The European Commission’s science and knowledge service

Joint Research Centre
Resilience and Settlements

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3rd DRMKC Annual Seminar
Sofia, 25-27 April 2018
Resilience starts with settlements

• Resilience to natural hazard impact
• Human societal system
  • Stocks: **Human settlements**, agricultural land
  • Flows: Energy, water, materials, ecosystem
• Human settlements
  • Built-up environment
  • Population
• Disaster Risk
  • Exposure
Measuring, analysis and reporting hazard impact at different scales

Jurisdictional
- Global level
- Continental level
- National
- Sub-national
- City level

Phenomenon
- Disaster have no borders
- Disaster are always location specific

Measurement
- Field
- Administrative
- National

Remote Sensing

GHSL Spatial Grids

Human Settlements
Imagery, built-up, exposure, vulnerability
Global Human Settlement Layer (GHSL)

The most complete, consistent, global, free and open data set on human settlements, from the village to the megacity, for the epochs 1975 – 1990 – 2000 – 2015


GEO Human Planet Initiative
Enhancing the perception of the reality

Chicago, US

MERIS GLOBCOVER (300m resolution) “urban areas”

Landsat GHSL (30m resolution) “built-up areas”

⇐ learn from existing low-resolution data
Multi-temporal built-up dataset
Sofia
40-years dynamics of human settlements

Source: 1975-2015 GHS-POP
Global human settlement spatial grids

Built-up grid

Population grid
Supporting harmonization of indicators

• UN-Habitat III conference, October 2016. The European Union, the OECD and the World Bank launched a voluntary commitment to develop a global, people-based definition of cities and settlements in support to the new urban agenda.
• Monitoring the implementation of the urban Sustainable Development Goal (SDG).
• Several of the indicators are highly sensitive to where the boundary is drawn around a city.

City spatial domain

- DEGURBA population-base classification of municipalities:
  - **Cities** have the majority of their population in an urban centre;
  - **Towns and suburbs** have the majority of their population in an urban cluster, but are not cities;
  - **Rural areas** have the majority of their population in rural grid cells.

Global Definition of Cities and Settlements
Unveiling new perspectives of urbanization

If the density of population is used as objective criteria for distinction of urban vs. rural areas, Europe is the region showing the highest share of rural population in 2015.

From the European Cities Report, European Commission, DG REGIO
Country Summaries

• To inform the discussion on the "global harmonized definition of cities and settlements".

• GHSL Web Site
  • Short summary: 3 pages
  • An interactive map
Growing cities
Shrinking cities
The City Centres Database describes more than 10,000 urban centres identified by the application of the "Degree of Urbanization" model to the GHSL baseline data.
Any questions?

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