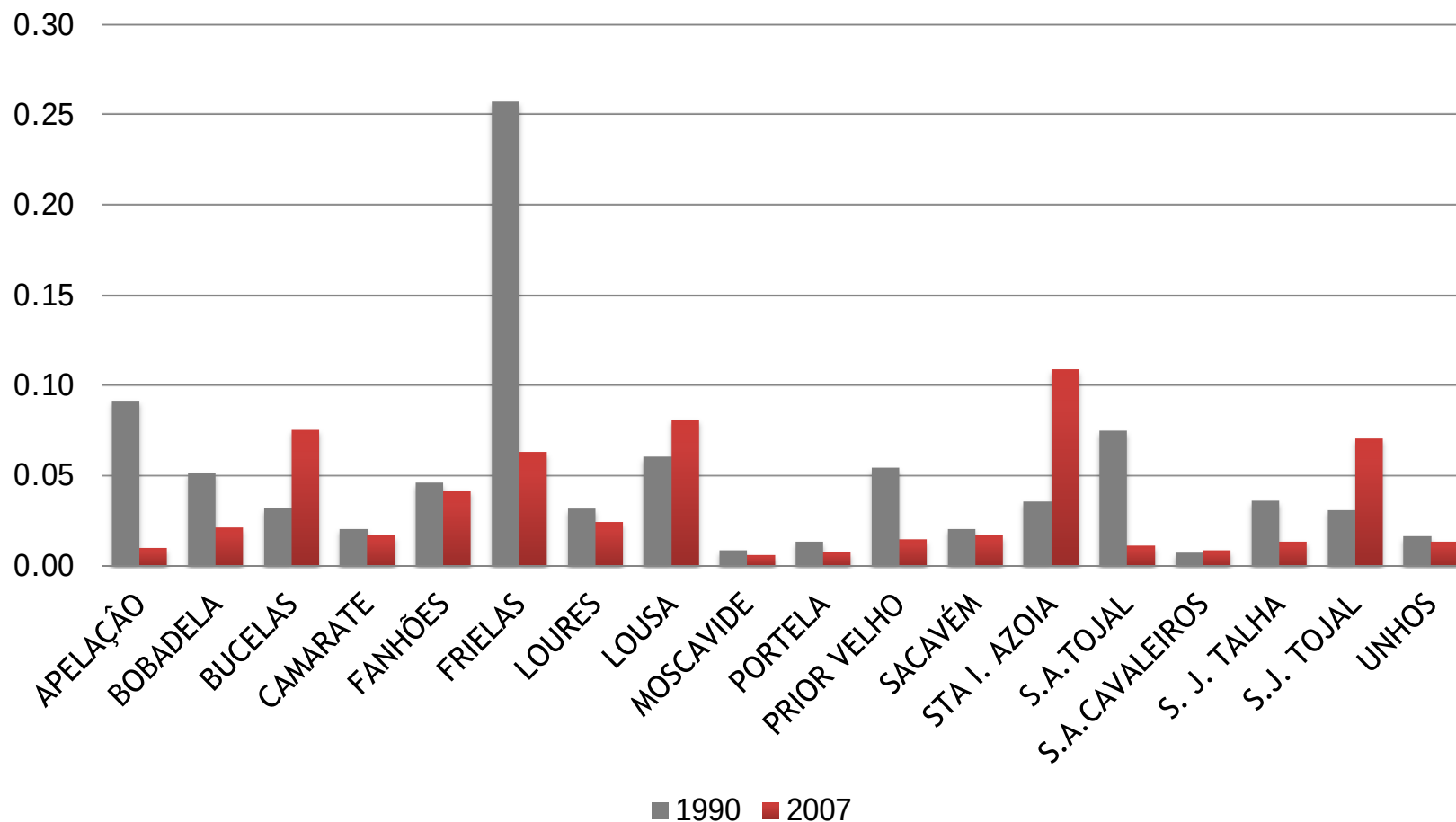


Inhabitants distribution over Loures Municipality (thousands) - 2011

Source: BGRI 2011, INE



Urban area per capita in Loures (ha/inhabitant)

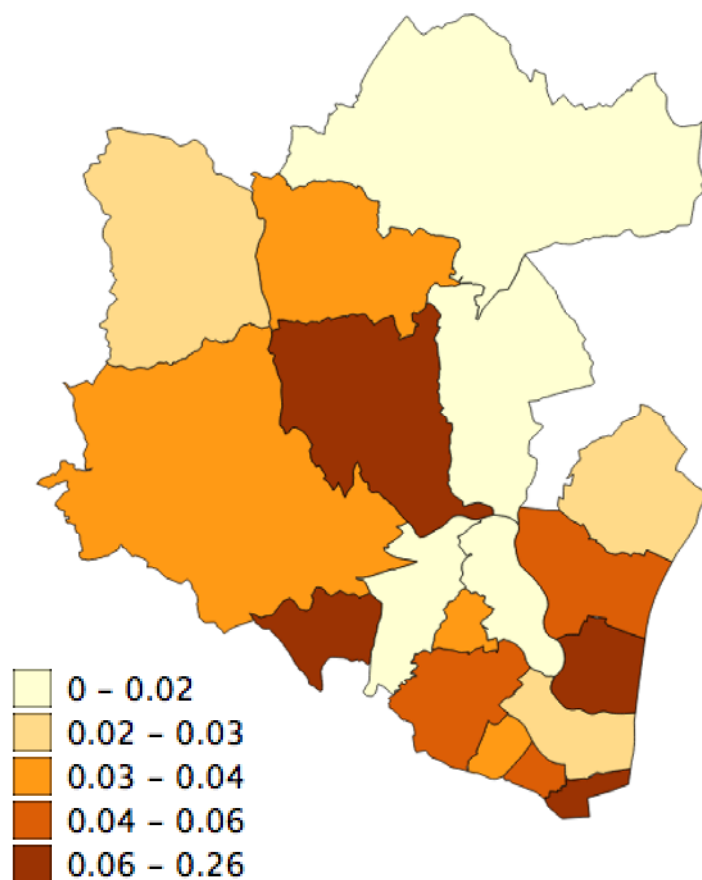


Source: COS; BGRE and BGRI (1991;2011) - INE

Land use/land cover 1990 - COS95

Urban area per capita (ha/inhabitant)

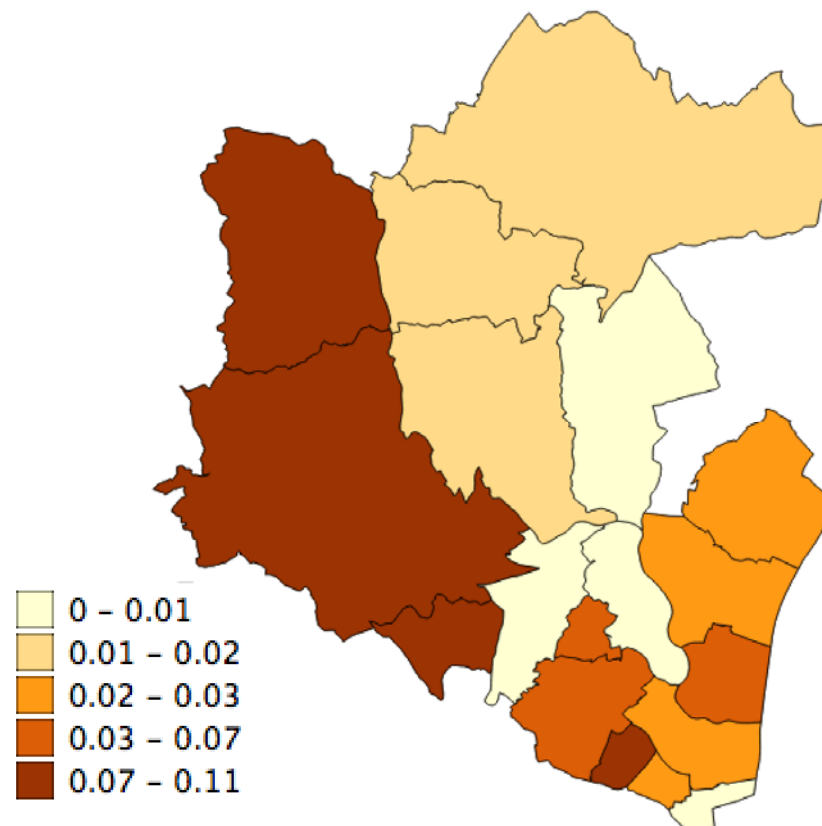
Source: COS, BGRE 1991 (INE)

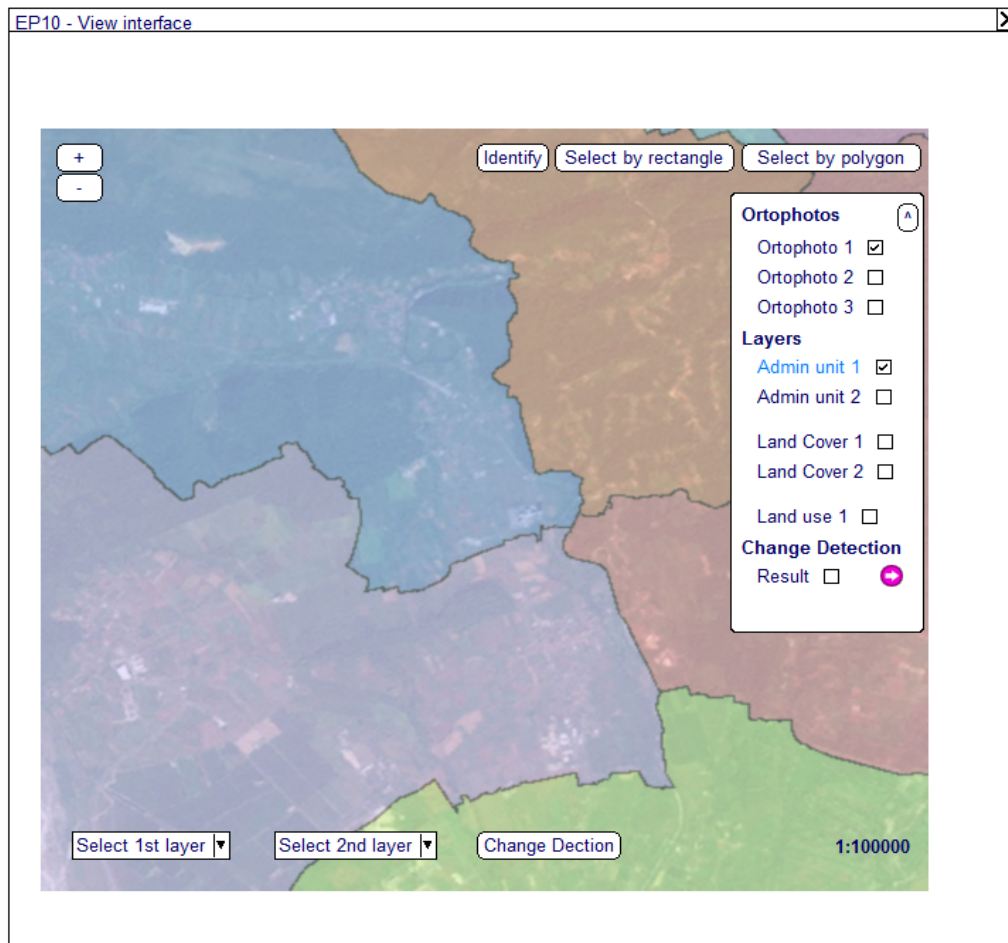


Land use/land cover 2010 - COS2010

Urban area per capita (ha/inhabitant)

Source: COS, BGRI 2011 (INE)





The following services are foreseen:

Data Access Services

Web Map Service (WMS)

Web Feature Service (WFS)

To be tested into a geoportal

- 32 temas em 3 anexos.

- **Anexo I:**

1. Sistemas de referencia
2. Sistemas de quadriculas geográficas
3. Toponímia
4. Unidades administrativas
5. Endereços
6. Parcelas cadastrais (Prédios)
7. Redes de transporte
8. Hidrografia
9. Sítios protegidos

- **Anexo II:**

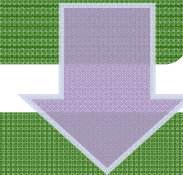
1. Altitude
2. Ocupação do solo
3. Ortoimagens
4. Geologia

Anexo III:

1. Unidades estatísticas
2. Edifícios
3. Solo
4. Uso do solo
5. Saúde humana e segurança
6. Serviços de utilidade pública e do Estado
7. Instalações de monitorização do ambiente
8. Instalações industriais e de produção
9. Instalações agrícolas e aquícolas
10. Distribuição da população-demografia
11. Zonas de gestão/restricção/regulamentação e unidades de referência
12. Zonas de risco natural
13. Condições atmosféricas
14. Características geometeorológicas
15. Características oceanográficas
16. Regiões marinhas
17. Regiões biogeográficas
18. Habitats e biótopos
19. Distribuição das espécies
20. Recursos energéticos
21. Recursos minerais

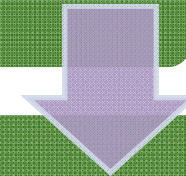
Harmonisation and Validation

- Datasets and metadata harmonisation
- Datasets and metadata validation



Pilot Applications

- Definition of Scenario demonstrator applications
- Scenario Application deployment



Building capacity and Training

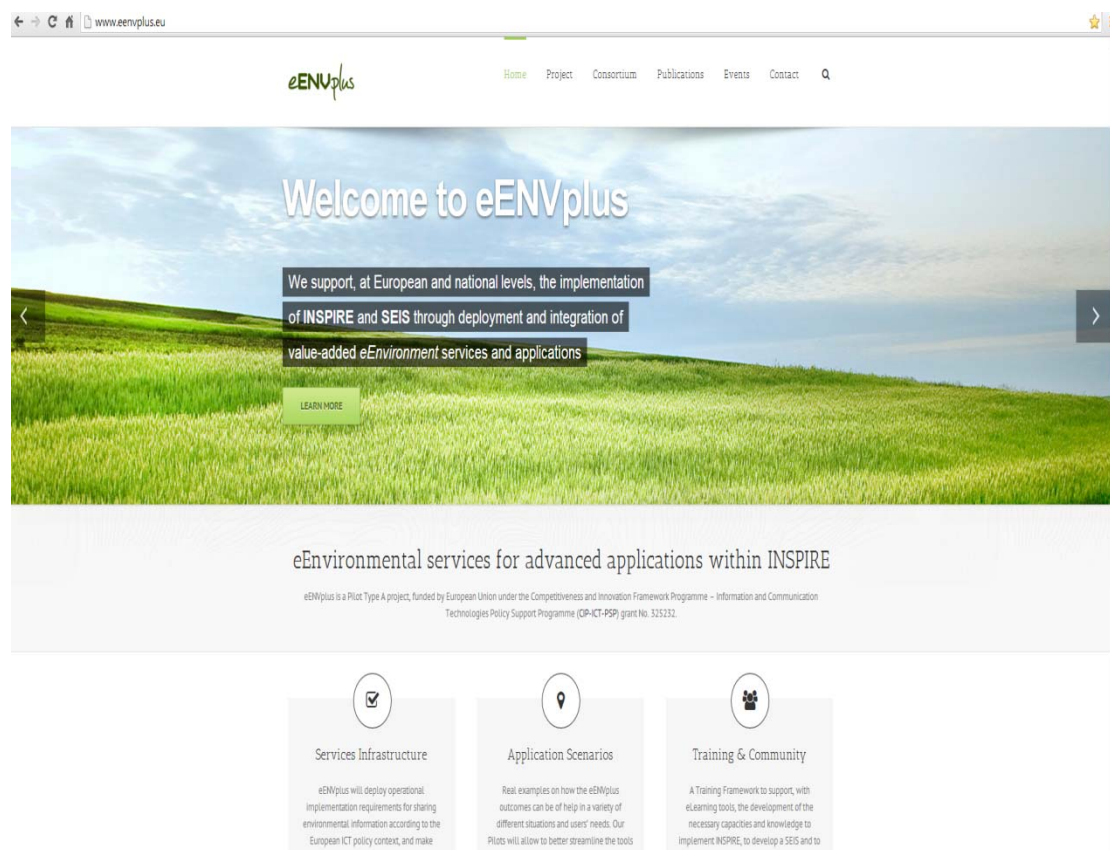
- The eENVplus Training Framework
- Training Actions

- The present work will be relevant to implement public authorities attributions. In the project the governance attributions explored are namely those related to:
 - Data production and data quality
 - Land use planning: efficiency in producing, implementing monitoring and evaluating Territorial Land Use Plans
 - Urban sprawl- city management and land use efficient planning.
 - Taxation: sustainable- affordable
 - Implementation of the INSPIRE Directive:
 - Annex I, II and III: Landuse oriented for good governance and cost effective data sharing policy –towards effective development

Working together towards the main goal ... GOOD GOVERNANCE



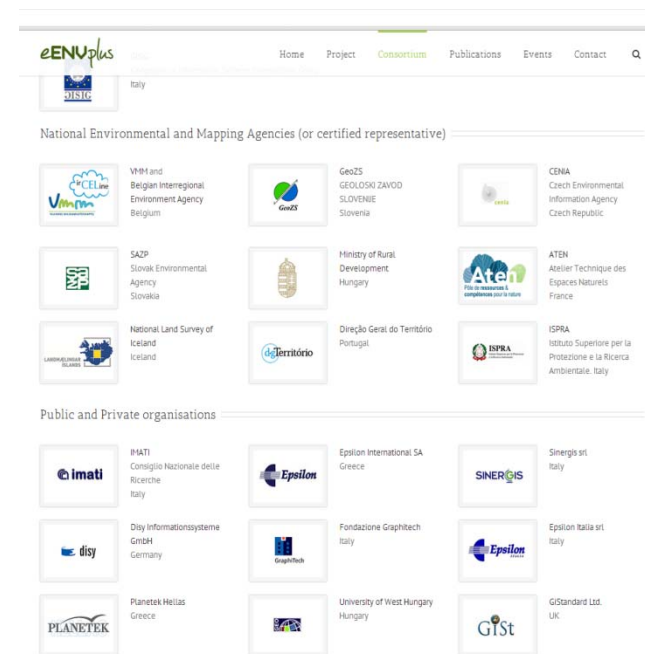
Are you interested? Please follow us...



eENVplus is a Pilot Type A project, funded by European Union under the Competitiveness and Innovation Framework Programme – Information and Communication Technologies Policy Support Programme (CIP-ICT-PSP) grant No. 325232

M. Vale, R. Saraiva, B. Meneses, R. Reis, P. Patrício
INSPIRE CONFERENCE Aalborg, 2014

<http://www.eenvplus.eu>



The screenshot shows the DGT (Direção-Geral do Território) website. The header includes the DGT logo and navigation links: Início, Favoritos, Links úteis, Contactos, Registo, and Entrar. Below the header is a navigation bar with categories: A DGT, ORDENAMENTO E CIDADES, CARTOGRAFIA E GEODESIA, CADASTRO, SISTEMAS DE INFORMAÇÃO, and PRODUTOS E SERVIÇOS. The main content area features a large banner for 'DGT Direção-Geral do Território'. On the left, a sidebar lists various services: NATUREZA E MISSÃO, ATRIBUIÇÕES, ESTRUTURA FUNCIONAL, OUTRAS ESTRUTURAS, CONTRATAÇÃO PÚBLICA, INSTRUMENTOS DE GESTÃO, COOPERAÇÃO INSTITUCIONAL, INVESTIGAÇÃO (highlighted), SmartOpenData, SAGLIT, FIRELAND, LANDYNN, CVS, ENERGIAC, HELIA, LANDAU, eENVplus, and GeoHealths. The main content area displays the title 'eENVplus - Environmental services for advanced applications within INSPIRE' and provides details about the project's objectives, expected results, and execution timeline. The page is dated 'Última atualização: sexta-feira, 7 de março de 2014'.

- www.eenvplus.eu
- www.dgterritorio.pt



Thank you!

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