The Added Value of Geospatial Data in a Statistical Office

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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
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)

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

Approximate time-space scale:

0 1 2 hours

The fastest transport system, here the HST, is taken as the reference for the measure of time-space on the entire map.

From the road network, the time-space relief is built.

An angle of view of 30 degrees and grey shadows help to read the relief.

Authors: A. L’Hostis, Ph. Mathis, C. Decropigny
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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
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)
Complexity: different sources (from JL Weber, EEA)
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
Geospatial information in Eurostat. An overview

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Data services

- Inspire@eu End 2012
- Inspire@ec May 2011
- GISCO available

Processing

- Survey Methodology
- Small area estimation
- Harmonisation
- Modelling
- Disclosure control
- Analysis (sea routes, maritime service areas…)

Data presentation

- Map generation
- Joint visualisation of data layers (demographic data/ environmental impact)
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)
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 the very difficult next step.

- More efficiency 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.
Thank you for your attention!

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