The Added Value of Geospatial Data in a Statistical Office

Pedro Diaz Munoz

Director Sectoral and Regional Statistics

EUROSTAT – European Commission

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Why integrate

- **Responsibility of all the information we collect**
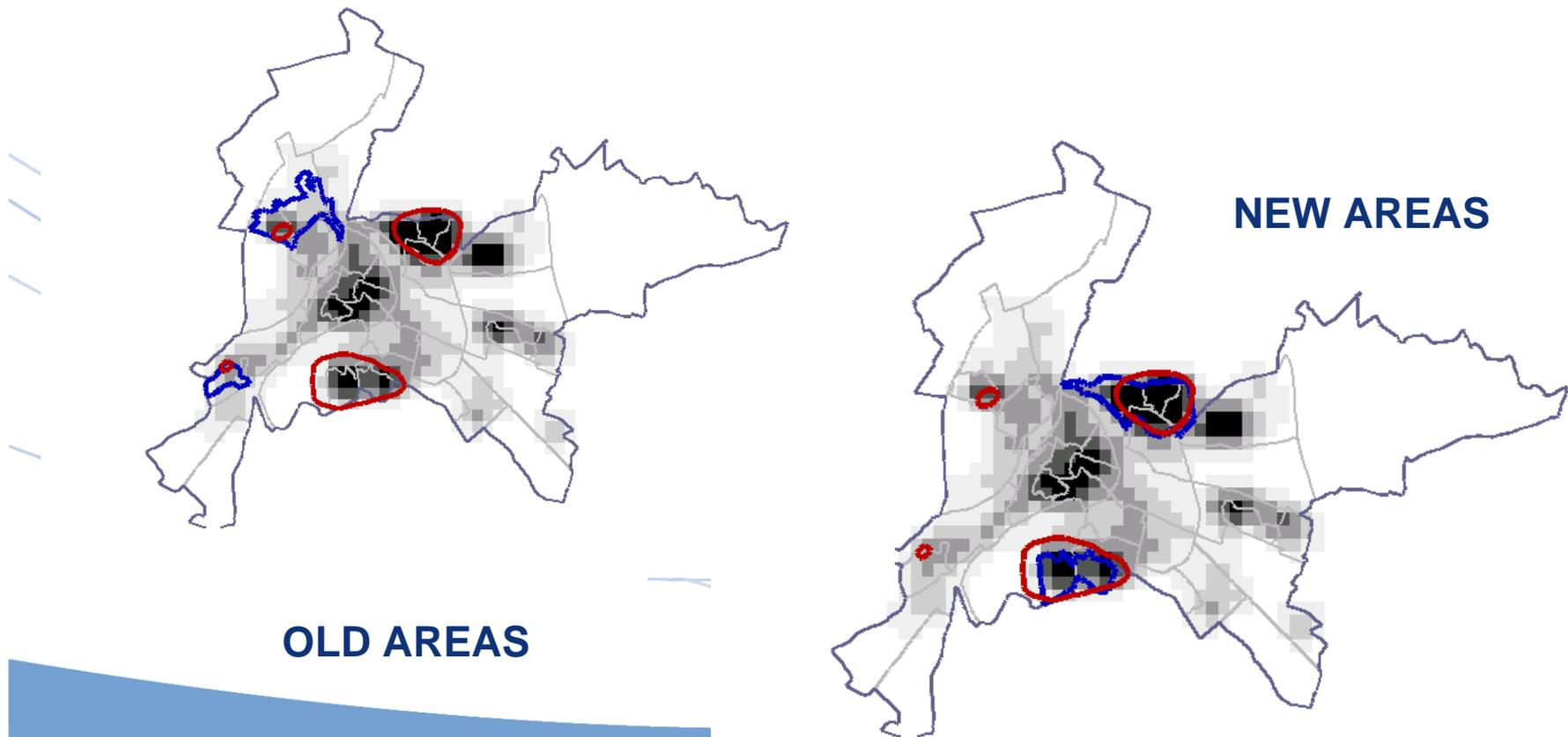   - *Aggregates and microdata are no longer enough*
- **Multiplied information content of integrated data**
    - *Two eyes see in an additional dimension*
- **Competing in a market in which our capacity of response must be much higher**
- **An opportunity we cannot miss**

Poitiers, Definition of new deprived districts (blue)

Mapping of areas of high probability of low income based on the health insurance register (red) and population density (grey) *Presented by JL. Lipatz (INSEE), 2009*

NEW AREAS

OLD AREAS

Research project ESPON

Multimodal time-space relief in 1999

Principle of construction of the map (section view) :

HST (TGV) 2 h (220 km/h)
Motorway 4 h (110 km/h)
Road 6 h (70 km/h)

Paris   Lyon

Approximate time-space scale :

0   1   2 hours

Extract from the road time-space map at the same time-space scale

The fastest transport system, here the HST, is taken as the reference for the measure of time-space on the entire map
The motorway and road links less fast, are proportionally longer than the HST arcs
From the road network, the time-space relief is built
An angle of view of 30 degrees and grey shadows helps to read the relief

N

Authors: A. L'Hostis, Ph. Mathis, C. Decoupigny
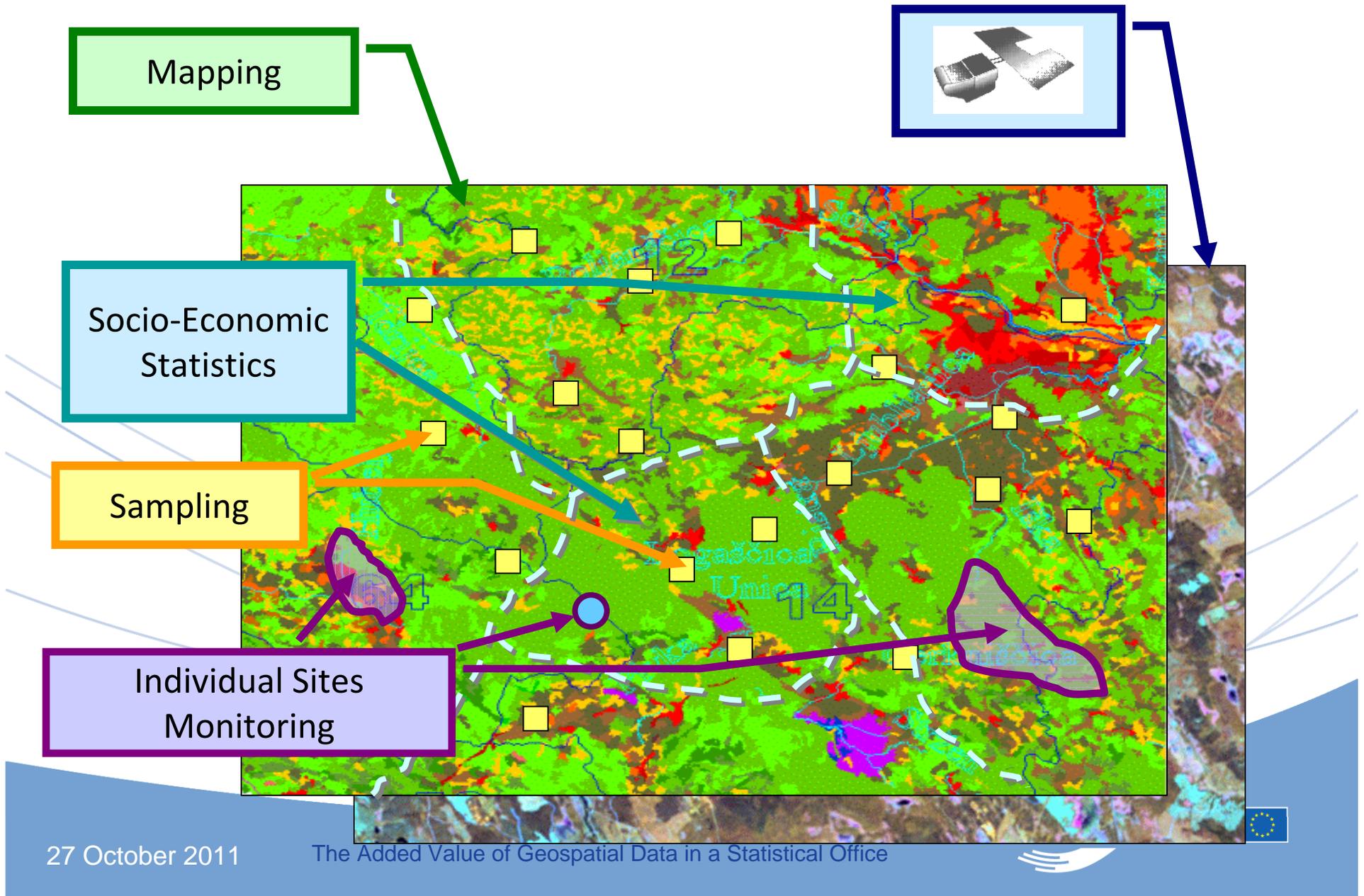INRETS/CESA

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An opportunity today

Micro-data can be stored in databases with their time and space characteristics, and remain accessible

- …they can be (re)used for multiple purposes
- …they are shared and frequently disseminated via local statistics databases and reach broader publics
- … they can be analysed with cloud computing systems (no need for holding data and complex softwares packages)
- …they can be updated by crowd computing
- …they are backed by remote sensing programmes for land, oceans and meteo
- …they are managed in GIS

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Are we prepared?

- NSI organization chart is a hampering element
- Current resource situation prevents strategic shifts
- Complexity of the information (diverse, scattered, not coherent, not fit for purpose…)
- Enormous methodological challenges of a new nature
- Priority focusing now on a reduced number of statistics (economic, financial)

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Complexity: different sources (*from JL Weber, EEA*)

Mapping

Socio-Economic Statistics

Sampling

Individual Sites Monitoring

Complexity: Multiple units

– Administrative units: e.g. municipalities, districts, counties, regions

– Management units: e.g. protected areas, river basin districts

– Planning units: e.g. coastal zones, urban areas…

– Legal property units: e.g cadastral units

– Analytical units: e.g. land cover units, socio-ecological landscape units, eco-complexes, geo-systems, ecozones, labour market areas…
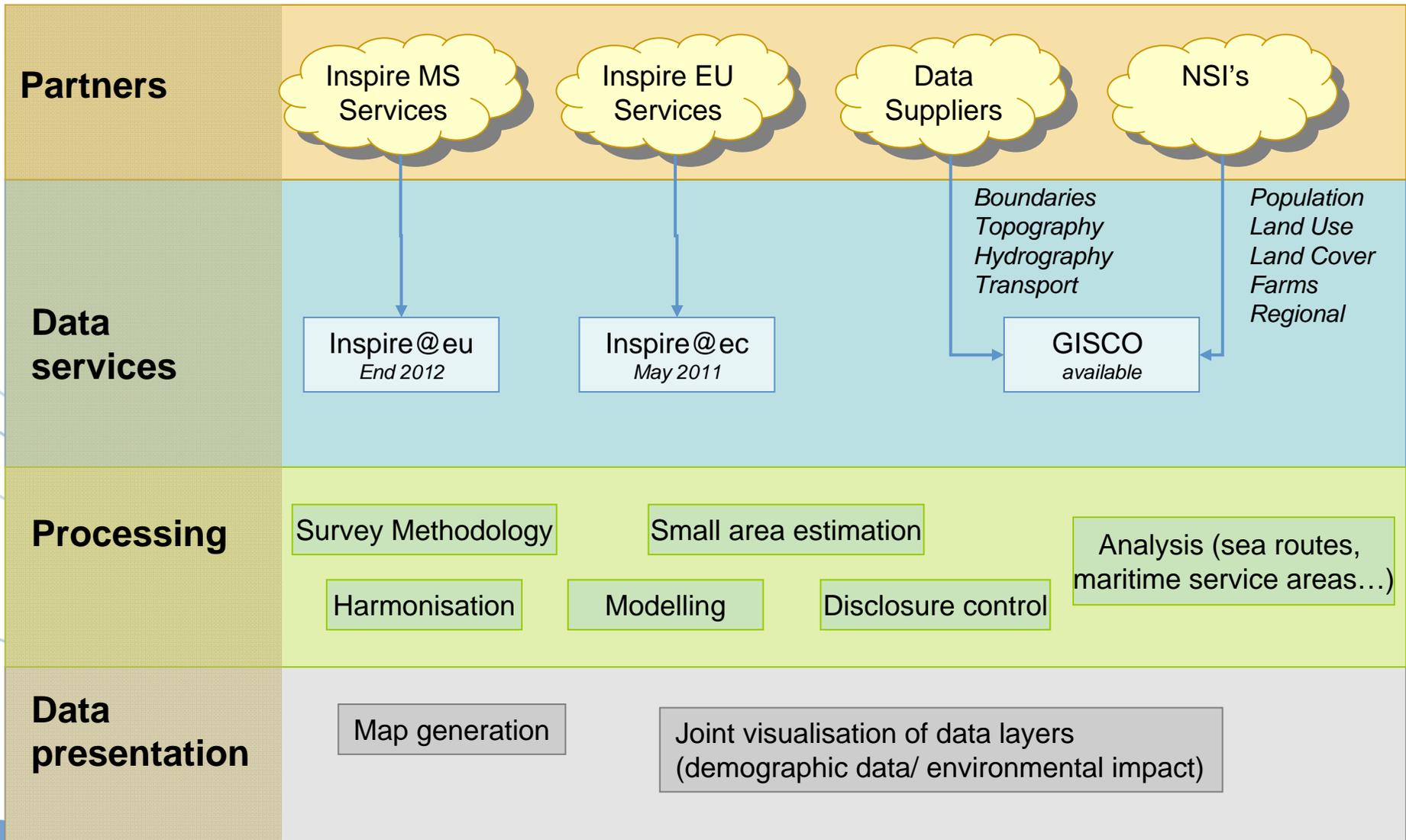
At various scales…

➔ Integration = classification and assimilation

How can we break the deadlock

- Build the case with examples

- Develop common frameworks (easier interoperability)

- Associate with other stakeholders (mapping, policy…)

- Raise awareness at high level

- Establish the facilitating organisation

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Geospatial information in Eurostat. An overview

Partners	Inspire MS Services	Inspire EU Services	Data Suppliers	NSI's
Data services	Inspire@eu *End 2012*	Inspire@ec *May 2011*	*Boundaries Topography Hydrography Transport* → GISCO *available*	*Population Land Use Land Cover Farms Regional*
Processing	Survey Methodology	Small area estimation	Analysis (sea routes, maritime service areas…)	
	Harmonisation	Modelling	Disclosure control	
Data presentation	Map generation	Joint visualisation of data layers (demographic data/ environmental impact)		

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Some approaches

- Support for data collection (Census field operation)

- Mixing geographical and statistical layers for display or analysis purposes (Maritime Service Areas, Population affected by flood)

- Geographical data as building block for statistical information (remote sensing and other local data aggregated to estimate ecosystems features)
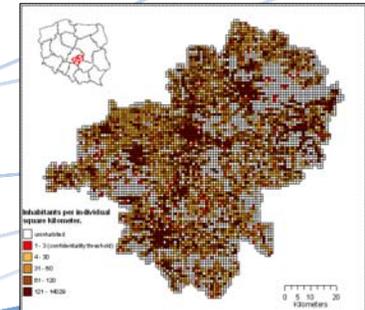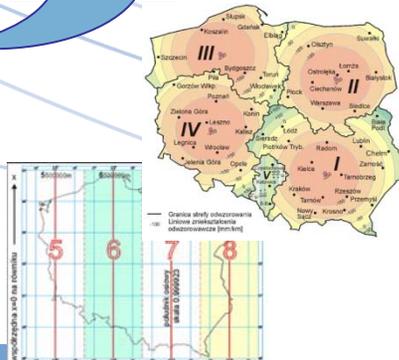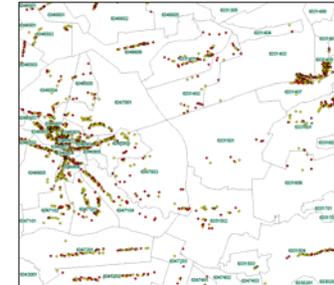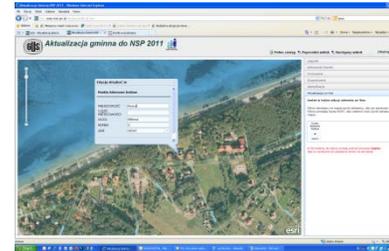
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Spatial data in the Polish territorial identification registry

Extracted from a presentation made presented by the Central Census Bureau of Poland, 8 March 2010 Luxembourg

Reference material collection and processing

Address point acquisition

Address point database update

Census data assigned to address points

Census data:
- aggregation
- dissemination
- visualisation
- analysis

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Some enabling factors

- Harmonisation in each domain is achieved or ongoing (INSPIRE); known methodologies, solid experience

  - The combination of the two sources of information into a single, harmonised information system is <u>the very difficult</u> next step.

- More effiency is achieved if statistical and geographical information are simultaneously collected (e.g. Census)

- Or when available sources are used (e.g. geo-referenced registers)

- Several data sources enhance Analytical power (two eyes)

- Visualisation tools are far more powerful when they combine statistics and geographic layers.

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Thank you
for your attention!
Pedro.diaz@ec.europa.eu