

Penn IUR Earth Day Expert Roundtable and Public Panel  
April 22, 2015 | 3 – 5PM, 5:30 – 7PM  
Philadelphia, US

## **THE GLOBAL HUMAN SETTLEMENT LAYER (GHSL): BASIC FACTS**

# Background

- European Commission JRC supports R&D in automatic satellite image data interpretation for global human settlement mapping (GHSL)
- Data revolution - Open Science (Open Access).
  - Access to global high-resolution satellite data (Landsat, Sentinel) is free, full and open for the broad Regional, National, European and International user community
- Automatic image information retrieval
  - Possibility to process consistently global fine-scale information
  - Sustainable information production
  - Information democratization
  - Open, public and reproducible information
- Use scenarios - Information supporting policies
  - Information for action, policy
  - Evidence-based policy support

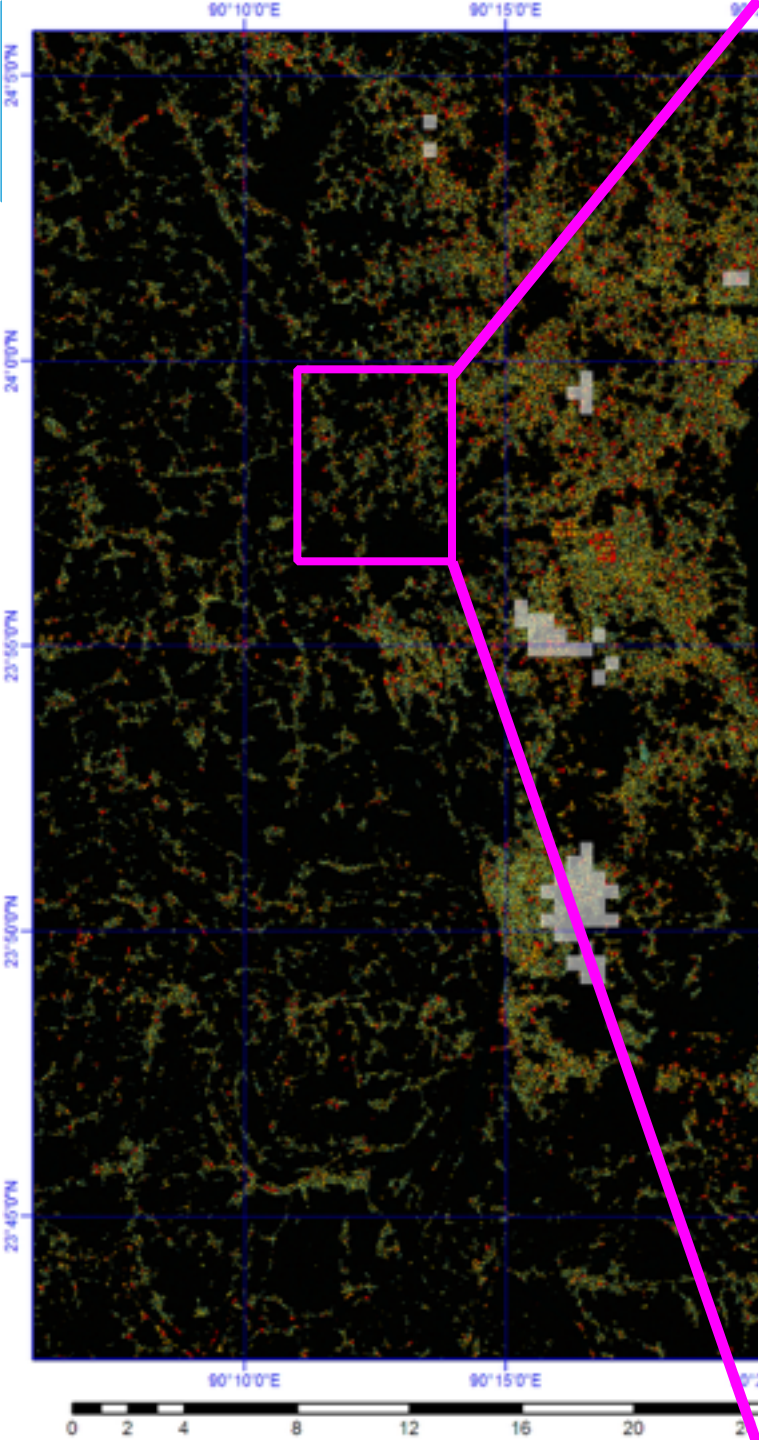
# New data and new methods create new information



2014 - first tests on automat. assessment of global built-up areas using Landsat data

GLS1975, GLS1990, GLS2000, and L8 JRC collection 15, 30, 75-m-res input







An aerial photograph of a city, likely Paris, showing a dense grid of streets. The map is overlaid with a color-coded analysis: green areas represent open spaces or parks, and brown areas represent building footprints. The text is overlaid on a dark grey rectangular background in the bottom left corner.

**New information / new methods allow to  
describe the building and the open spaces in  
between**

**Source: DGREGIO fine scale analysis of the whole European settlements using 2.5-m-res input  
image data (GMES/Copernicus CORE003 2012)**

**Credits: European Commission, DG Regional Development /Joint Research Centre**

0 500 1 000 2 000 Meters



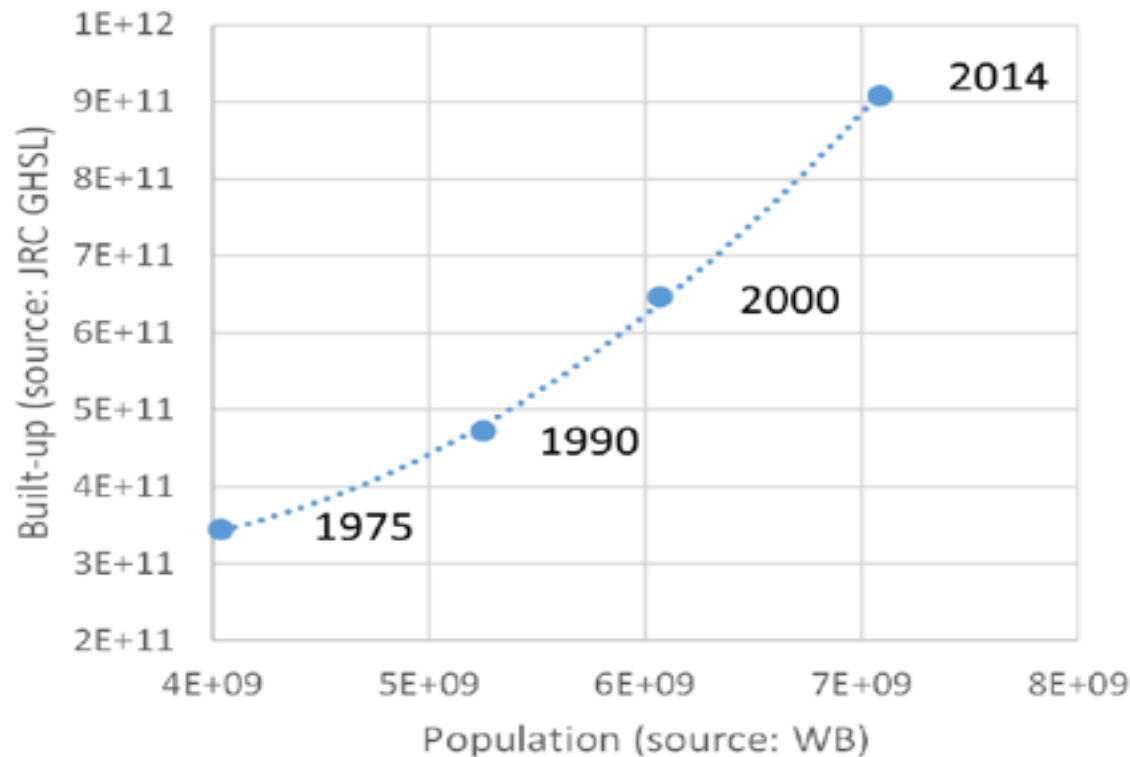


**New information / methods allow to describe  
global settlement dynamics**

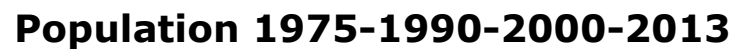
1975 -----1990-----2000-----2014

## Global population and built-up areas evolution in the last 40 years.

The fine-scale built-up areas are estimated by the JRC GHSL using Landsat input imagery  
Population estimates are extracted from the World Bank data



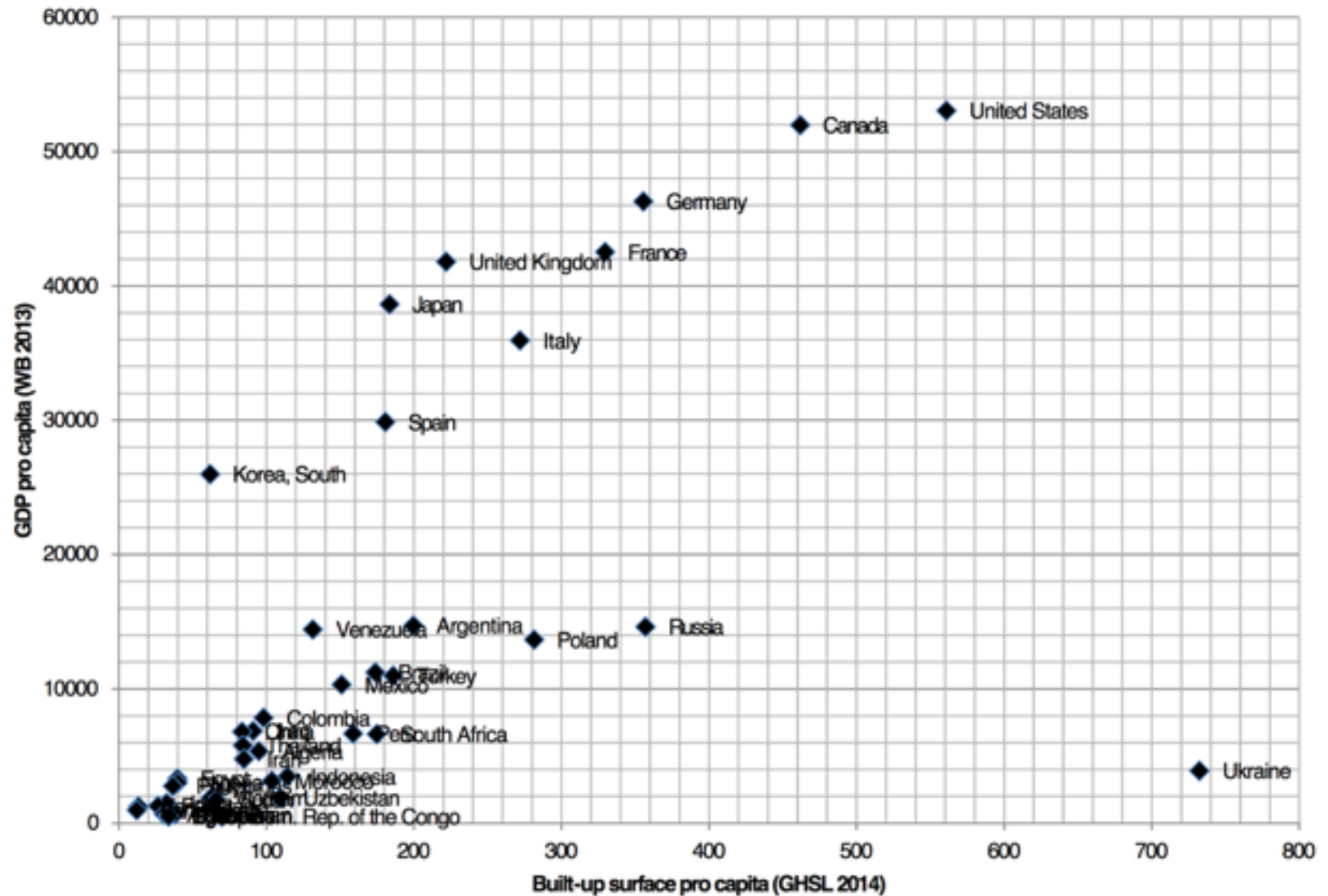
## Built-up surface pro capita 1975-1990-2000-2013







## Built-up vs. GDP pro capita



# Global Human Settlement WG

Group on Earth Observations (GEO), October 2014. [http://  
www.earthobservations.org/ghs.php](http://www.earthobservations.org/ghs.php)

To develop a new generation of measurements and information products assessing new scientific evidences about global human settlement

To support global policy processes with agreed, actionable and goal-driven metrics

- the UN Third Conference on Housing and Sustainable Urban Development (Habitat III, 2016)
- the concurrent post-2015 processes on sustainable development,
- the UN Framework Convention on Climate change
- the Hyogo framework for disaster risk reduction





The GHSL data will be released officially Habitat III (Oct 2016)  
Open free public data and public method

On-going pre-release sharing in the GHS WG

Join us! [martino.pesaresi@jrc.ec.europa.eu](mailto:martino.pesaresi@jrc.ec.europa.eu)

**THANKS**