

FIVE PRINCIPLES OF

Global Statistical and Geospatial Framework

REGIONAL WEBINAR SERIES

PRINCIPLE

1

**“Use of fundamental geospatial
infrastructure and geocoding”**

Claudio Stenner

Director of Geoscience of Brazilian Institute of geography and Statistics
Co-chair of UN Expert Group on Integration of Statistical and Geospatial
Information



NACIONES UNIDAS

CEPAL



UN-GGIM:Americas

REGIONAL COMMITTEE OF UNITED NATIONS
ON GLOBAL GEOSPATIAL INFORMATION
MANAGEMENT FOR THE AMERICAS

The Global Statistical Geospatial Framework

The GSGF and the EG-ISGI

2019
GSGF Adopted

2021
Global Survey on Readiness to Implement the GSGF

2017
GSGF Principles Endorsed

2014
Global Forum on Integration

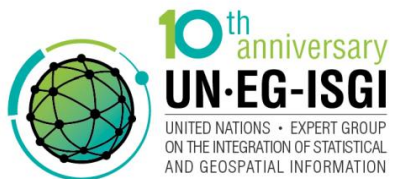
2022
GSGF Implementation Guide Endorsed

2013
EG-ISGI Formation



10th anniversary
UN·EG-ISGI
UNITED NATIONS • EXPERT GROUP
ON THE INTEGRATION OF STATISTICAL
AND GEOSPATIAL INFORMATION

The GSGF and the EG-ISGI



UNITED NATIONS • EXPERT GROUP
ON THE INTEGRATION OF STATISTICAL
AND GEOSPATIAL INFORMATION



WHAT IS THE DATA WE NEED: THE GLOBAL FUNDAMENTAL GEOSPATIAL DATA THEMES



Global Geodetic Reference Frame



Addresses



Buildings and Settlements



Elevation and Depth



Functional Areas



Geographical Names



Geology and Soils



Land Cover and Use



Land Parcels



Orthoimagery



Physical Infrastructure



Population Distribution



Transport Networks



Water



10th anniversary
UN-EG-IGI
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AND GEOSPATIAL INFORMATION

THE GLOBAL STATISTICAL GEOSPATIAL FRAMEWORK

PRINCIPLES

- Accessible & usable
- Statistical and geospatial interoperability
- Common geographies for dissemination of statistics
- Geocoded unit record data in a data management environment
- Use of fundamental geospatial infrastructure and geocoding

KEY ELEMENTS

Standards and Good Practices

National Laws and Policy

Technical Infrastructure

Institutional Collaboration

INPUT

Geospatial

- Fundamental data
- Supplementary data
- New data sources

Statistical

- Censuses
- Surveys
- Administrative data records
- Big data and other sources

OUTPUT

Integration

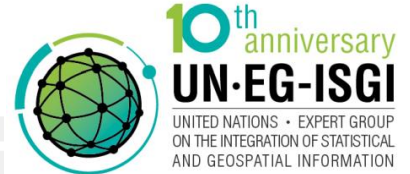
Harmonised and standardised information

Interoperability Comparability

Analysis

Diffusion

Decision making



https://ggim.un.org/meetings/GGIM-committee/9th-Session/documents/The_GSGF.pdf

GUIDANCE TO IMPLEMENT THE GSGF

Translations of the GSGF

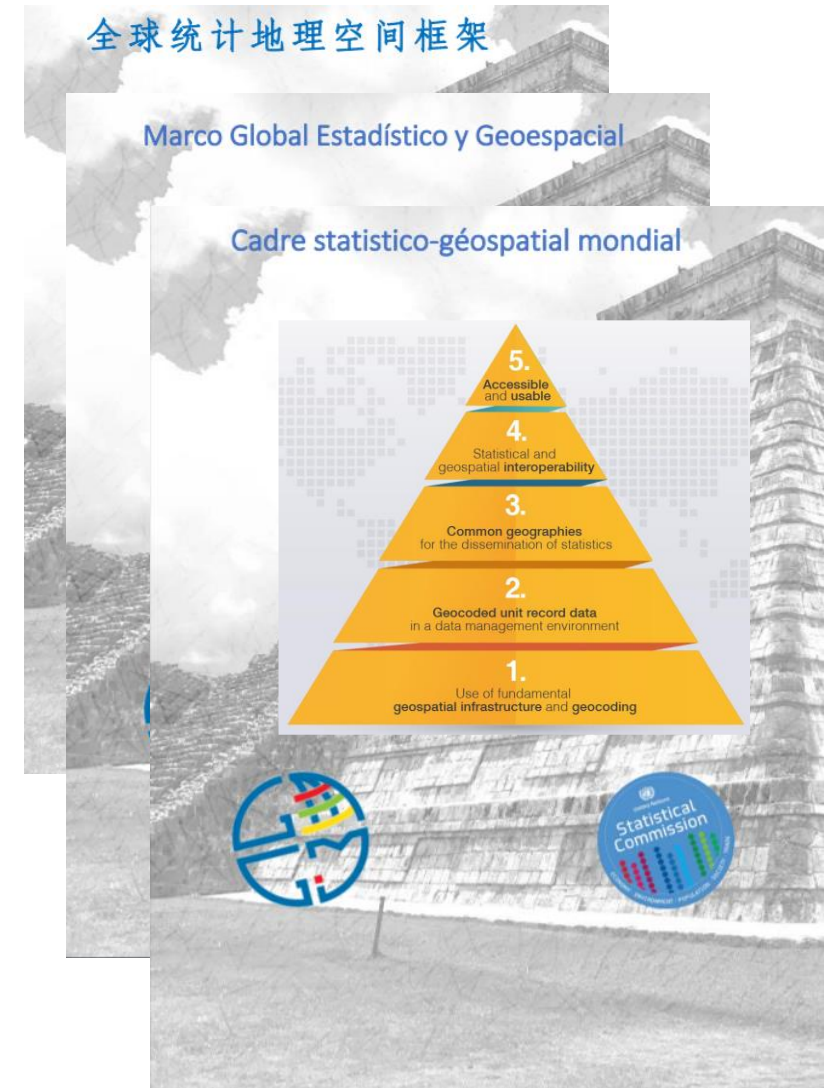
- *Arabic, Chinese, English, French, Portuguese and Spanish have been finalized, the EG-ISGI thanks:*
 - *China (Chinese – Mandarin), Canada and UNECA (French) Mexico, ECLAC and others (Spanish), Brazil (Portuguese), Kuwait (Arabic)*

The GSGF Implementation Guide

- *The GSGF Implementation Guide has been endorsed by both the Statistical Commission and UN-GGIM*

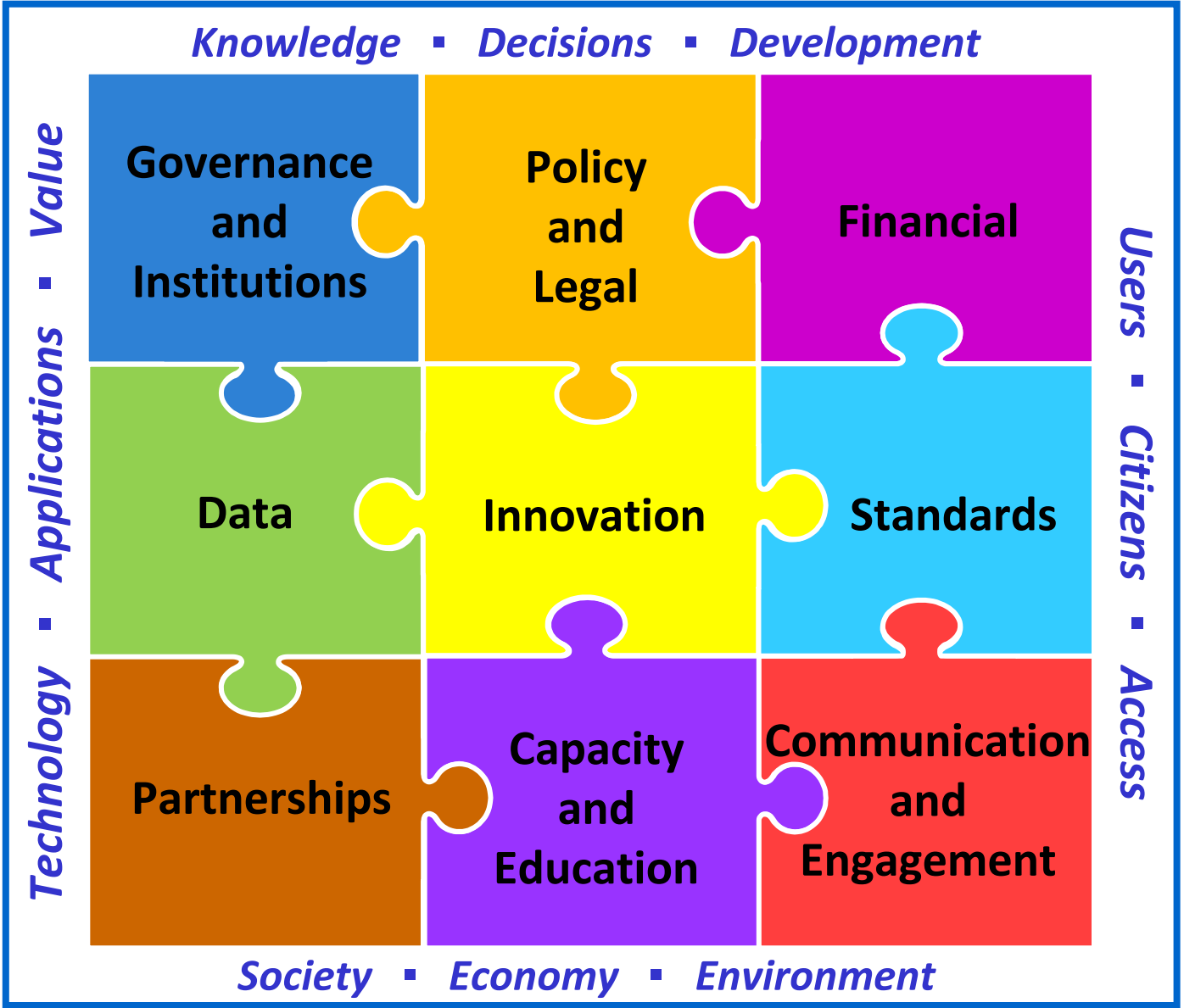
National and Regional Experiences of Implementing the GSGF

- Experiences of how the GSGF is implemented by 29 Member States and 2 Regional Commissions, including how it has assisted the response to COVID-19.



10th anniversary
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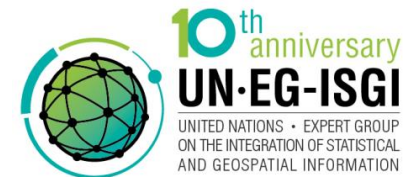
Governance →
Technology →
People →



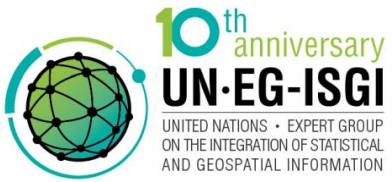
9 Strategic Pathways solve the IGF puzzle

Why GSGF is important?

- To save money
- To Improve Life Quality
- To save lifes

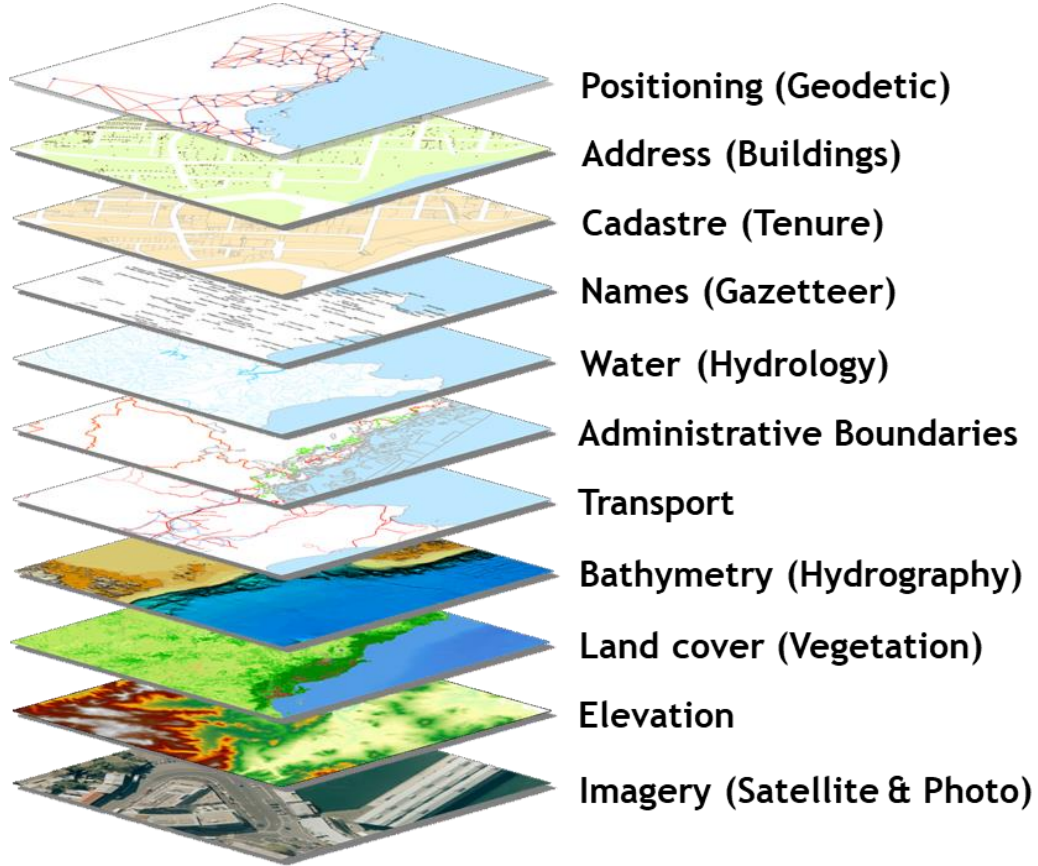


The GSGF



SOME ADVANTAGES OF INTEGRATED DATA

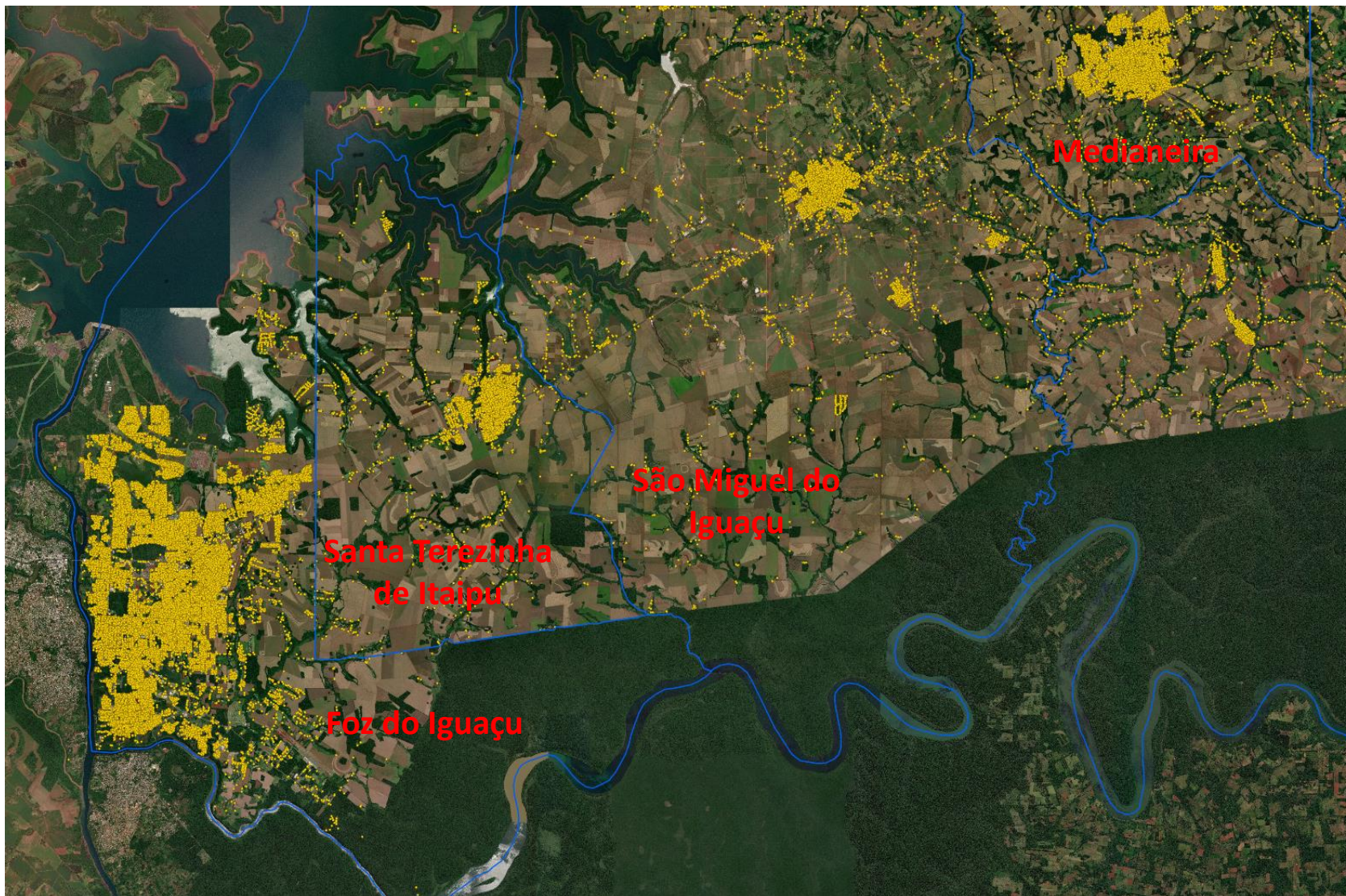
Facilitates the integration of statistical and geospatial information from different sources



Different information, statistics and geospatial, can be analyzed together, improving the understanding of the studied phenomena

SOME ADVANTAGES OF INTEGRATED DATA

Provides a more accurate view of the distribution of people, households and human and natural phenomena in the territory, improving the allocation of human and financial resources



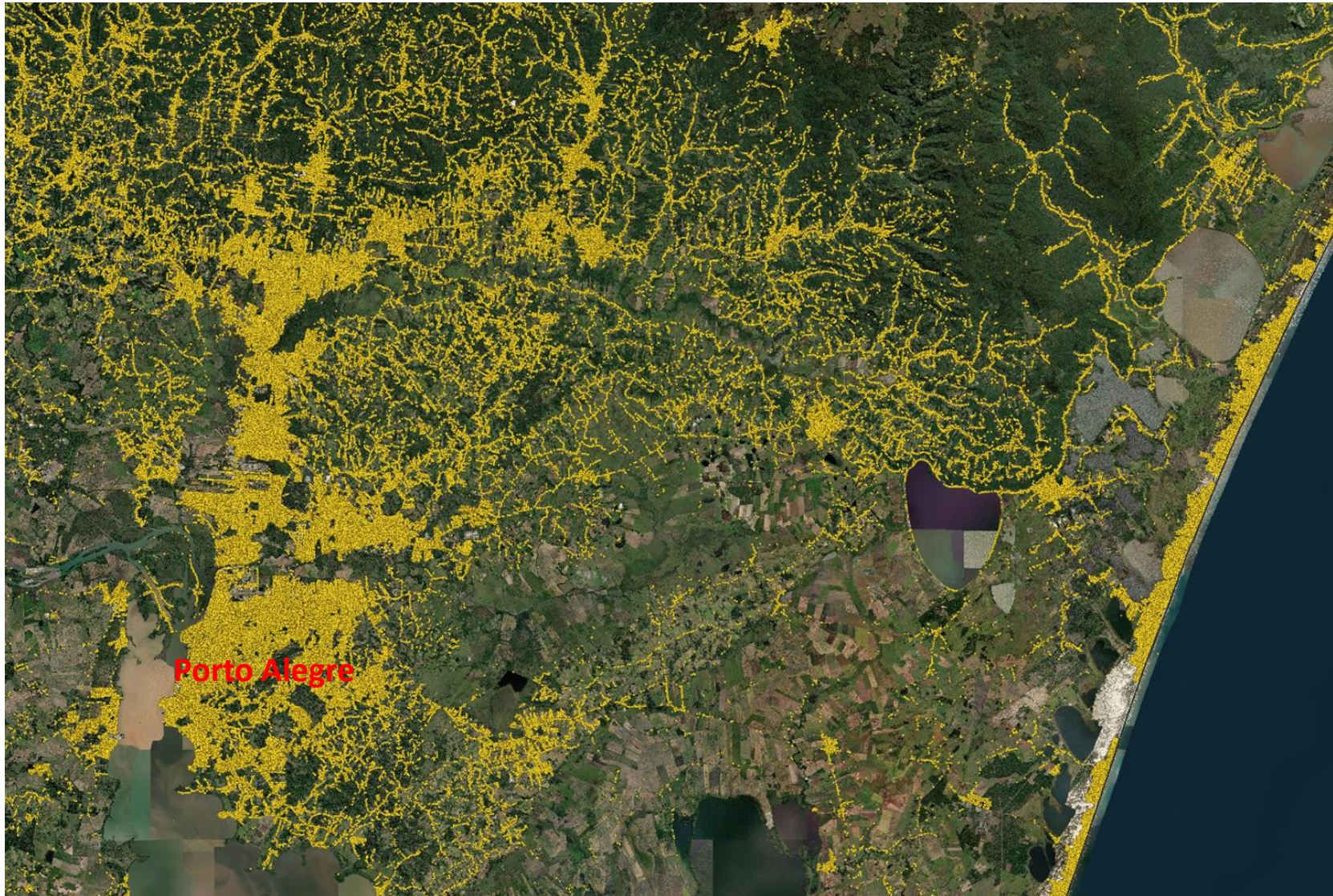
Distribution of households in Foz do Iguaçu and surrounding areas, Brazil. It is possible to observe the urban concentration in Foz do Iguaçu and other cities along the highway, as well as the rural population spread throughout properties in the river valleys. Also notable are the Iguaçu National Park and the Itaipú hydroelectric dam



Source: IBGE, Brazil.

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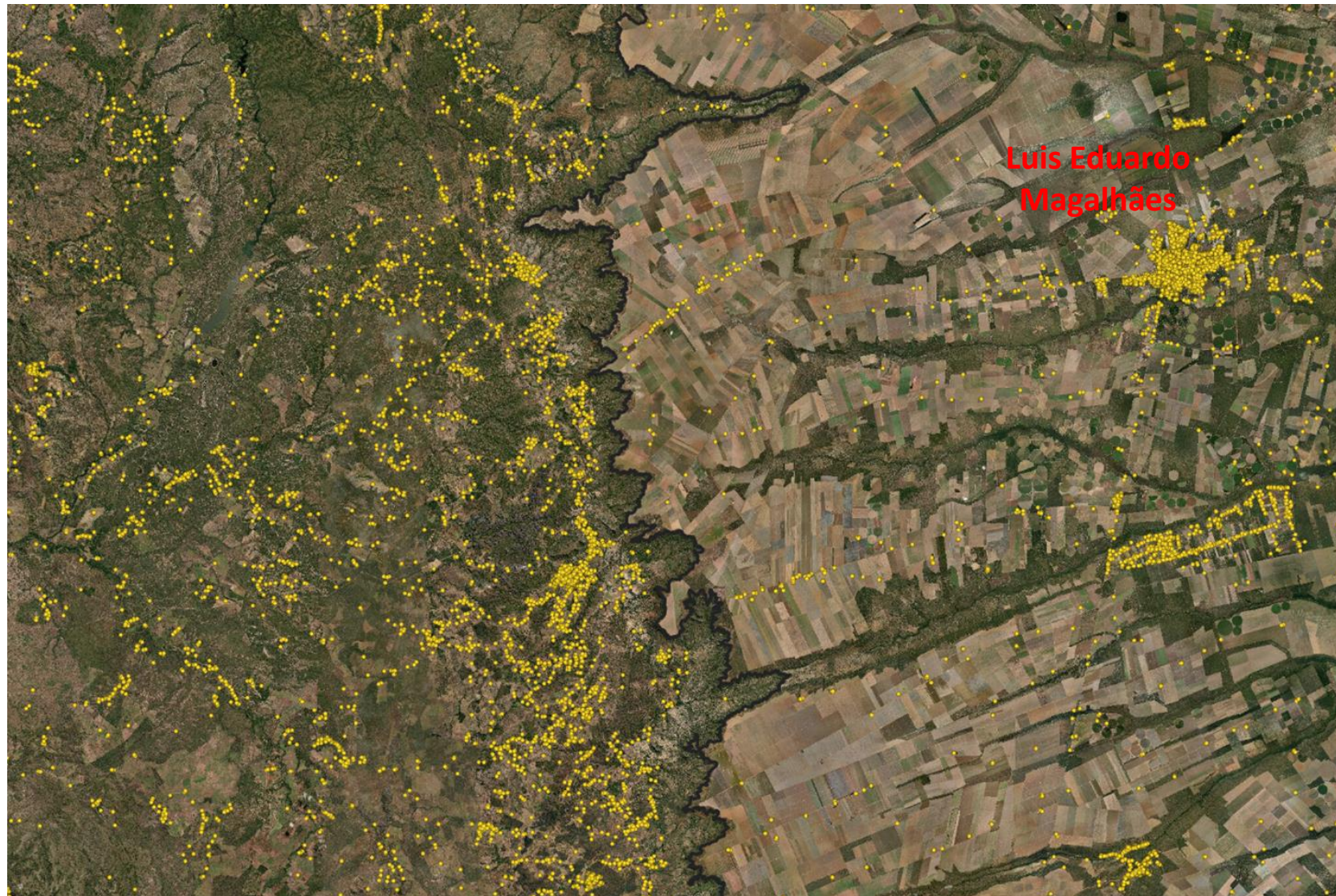
Distribution of households in Porto Alegre and surrounding areas, Brazil. The rural area surrounding Porto Alegre has a high density of rural occupation on small properties. It is also possible to identify summer occupation on the coast.



Source: IBGE, Brazil.

SOME ADVANTAGES OF INTEGRATED DATA

Provides a more accurate view of the distribution of people, households and human and natural phenomena in the territory, improving the allocation of human and financial resources



Distribution of households in Luís Eduardo Magalhães and surrounding areas, Brazil. This area is a large-scale soybean producer, on large mechanized properties. The rural population density is very low. On the other side of the escarpment, the density of rural occupation is significantly higher.



Source: IBGE, Brazil.

SOME ADVANTAGES OF INTEGRATED DATA

Provides a more accurate view of the distribution of people, households and human and natural phenomena in the territory, improving the allocation of human and financial resources



Distribution of households in Cametá and surrounding areas, Brazil. It is possible to identify the riverside population on the islands in the Tocantins River and in the streams inside the islands



Source: IBGE, Brazil.

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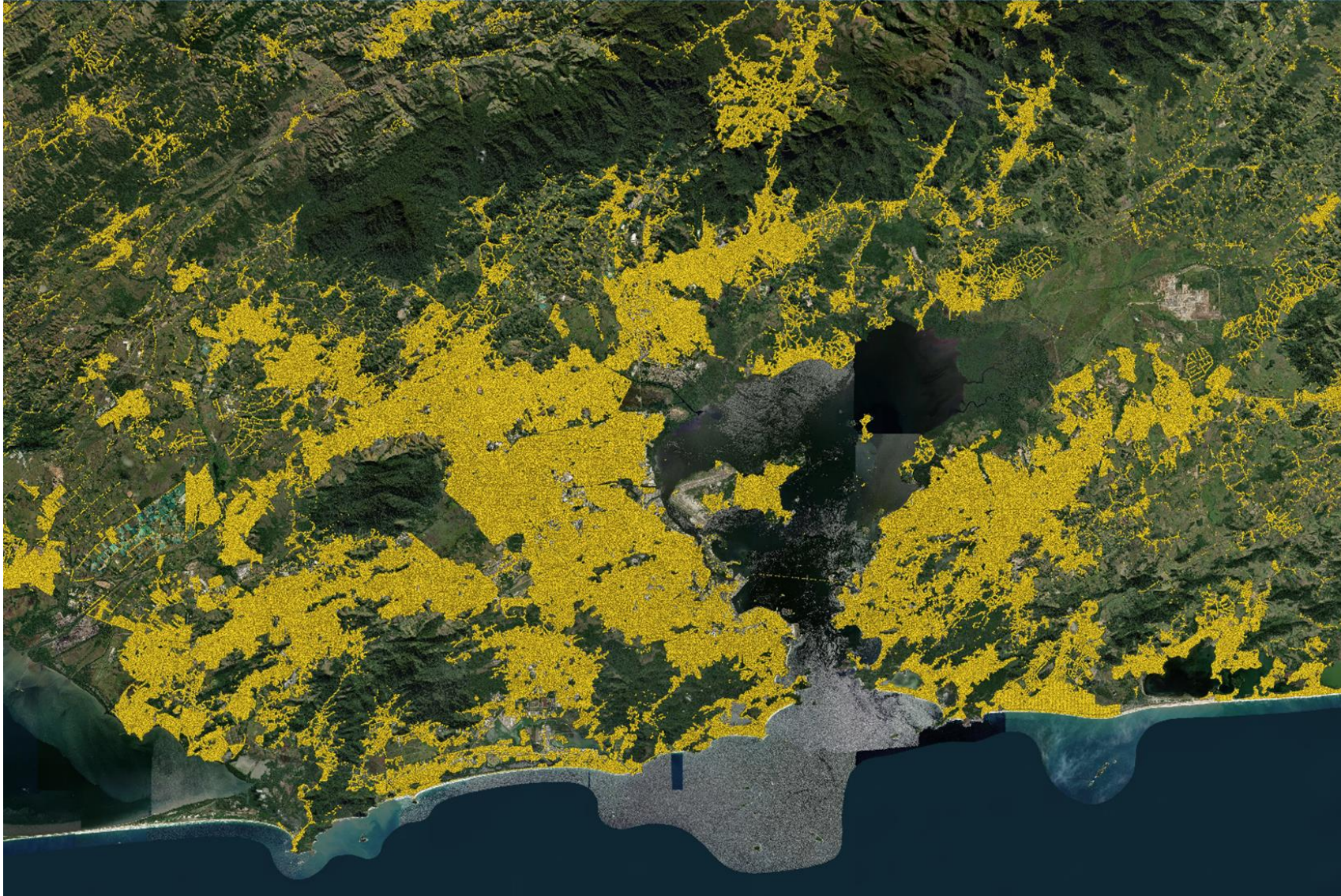
The metropolis of São Paulo, with 21 million inhabitants, spreads across the plateau. Surrounding the city is a densely occupied rural area. On the coast, the port city of Santos and summer occupation along the coast



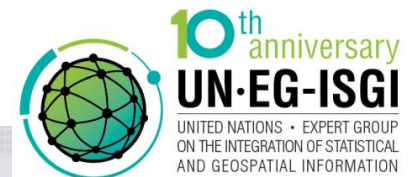
Source: IBGE, Brazil.

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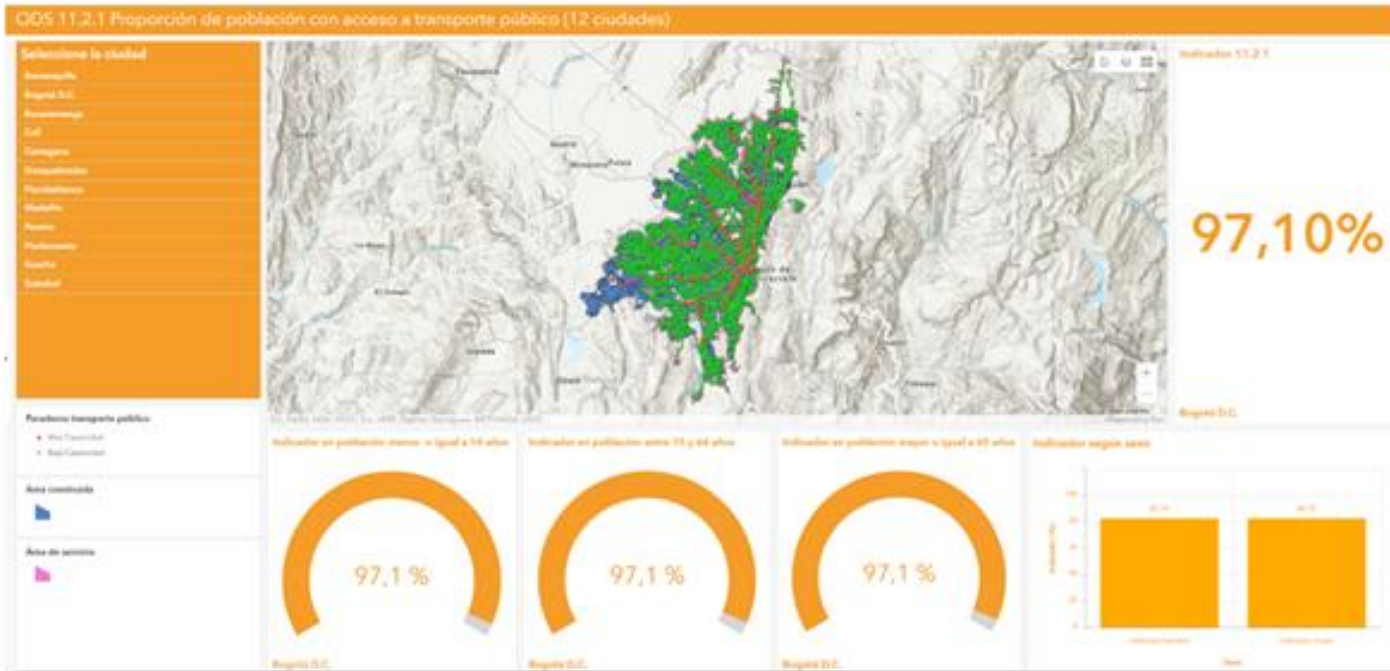
The metropolis of Rio de Janeiro, with 12 million inhabitants, is squeezed between mountains, Guanabara Bay and the sea.



Source: IBGE, Brazil.

SOME ADVANTAGES OF INTEGRATED DATA

Provides new information, which can only be achieved when the statistical and geospatial data are integrated



Source: DANE, Colômbia

Ex: SDG 11.2.1 - Proportion of the population that has convenient access to public transport. Need georeferenced information from Demographic Censuses and georeferenced information on public transport



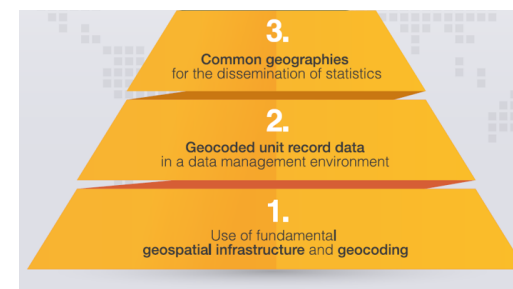
SOME ADVANTAGES OF INTEGRATED DATA

Provides greater meaning to statistical information: A set of common geographies, based on typologies, regional divisions and political-administrative divisions allows the evaluation of statistics in significant geographies for a better understanding of society and to build better public policies.



Source: IBGE, Brazil.

EX: The Slum of Paraisópolis and the wealthy neighborhood of Morumbi are neighbors in São Paulo. The statistics for these two areas need to be analyzed separately. For this, it is necessary to have the Slums in the set of Common Geographies



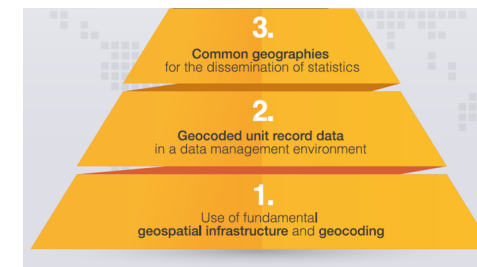
SOME ADVANTAGES OF INTEGRATED DATA

Provides greater meaning to statistical information: A set of common geographies, based on typologies, regional divisions and political-administrative divisions allows the evaluation of statistics in significant geographies for a better understanding of society and to build better public policies.



Fonte: Censo Demográfico, 2010.

Taking advantage of the Slum delimited areas, a work was done in the 2010 Brazilian Census to generate sample expansion areas that portrayed their characteristics. The image shows a regular expansion area of the sample, merging rich areas to the slum area. The result indicates that the whole area has **42.9%** of its population with higher education, but.....

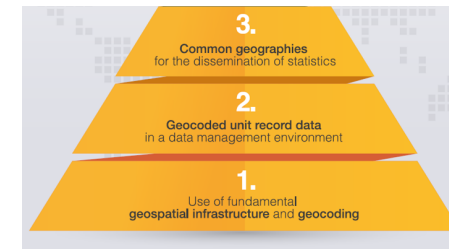
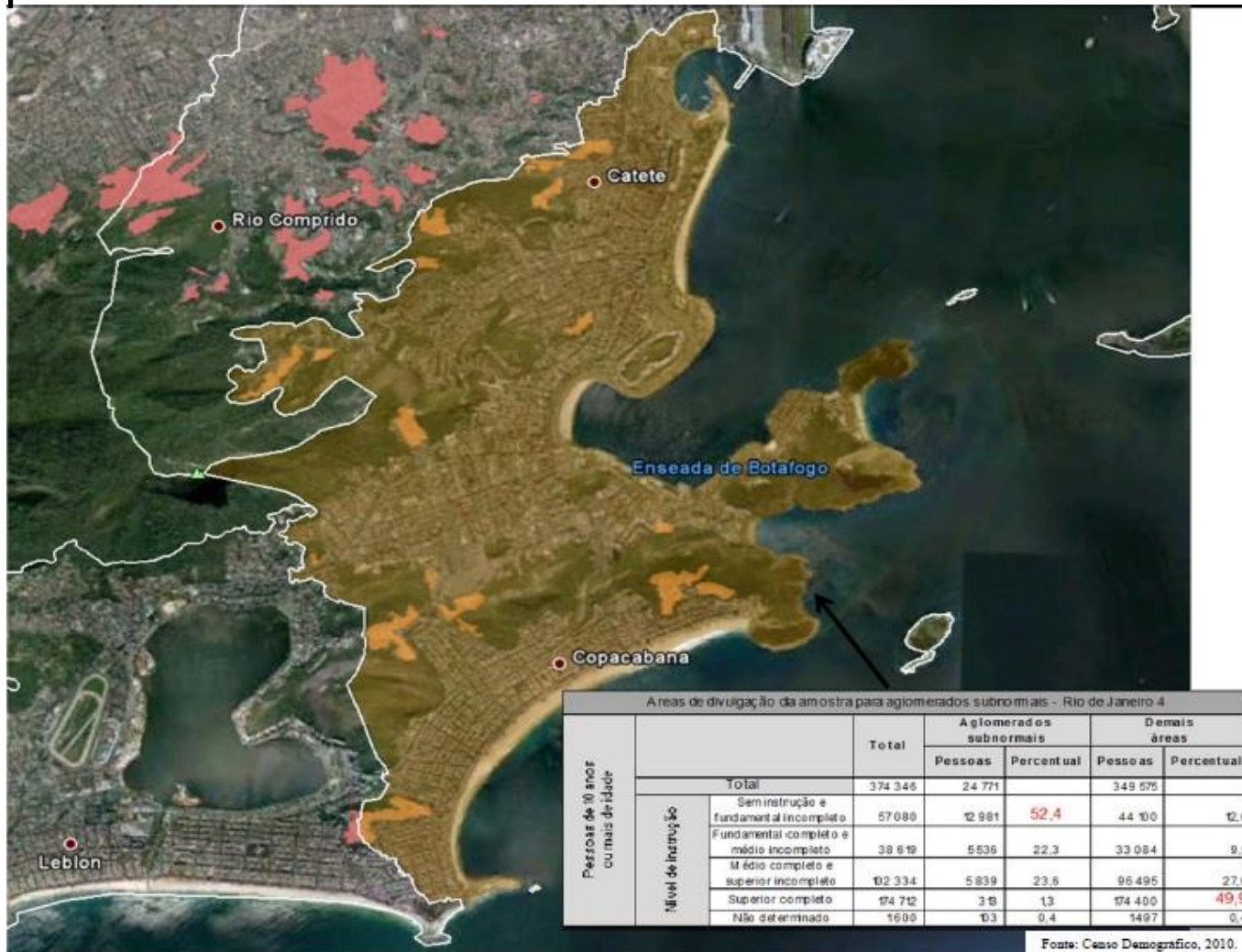


Source: IBGE, Brazil.

SOME ADVANTAGES OF INTEGRATED DATA

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.....when the statistics of the slum areas are isolated, the percentage of population with a higher education is only **1.3%**, while in the regular areas of this part of the city the percentage is **49.9%**. Only integrated geospatial and statistics information can reveal this reality.



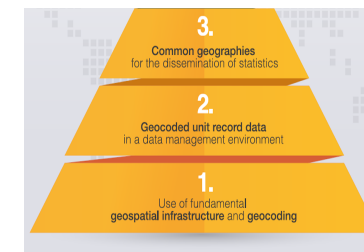
Source: IBGE, Brazil.

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How is it possible to improve public policies through statistical information integrated with geospatial?



Source: IBGE, Brazil.

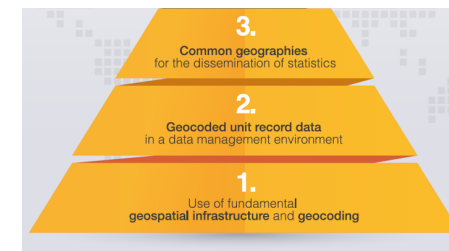
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Source: IBGE, Brazil.

For example, the need for schools can be accurately measured for the population that lives in this small water channel inside the island or, appropriately and efficiently, a treated water supply network for this small village can be designed.



SOME ADVANTAGES OF INTEGRATED DATA

Enables production of information for small areas



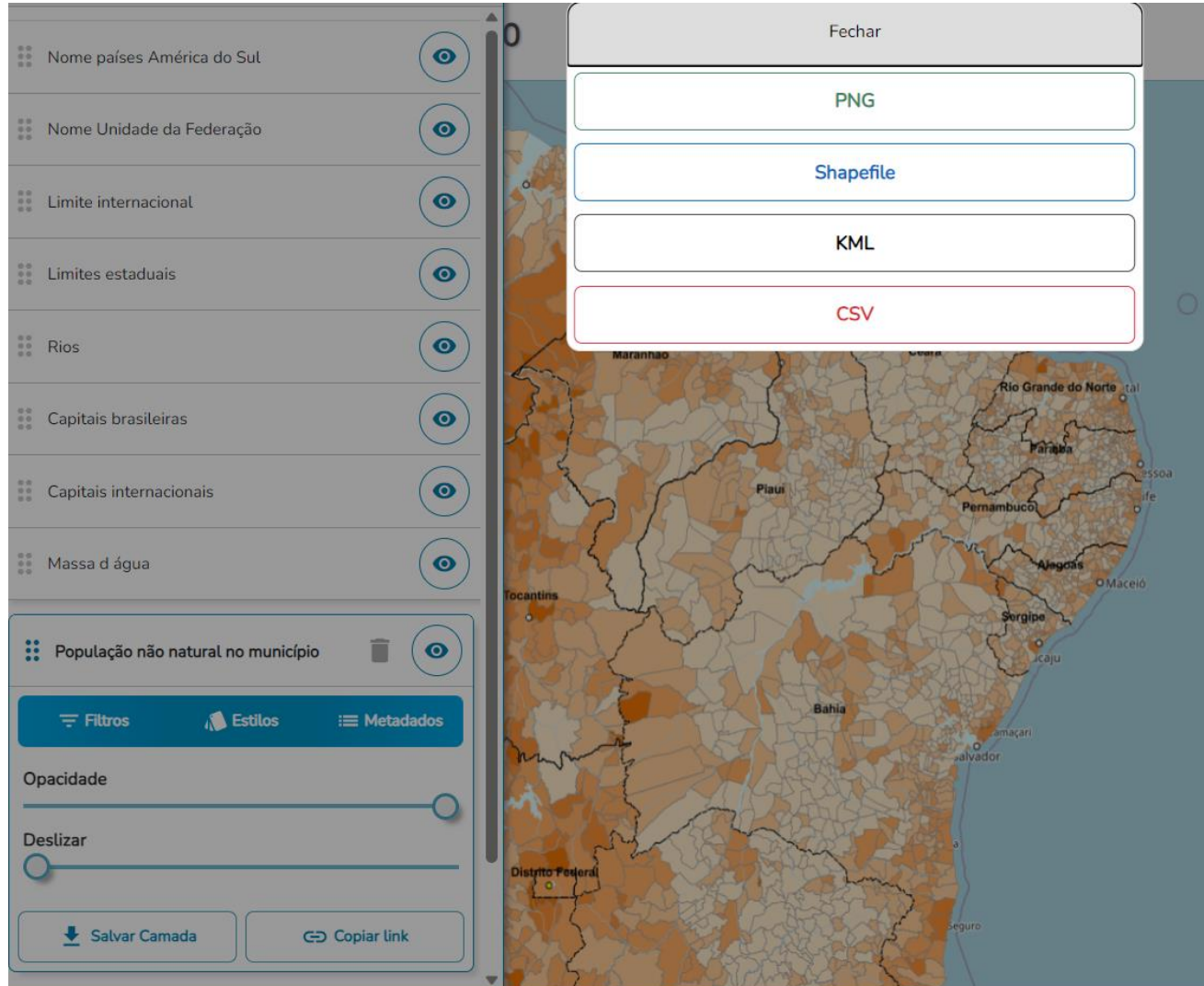
Source: US Census Bureau, USA

In order to leave no one behind, it is necessary that the information be made available to small areas. A efficient public policy needs this kind of geographic disaggregation.

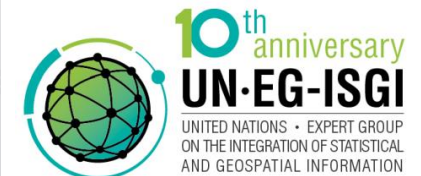


SOME ADVANTAGES OF INTEGRATED DATA

Provides interoperability, easy access and usability of integrated information.



Based on international standards, information can be made available in an accessible and in an interoperable way.



Source: IBGE, Brazil

SOME ADVANTAGES OF INTEGRATED DATA

Improves the quality of statistical data, through planning and supervision of field operations



By capturing coordinates during a census operation, it is much easier to identify the parts of the city that have already been visited by enumerators and thus correct possible omissions.



Source: IBGE, Brazil



Why GSGF...

● save money

● Improve Life Quality

● Save lives



Because...

- It Allows the production of information for small areas;
- It Allows to find the most relevant geography to produce meaningful statistics and better reveal the reality of society;
- It allows public policies to be more efficient and focused in order to leave no one behind;
- It Allows more sophisticated analyzes to be carried out, based on territory, and with the integration of different themes;



Because...

- It allows more efficiency in public and private investments;
- It reduces the possibility of conflicts, as analyzes and actions can be carried out based on territories;
- It improves the quality of statistical data, improving planning and supervision of field operations.



THE POWER OF GSGF TO REVEAL THE REALITY

**Thank you very much!
¡Muchas Gracias!**

claudio.stenner@ibge.gov.br

Chico Mendes
Extractive Reserve, in
the state of Acre
(Brazil), with green
boundaries. The dots
in the image indicate
homes, within the
Amazon forest of
Seringueiros. They
walk through the
forest to extract latex,
the raw material for
natural rubber..



Source: IBGE, Brazil.