

The European Commission's science and knowledge service

Joint Research Centre



Dados globais sobre a presença humana na Terra: o projecto GHSL

Sergio FREIRE e equipa GHSL

Desarrollo y Fortalecimiento de Estadísticas e Indicadores Ambientales en los países de América Latina:

El camino conjunto de los ODS e ILAC

Rio de Janeiro, 11-15 Dez. 2017

Geo-informação sobre assentamentos humanos

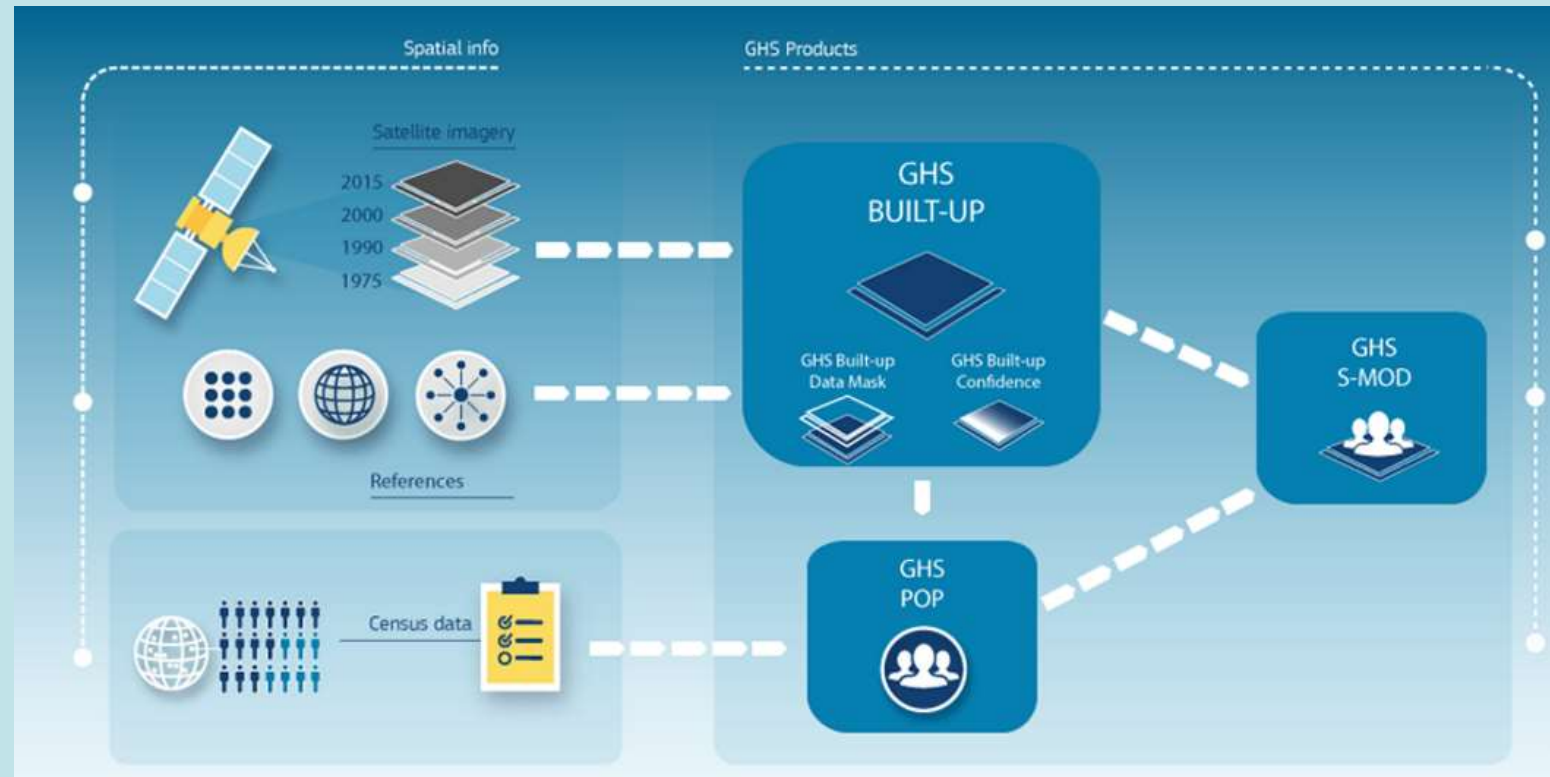
- Necessária para **modelação, análise, *policy-making*** (i.e. produção de indicadores e monitoramento de objetivos):
 - **Sendai** Framework for DRR 2015-2030 (adopted Mar. 2015)
 - 2030 Agenda for Sustainable Development (**SDGs**, Sept. 2015)
 - **COP 21** Paris Agreement on Climate Change (Nov. 2016)
 - UN **New Urban Agenda** (Dec. 2016)
- **Exposição** (a riscos, poluição,...)
- **Acesso** (a recursos, serviços,...)
- **Impactos** (de desastres ambientais, mudanças climáticas, políticas,...)

Geo-informação sobre assentamentos humanos

- Informação para produção de indicadores e monitoramento de objetivos, a nível global:
 - **Atualizada**
 - **Detalhada**
 - **Consistente** (comparavel)
 - **Sustentavel** (repetivel, baixo custo)
 - **Transparente** (métodos claros)
 - **Livre & aberta** (+ acessivel)

O projecto GHSL

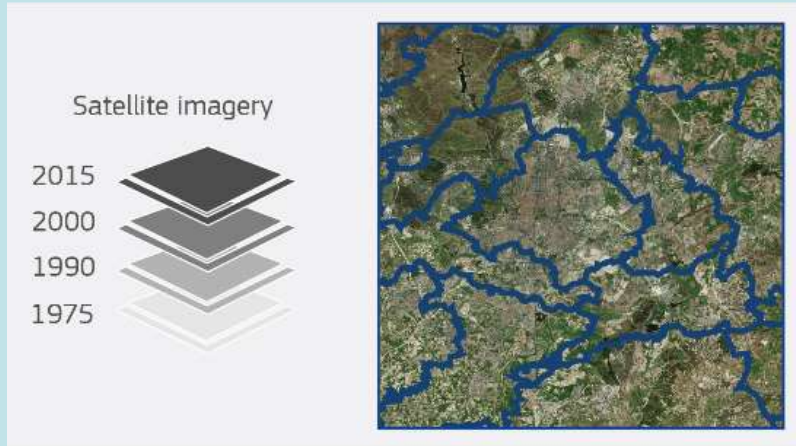
- GHSL = Global Human Settlement Layer



- Modelos
- Ferramentas
- Dados geospaciais
- Analise espacial

O projecto GHSL

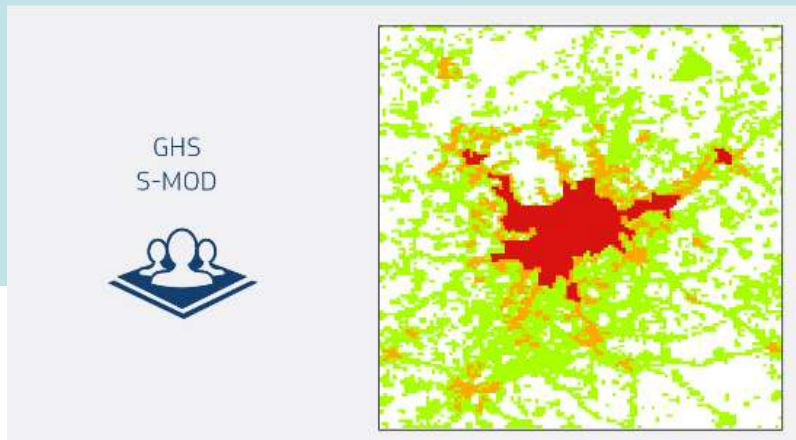
1



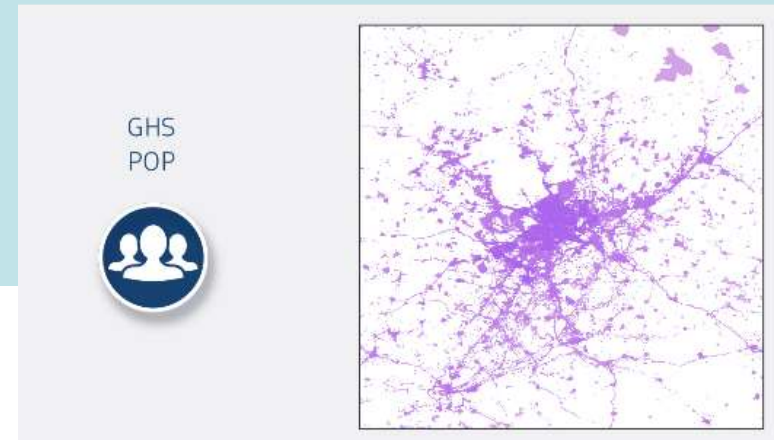
2



4



3



• Imagens satellite

• Edificado

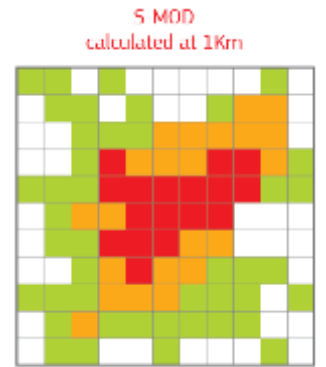
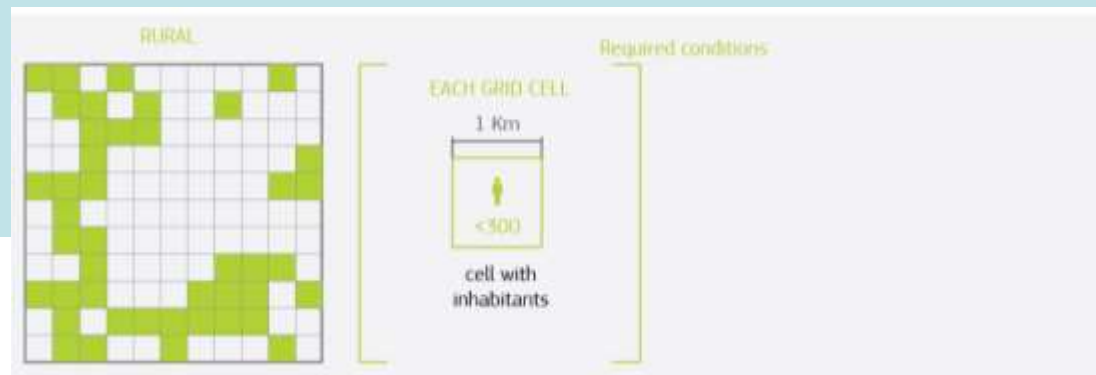
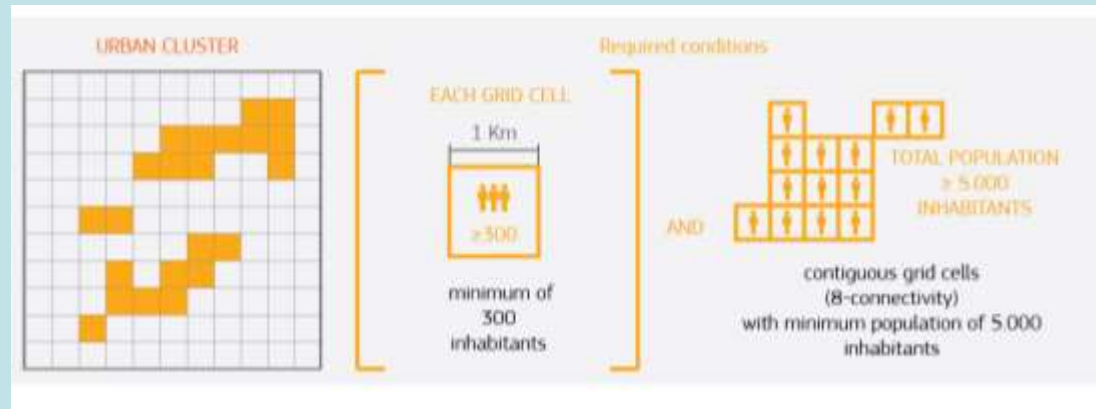
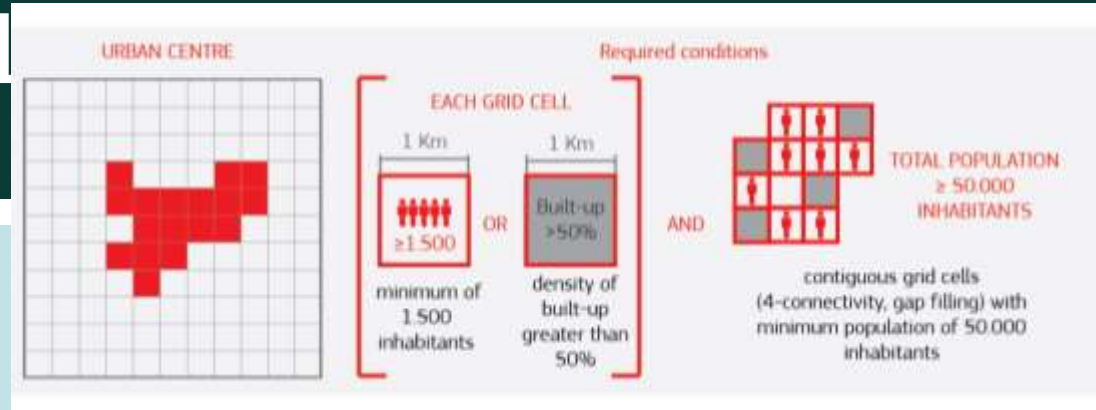
• Assentamentos

• População

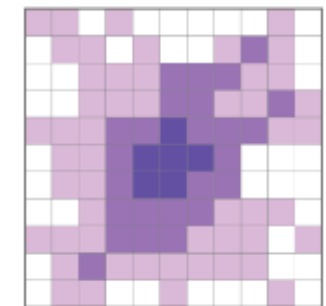
O projecto GHS

Nova definição de cidades e assentamentos humanos:

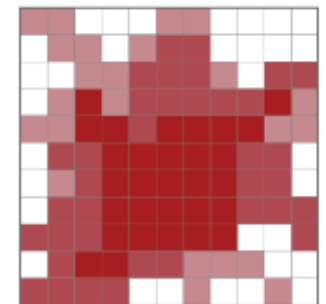
- Harmonizada globalmente
- Baseada na população
- Multi-temporal
- 1975-1990-2000-2015



POPULATION GRID
aggregated from 250m



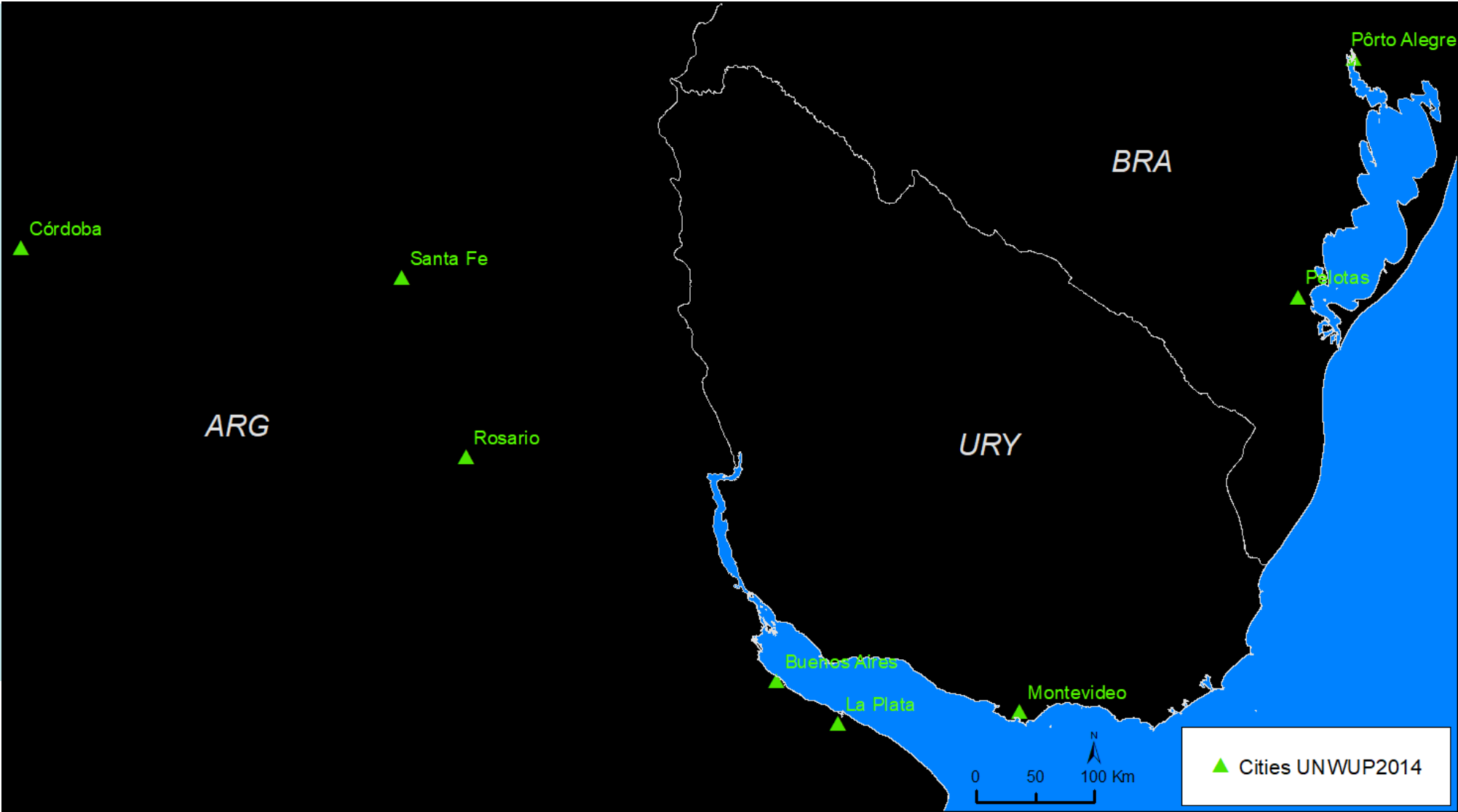
BUILT UP
aggregated from 58m



Os dados GHSL

- Cidades no WUP 2014

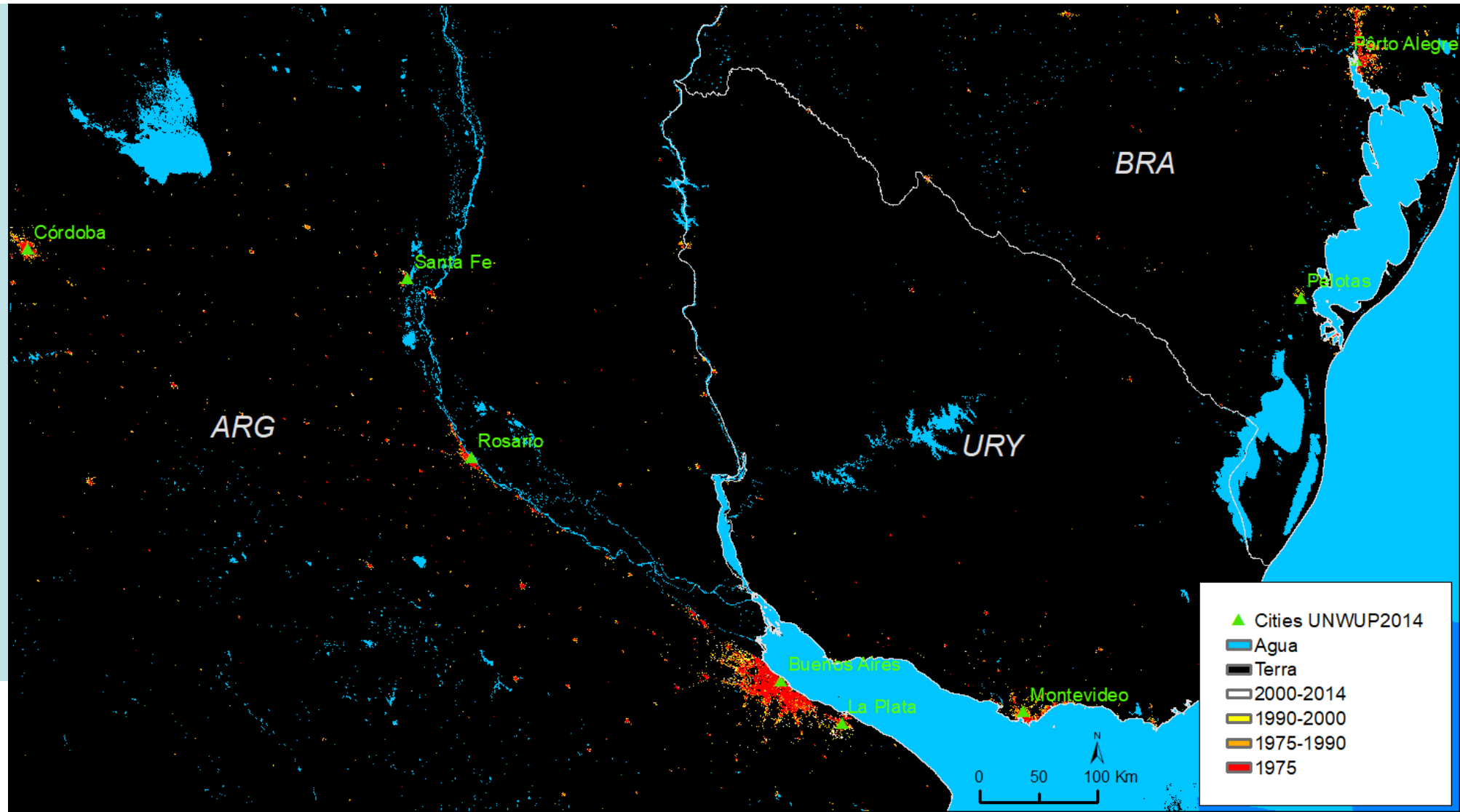
Argentina
Brasil
Uruguay



Os dados GHSL

- GHSL:
- **Edificado**
- @ 38 m
- 1975
- 1990
- 2000
- 2014

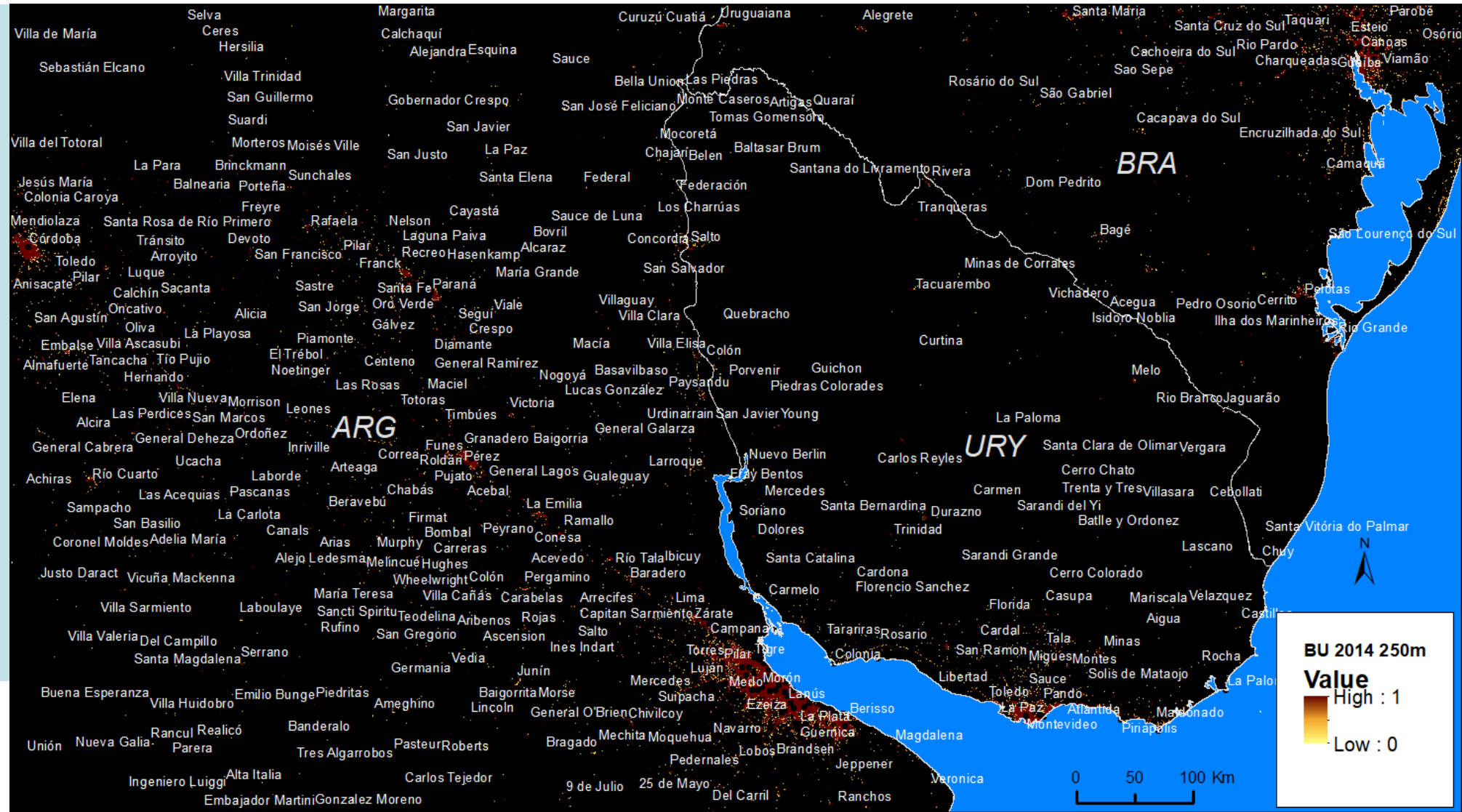
Argentina
Brasil
Uruguay



Os dados GHSL

- GHSL:
- **Edificado**
- @ 250 m
- 1975
- 1990
- 2000
- 2014

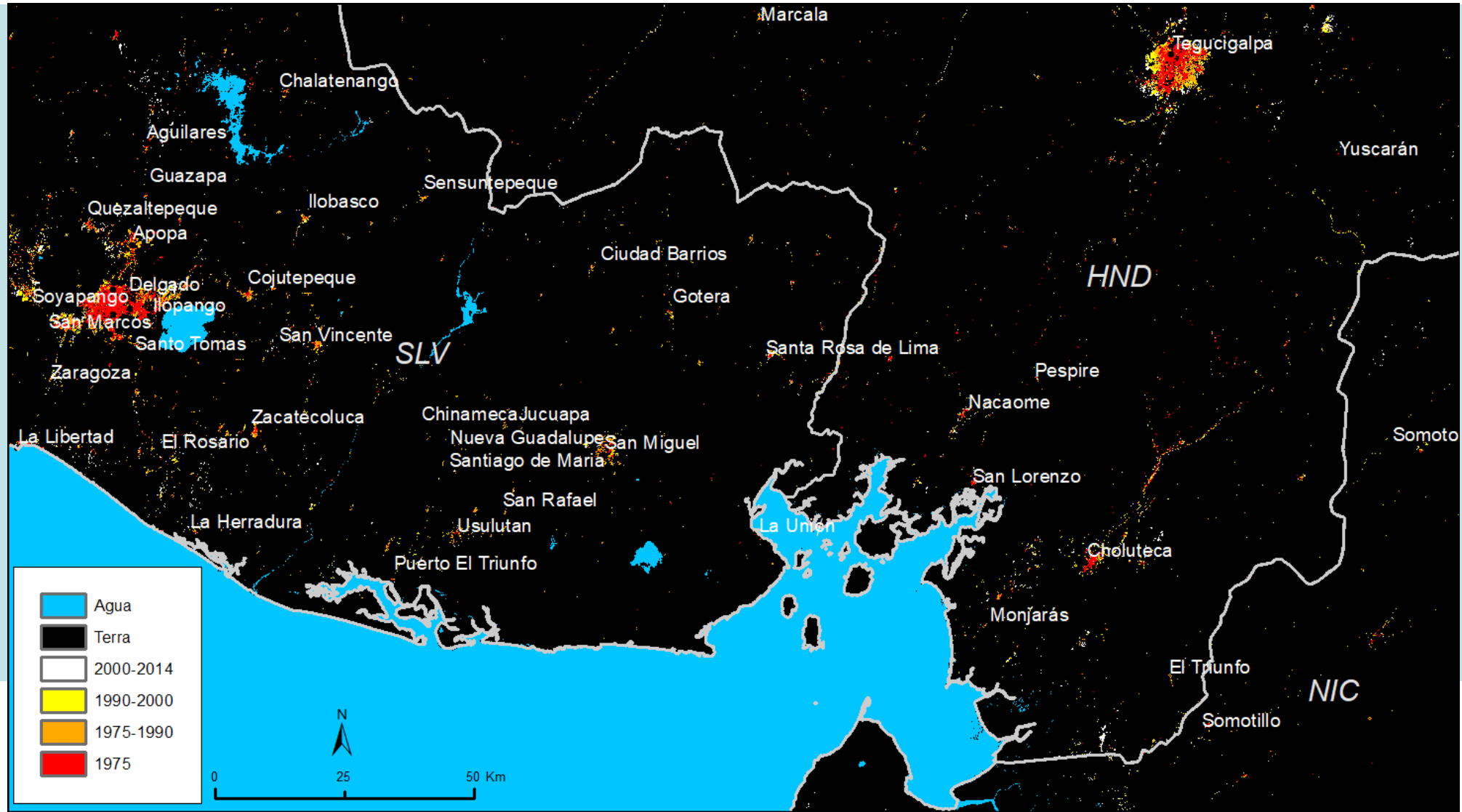
Argentina
Brasil
Uruguay



Os dados GHSL

- GHSL:
- **Edificado**
- @ 38 m
- 1975
- 1990
- 2000
- 2014

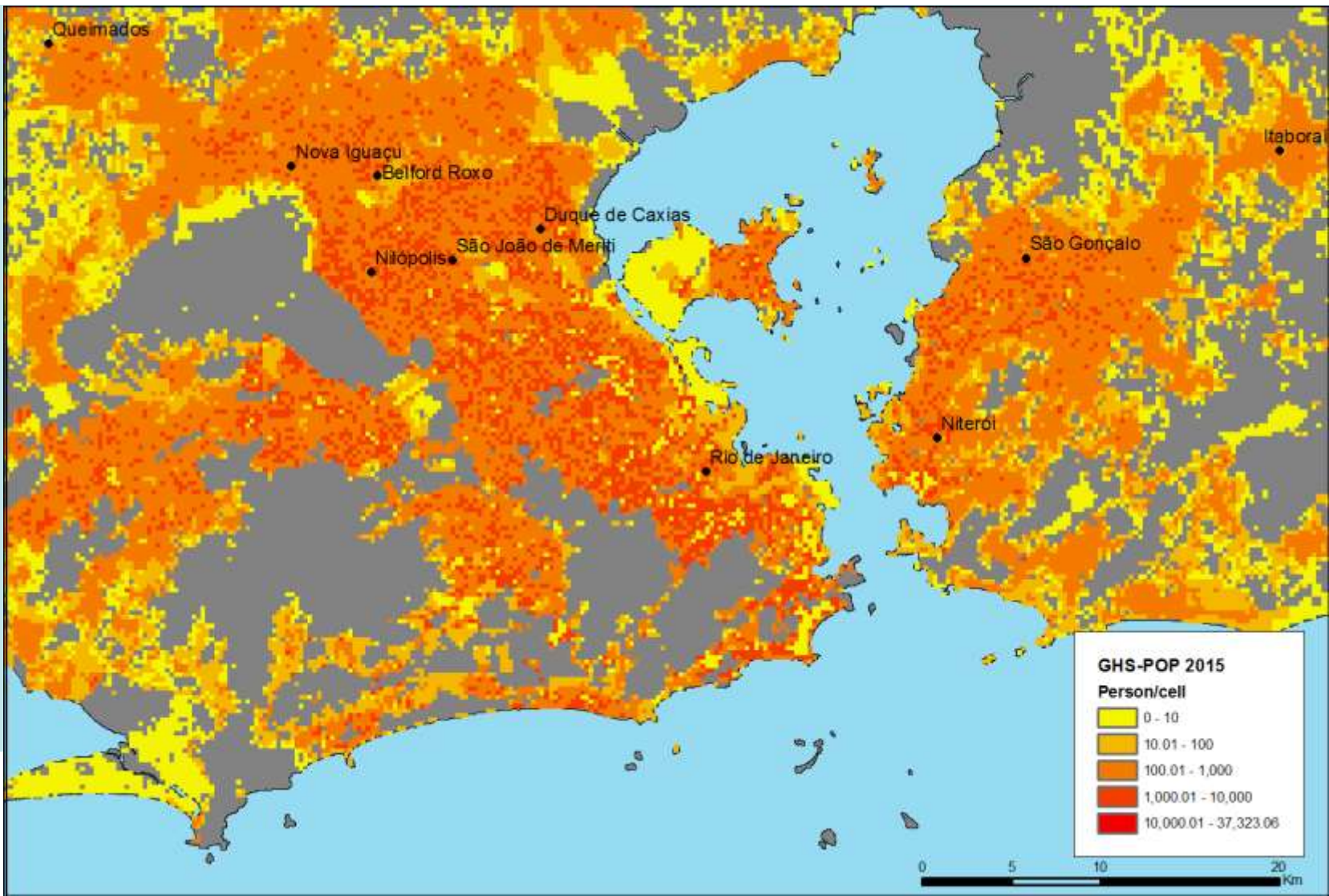
El Salvador
Honduras
Nicaragua



Os dados GHSL

- GHSL:
- **População**
- @ 250 m
- 1975
- 1990
- 2000
- 2015

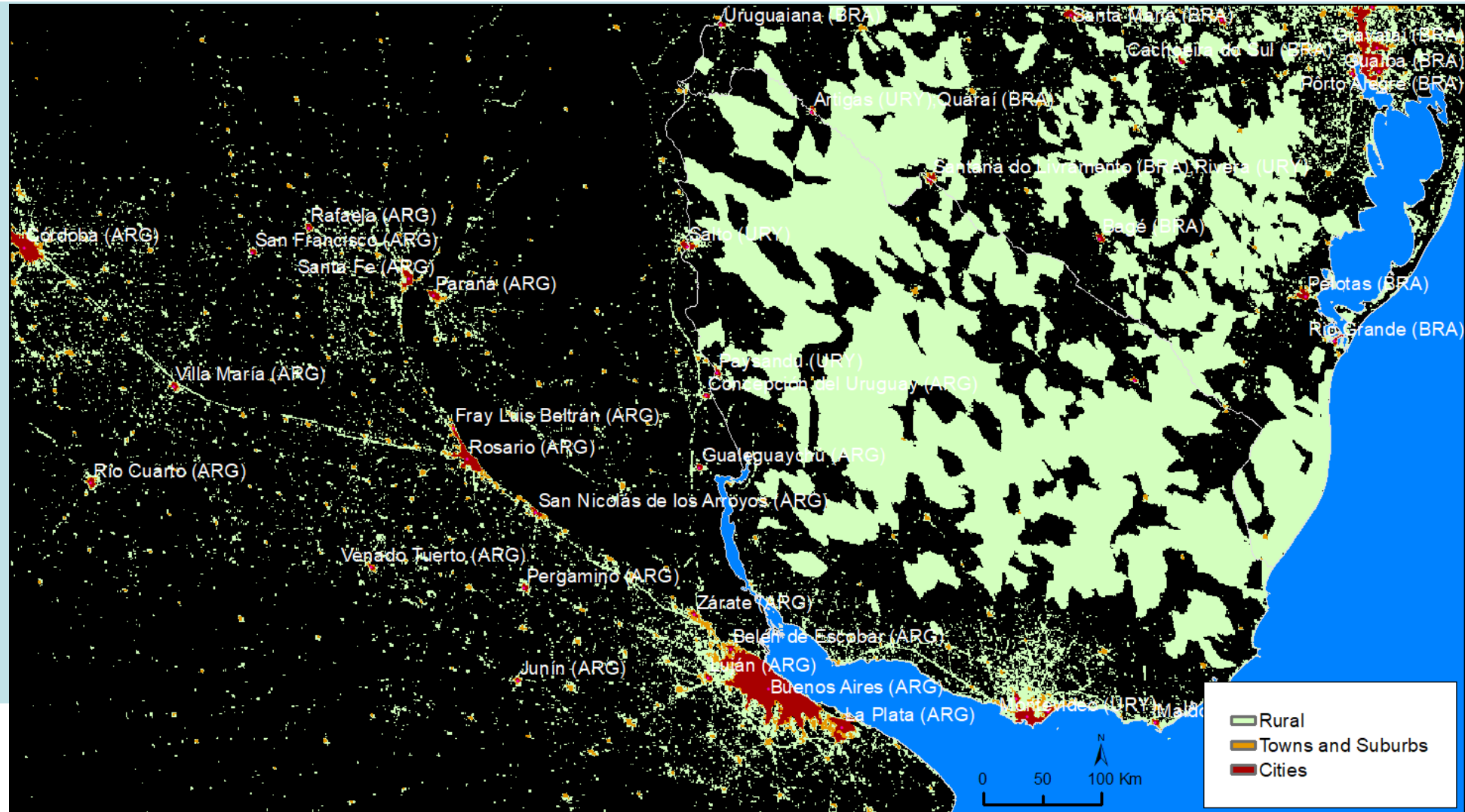
Rio de Janeiro
1975-2015



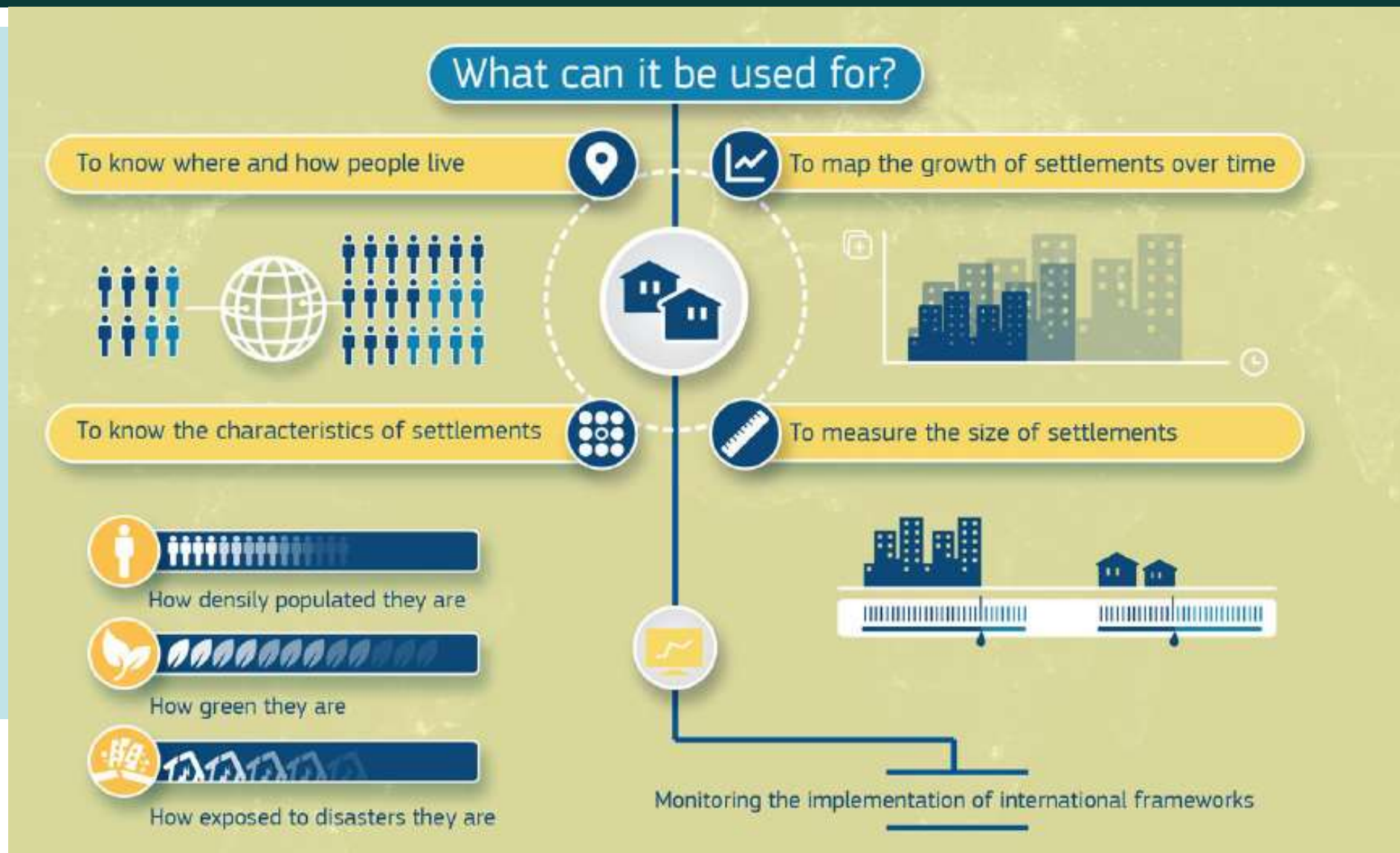
Os dados GHSL

- GHSL:
- Classificação de **assentamentos**
- @ 1 km
- 1975
- 1990
- 2000
- 2015

Argentina
Brasil
Uruguay



A análise e informação GHSL



Atlas 2016

Permite análise consistente e global:

- Urbanização
- População
- Assentamentos



Atlas 2016 – key findings

Today 7.3 billion people live and work in only 7.6% of the global land mass

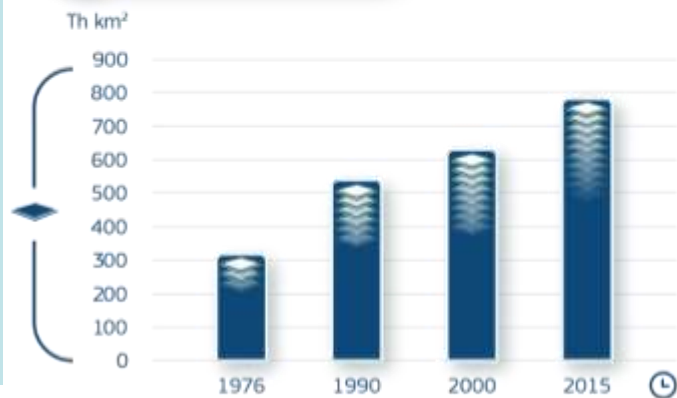


7.3 billion



7.6%

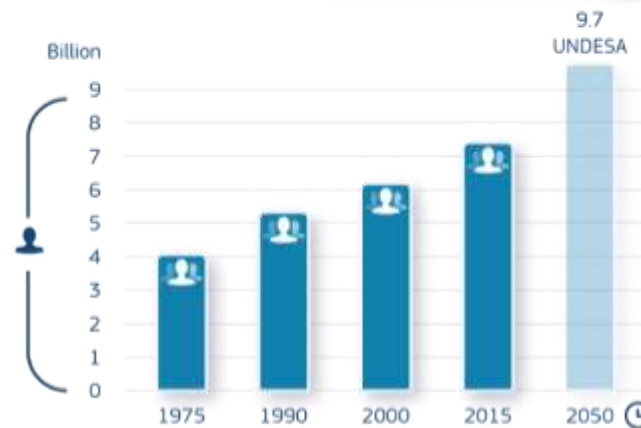
Built-up area



x 2.5

In the last 40 years built-up area increased by approximately 2.5 times

Population



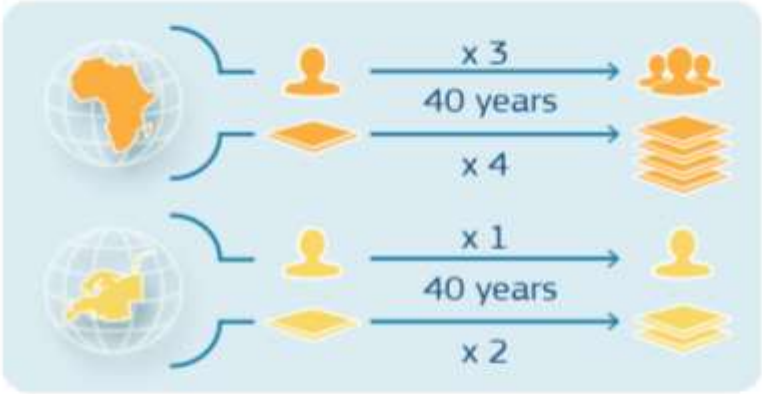
x 1.8

In the last 40 years population increased by 1.8 times



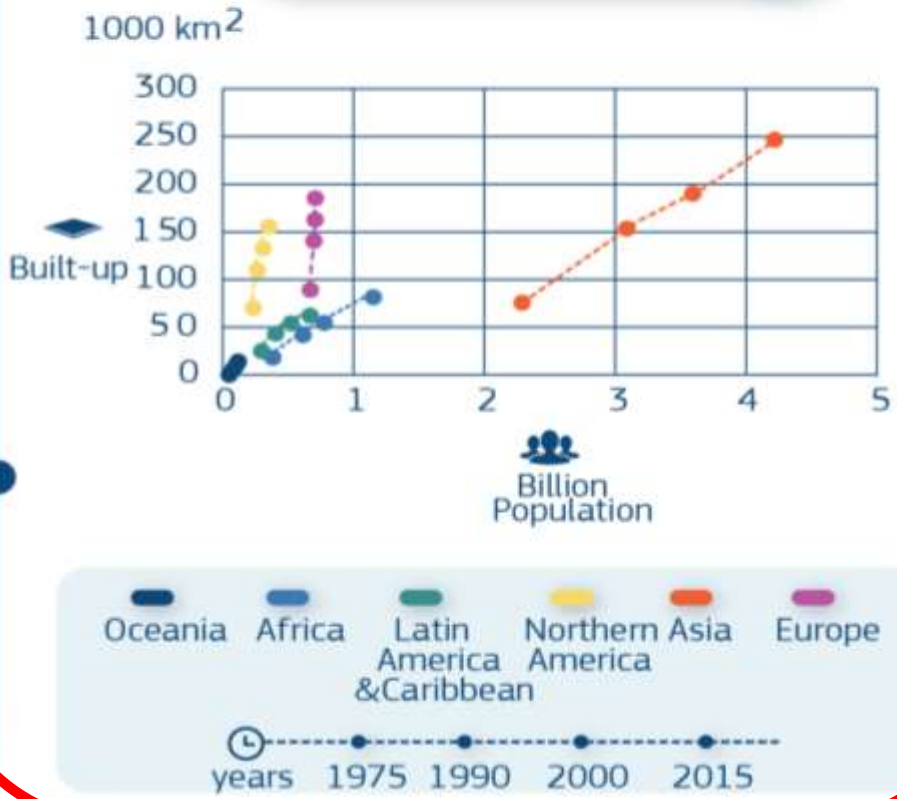
Atlas 2016 – key findings

The dynamic of population and built-up increase have very strong regional differences

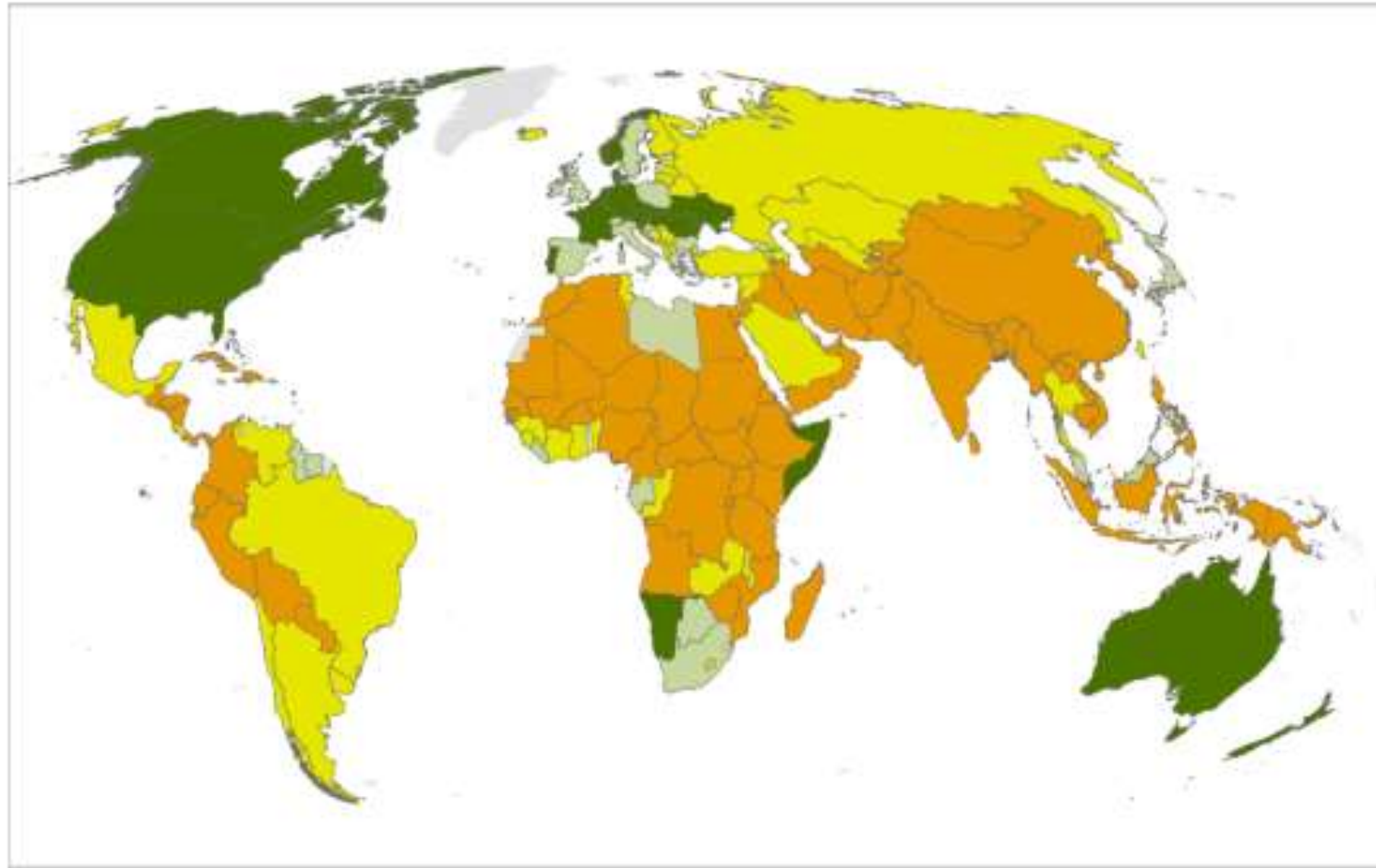


Asia is by far the most populated continent and has since the year 2000 also the biggest amount of built-up areas

Growth of population and built-up



Atlas 2016 – key findings



Built-up per capita in 2015

< 90 sqm/inhabitant

90 - 180 sqm/inhabitant

180 - 300 sqm/inhabitant

> 300 sqm/inhabitant

Data not available



Atlas 2016 – key findings

Great inequalities
between rich
and poor in built-up
space per capita



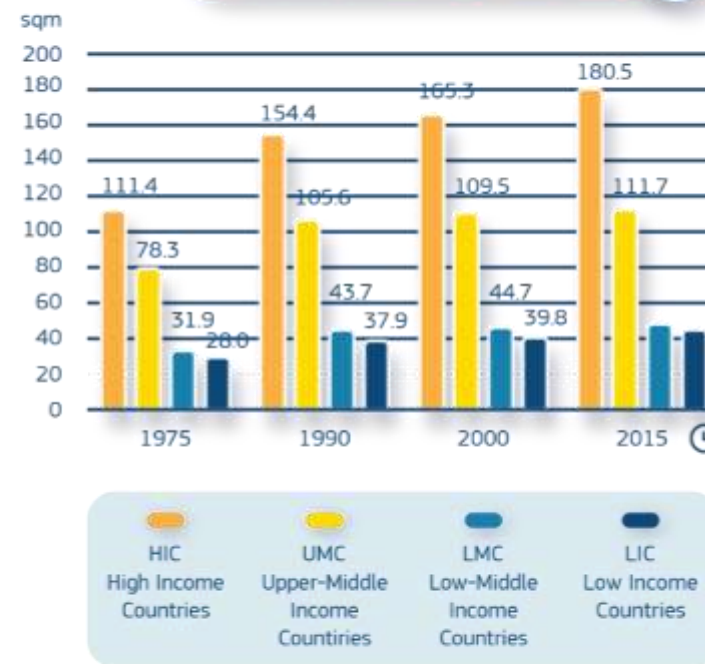
The High Income Countries (HIC) have increased the available built-up area per capita. The built-up area per capita in Low-Middle Income Countries (LMC) and Low Income Countries (LIC) is only less than one quarter of that of HIC

180,5
HIC

43,7
LIC

Square metres per inhabitant

Built-up area per capita
in different income groups



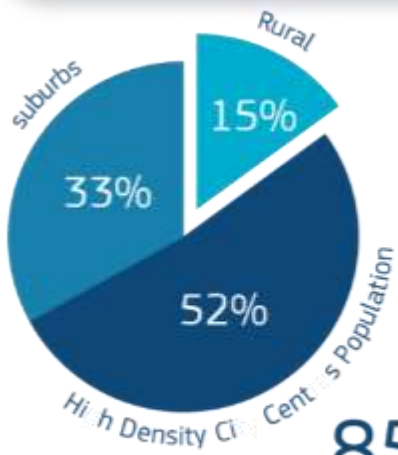
European
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Atlas 2016 – key findings

We are much more urbanised than what we think



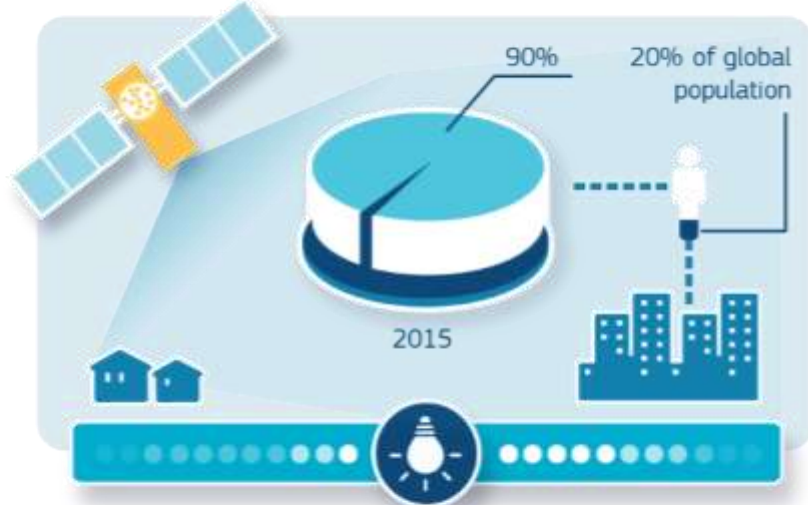
Urbanisation in 2015



3.8 billion people

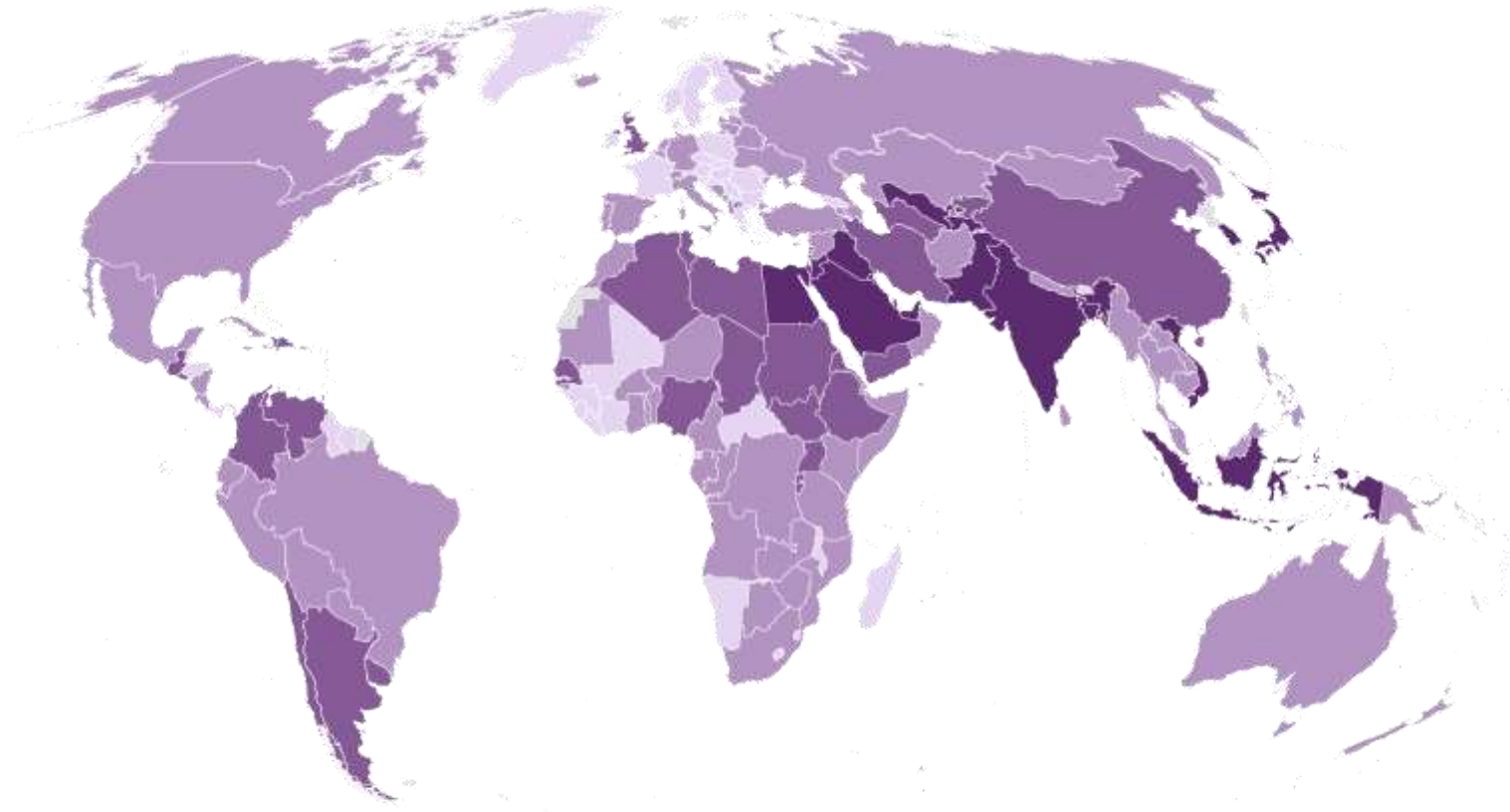
85% urban population

Access to energy is still very unequal




In 2015, 90% of the night light observed from space was emitted from urban areas that host only 20% of the global population

Atlas 2016 – key findings




Urbanization Ratio in 2015

 < 70%

 70% - 84%

 84% - 90%

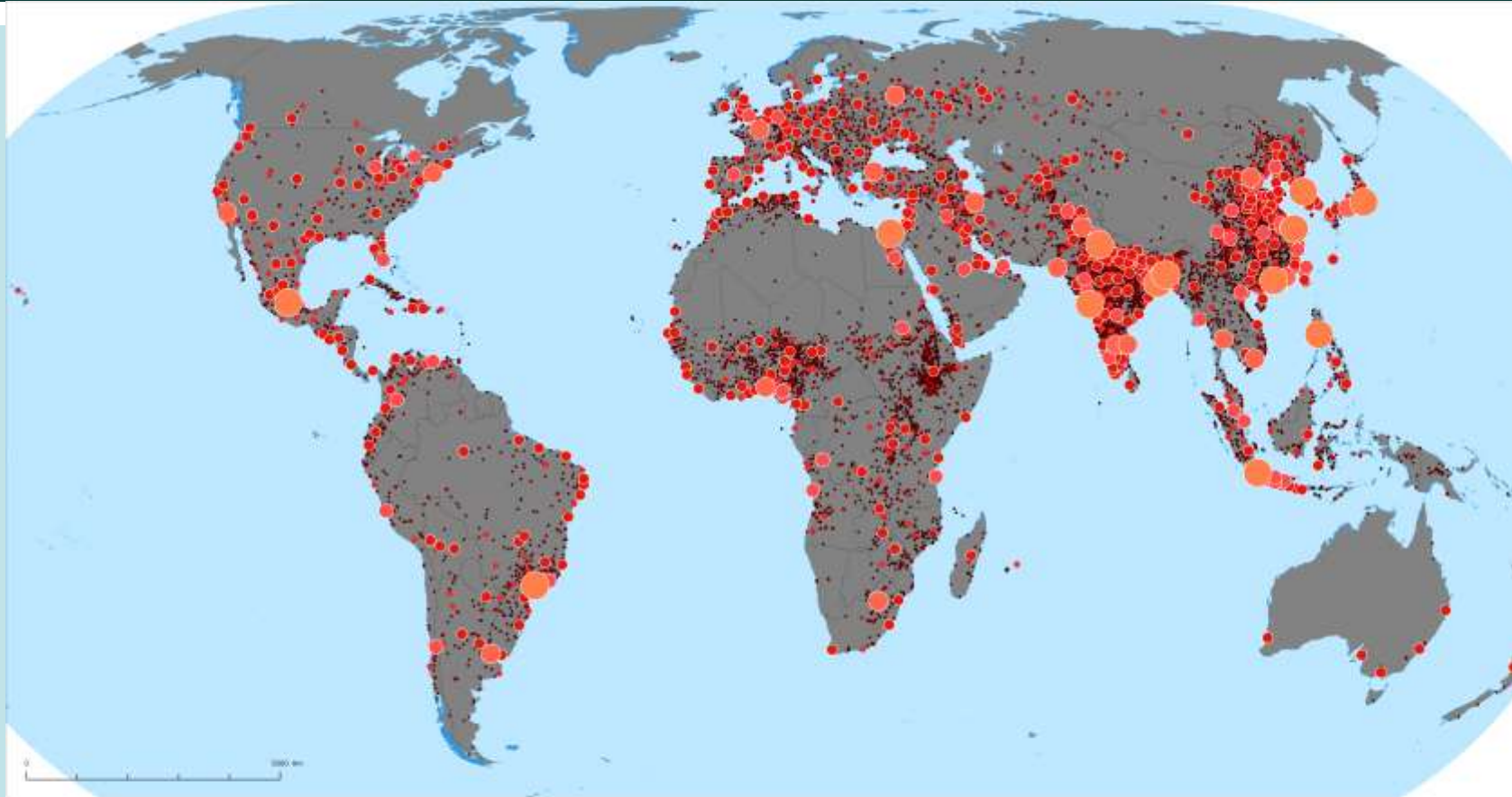
 > 90%

 Data not available



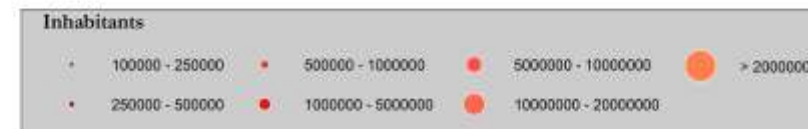
European
Commission

Atlas 2016 – key findings



Urban Centres in the world by population size, 2015

Source : JRC (GHS - POP Global Settlement Model)



Atlas 2016 – key findings

32 urban centres with more than 10 million inhabitants in 2015



The GHSL web platform

- Informação (relatórios, artigos, atlas)
- Visualização
- Baixar (dados, ferramentas)
- Feedback



The screenshot shows the top part of the GHSL web platform. At the top right, there are links for 'Legal notice', 'Cookies', 'Contact', 'Search', and 'English (en)'. The main header features the European Commission logo and the text 'EUROPEAN COMMISSION Global Human Settlement'. Below this is a navigation menu with 'Home', 'About', 'Copernicus', 'Documents', 'Atlases', 'Global Definition', 'Data', 'Tools', 'Visualisation', and 'News'. The main content area is titled 'GHSL - Global Human Settlement Layer' and includes a sub-header 'A new open and free tool for assessing the human presence on the planet'. A list of bullet points describes the tool's features and its support by the JRC, DG REGIO, and the GEO Human Planet Initiative. A 'News' section at the bottom mentions the 'Human Planet Forum 2017' in Enschede, Netherlands. On the right side, there is a gold medal icon with the number '1' and the text 'Geospatial World Excellence Award'.

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European Commission
EUROPEAN COMMISSION
Global Human Settlement

European Commission > EU Science Hub > GHSL

Home | About | Copernicus | Documents | Atlases | Global Definition | Data | Tools | Visualisation | News

GHSL - Global Human Settlement Layer

A new open and free tool for assessing the human presence on the planet

- Produces new global spatial information, evidence-based analytics and knowledge describing the human presence on the planet
- Operates in an open and free data and methods access policy (open input, open method, open output)
- Supported by the Joint Research Centre (JRC) and the DG for Regional Development (DG REGIO) of the European Commission, together with the international partnership [GEO Human Planet Initiative](#)

News 07/09/2017 [Human Planet Forum 2017](#) - The 2017 Human Planet Forum will take place in Enschede, Netherlands, 13-15 September 2017. The forum is open to established and potential partners interested to engage with the GEO Human Planet Initiative.

Geospatial World Excellence Award

<http://ghsl.jrc.ec.europa.eu/index.php>

Obrigado

Muchas gracias



Questoes?

Pode encontrar-me em sergio.freire@ec.europa.eu

Joint Research Centre (JRC)
Directorate E. Space, Security & Migration
Disaster Risk Management Unit

<http://ghsl.jrc.ec.europa.eu/index.php>