Regional virtual seminar series on the GSGF and its five principles
First seminar – Principle 1

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The Second Edition of the Global Statistical Geospatial Framework and its Principle 1

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Photo by Rowan Simpson on Unsplash

Contents

GSGF 1st Edition

Executive Summary vii

List of Abbreviations viii

Introduction 1

Part 1: The Global Statistical Geospatial Framework 6

Principle 1: Use of fundamental geospatial infrastructure and geocoding 9

Principle 2: Geocoded unit record data in a data management environment 10

Principle 3: Common geographies for dissemination of statistics 11

Principle 4: Statistical and geospatial interoperability 12

Principle 5: Accessible and usable geospatially enabled statistics 13

Complementary Initiatives 14

Call to Action and the Way Forward 15

Part 2: Elaborating in detail the Global Statistical Geospatial Framework 16

Principle 1: Use of fundamental geospatial infrastructure and geocoding 17

Principle 2: Geocoded unit record data in a data management environment 20

Principle 3: Common geographies for dissemination of statistics 24

Principle 4: Statistical and geospatial interoperability 27

Principle 5: Accessible and usable geospatially enabled statistics 31

Part 3: Annexes 34

Annex A: Definition of Terms 35

Annex B: Standards, Quality and Enabling Frameworks 37

Annex C: Further Reading 46

Contents

GSGF 2nd Edition

Foreword 4

Executive Summary 6

List of Key Abbreviations 8

Introduction 9

About the GSGF 10

How to use this paper 11

Part 1: The GSGF framework and its components 14

Stage 1: Data Inputs 14

Stage 2: The Key Elements 15

Stage 3: The Five Principles of the GSGF 17

Stage 4: GSGF outputs 17

Part 2: The Five GSGF Principles 19

Principle 1: Use of fundamental geospatial infrastructure and geocoding 20

Principle 2: Geocoded unit record data in data management 27

Principle 3: Common geographies for dissemination of statistics 33

Principle 4: Statistical and geospatial interoperability in data standards, processes and organizations 39

Principle 5: Accessible and usable geospatially enabled statistics 47

Appendices 53

1. The 14 Global Fundamental Geospatial Data Themes 53
2. The UN-IGIF 54
3. The GeoGSBPM 55
4. The GSGF Five Principles and Key Elements Matrix 57
5. Key Data Architecture and Metadata Standards for Interoperability 58
6. Definitions of Terms 60

Credits 65

GSGF 1st Edition

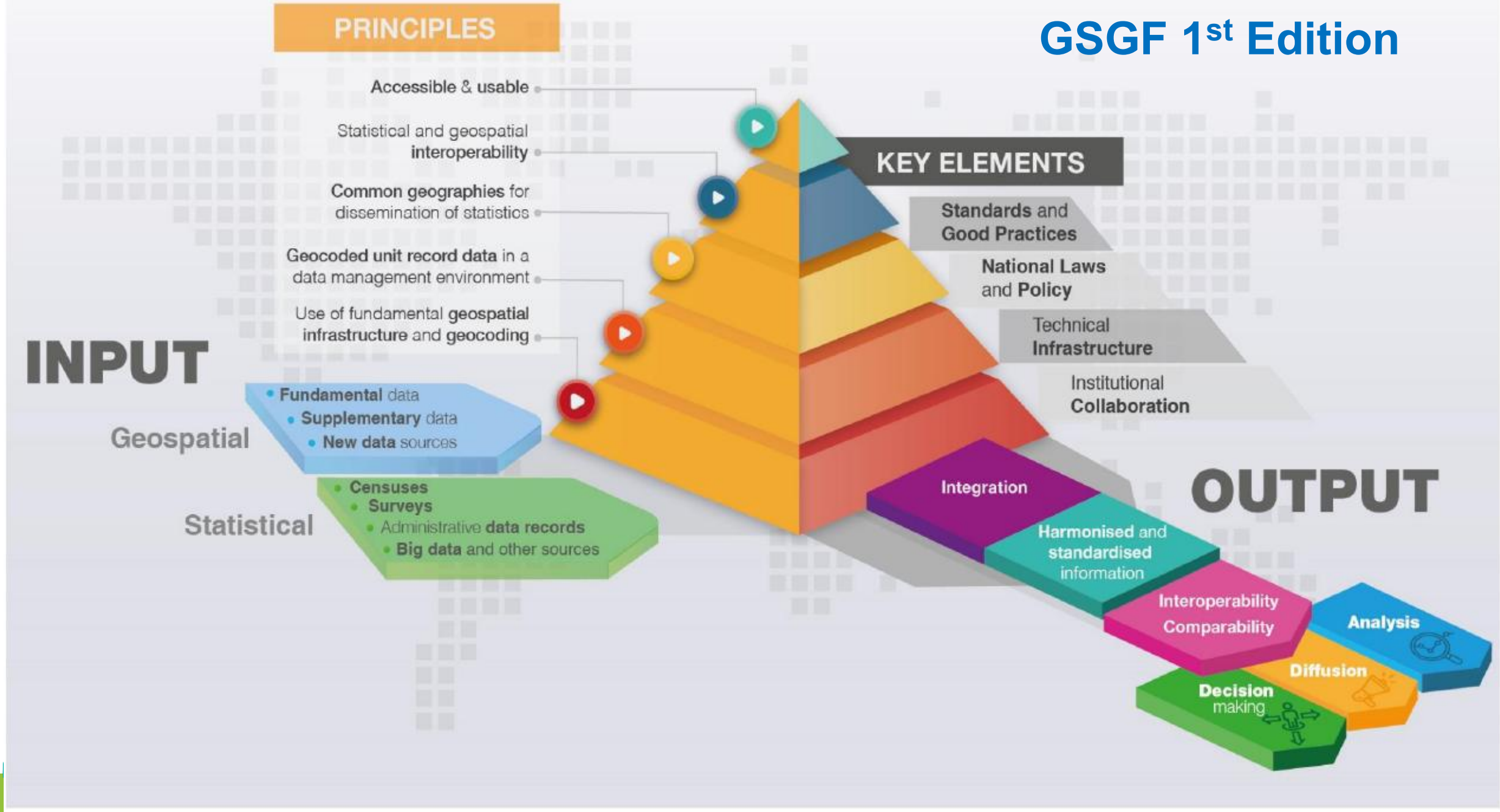
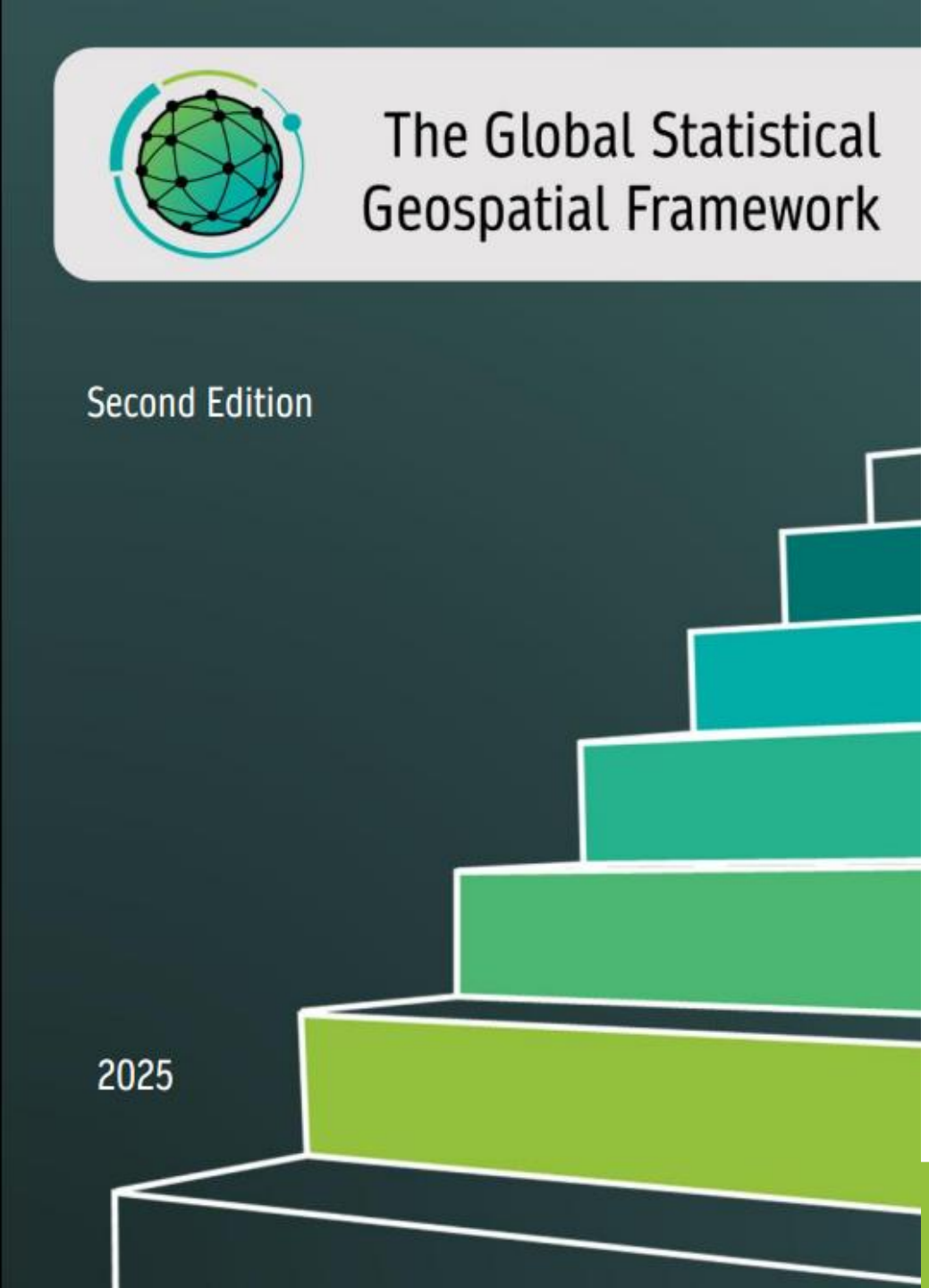


Figure 2 The Global Statistical Geospatial Framework – inputs through to outputs



What is new in GSGF 2nd Edition?

Visual identity development and enhancement of the publication's design and editorial quality.

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INPUT

Statistical

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

Geospatial

- Fundamental geo data themes
- Core national mapping
- Earth Observations
- Mobility Data
- Supplementary Data



PRINCIPLES

The GSGF

5 Accessible and usable

4 Statistical and geospatial Interoperability

3 Common Geographies

2 Geocoded unit record data

1 Use of fundamental geospatial infrastructure and geocoding

The key elements



Governance and Institutional capacity | Policy and Legal | Human Resources and Capacity | Data and Interoperability | Technology and Infrastructure

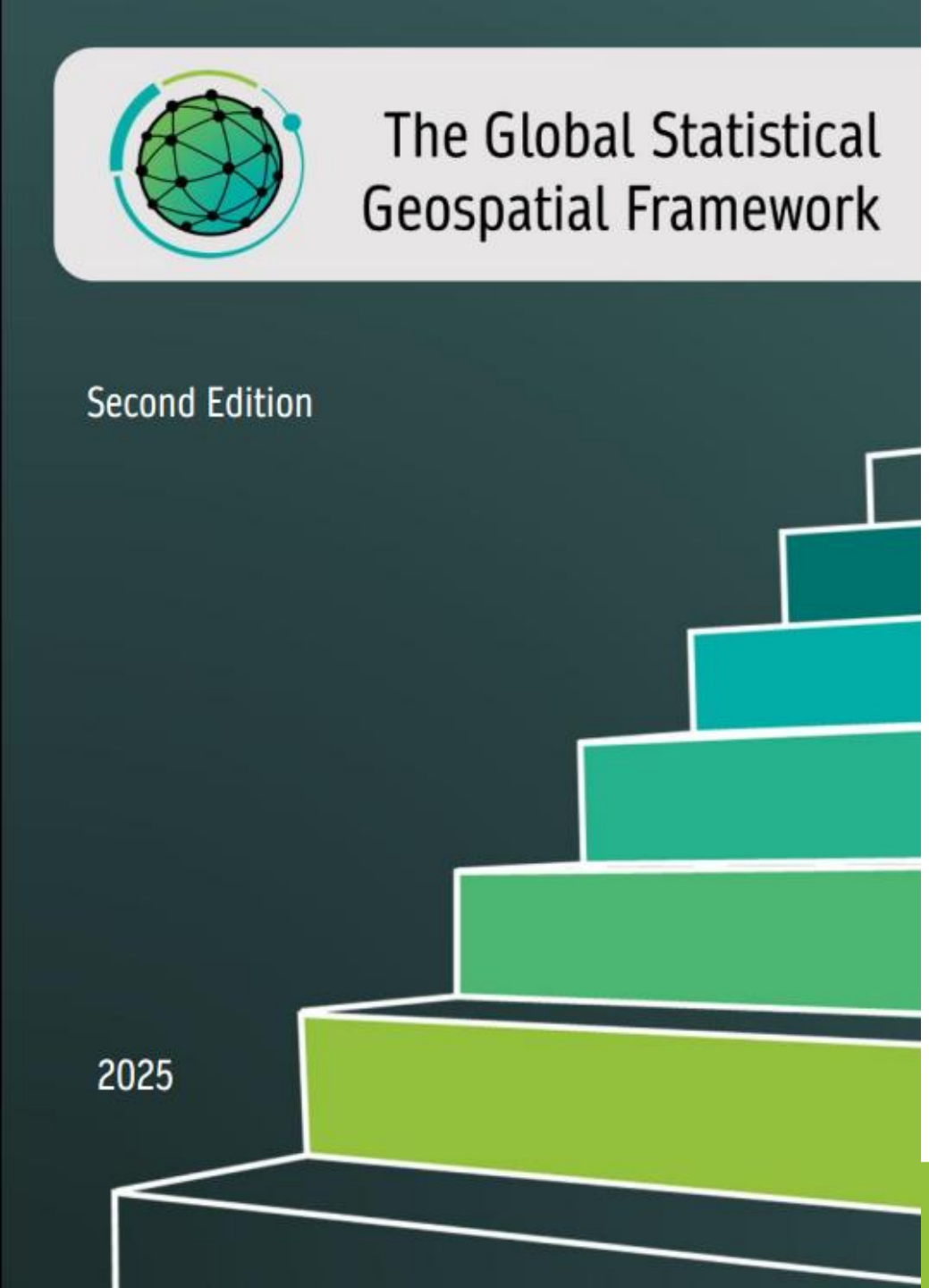
UN-IGIF

OUTPUT

- Data integration
- Data harmonisation
- Data comparability
- Analysis
- Dissemination
- Decision Making

GSBPM

Source: UNGGIM, UNSD (2025)



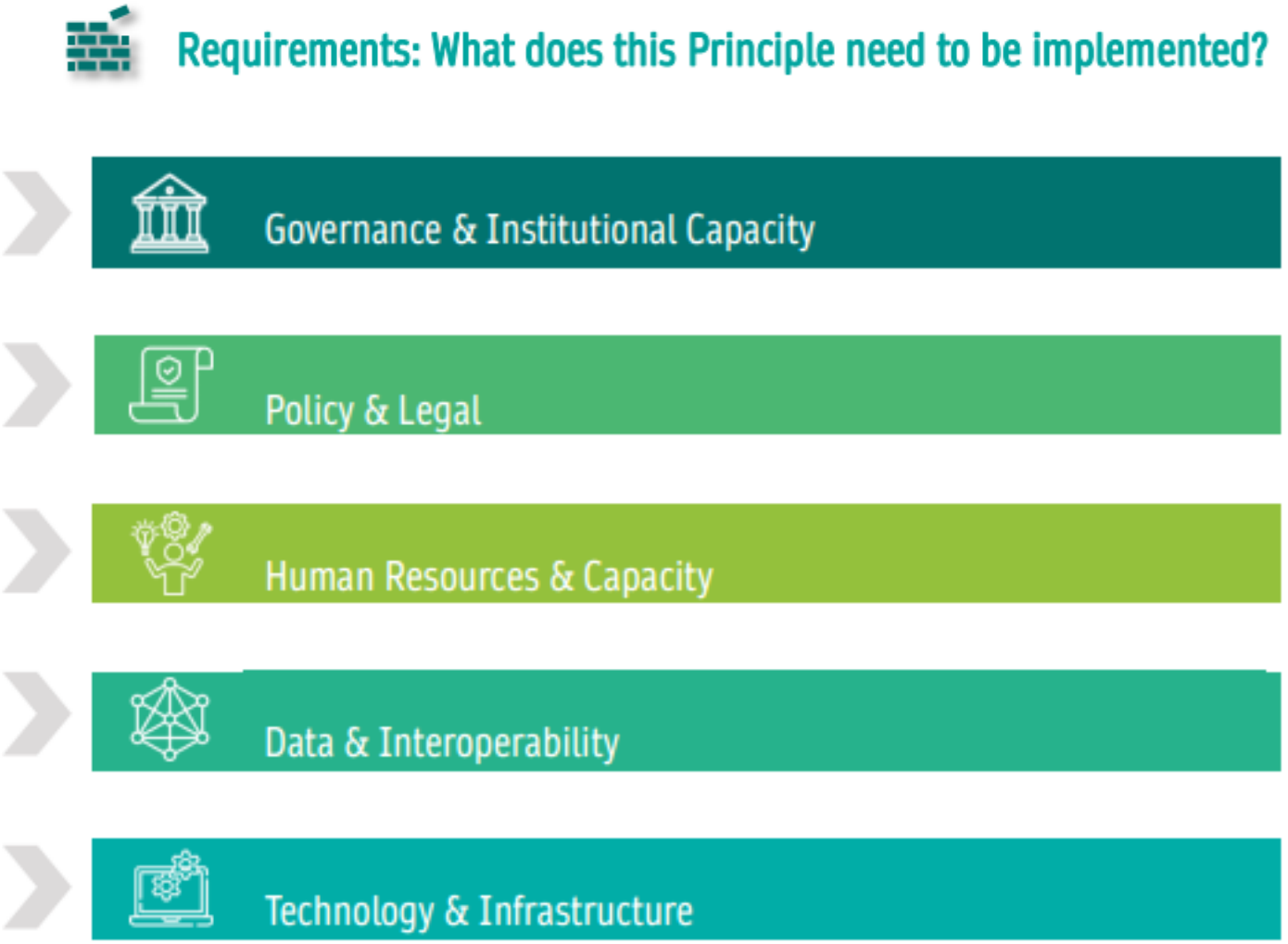
What is new in GSGF 2nd Edition?

Visual identity development and enhancement of the publication's design and editorial quality.

- Definition: What does this Principle cover?
- Objectives and Benefits: Why do we need this Principle?
- Key Stakeholders: Who needs to be involved?
- Requirements: What does this Principle need to be implemented?

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Alignment with the United Nations Integrated Geospatial Information Framework (UN-IGIF)



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Implementing Principle 1 will bring the following benefits[14]:

Strategic Benefits	Benefits for NSOs
• Greater stakeholder collaboration at national level, leveraging national fundamental data provision and the adoption of standardized data themes. • Reduction in the risk of duplication in the production of core fundamental geospatial datasets at the national level, thus driving efficiencies. • Diverse inputs into national geospatial information requirements, which are responsive to policy making across environmental, societal, and economic domains. • Greater data interoperability and integration between geospatial stakeholders, following agreed national frameworks.	• Maintained national lifecycle information of geospatial features for consistent linking of statistics and geographic location information. • Enhanced reproducibility and quality of statistical results. • Enabled provision of new geospatial information sources for measuring and monitoring targets and indicators, such as the SDGs. • Reduction in the resources needed to conduct censuses and surveys by providing the location information needed for address frames and enumeration areas.

GSGF 2nd Edition

Appendices **53**

1. The 14 Global Fundamental Geospatial Data Themes 53
2. The UN-IGIF 54
3. The GeoGSBPM 55
4. The GSGF Five Principles and Key Elements Matrix 57
5. Key Data Architecture and Metadata Standards for Interoperability 58
6. Definitions of Terms 60



GSGF – Principle 1 - Use of fundamental geospatial infrastructure and geocoding

Principle 1 focuses on the creation of **geospatial infrastructure** which supports the accurate **assignment of location information to data records** at the national level, bringing together relevant stakeholders and partners to ensure the development of a high-quality and consistent national **location referencing framework** (such as a physical address, property or building identifiers or other location descriptions).

GSGF – Principle 1 - Use of fundamental geospatial infrastructure and geocoding



National Spatial Data Infrastructure (NSDI)

National Spatial Data Infrastructure is the framework, technology, policies, standards, good practices, and human resources necessary to acquire, process, store, distribute, and improve utilization of geospatial data.

GSGF – Principle 1 - Use of fundamental geospatial infrastructure and geocoding

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



GSGF – Principle 1 - Use of fundamental geospatial infrastructure and geocoding



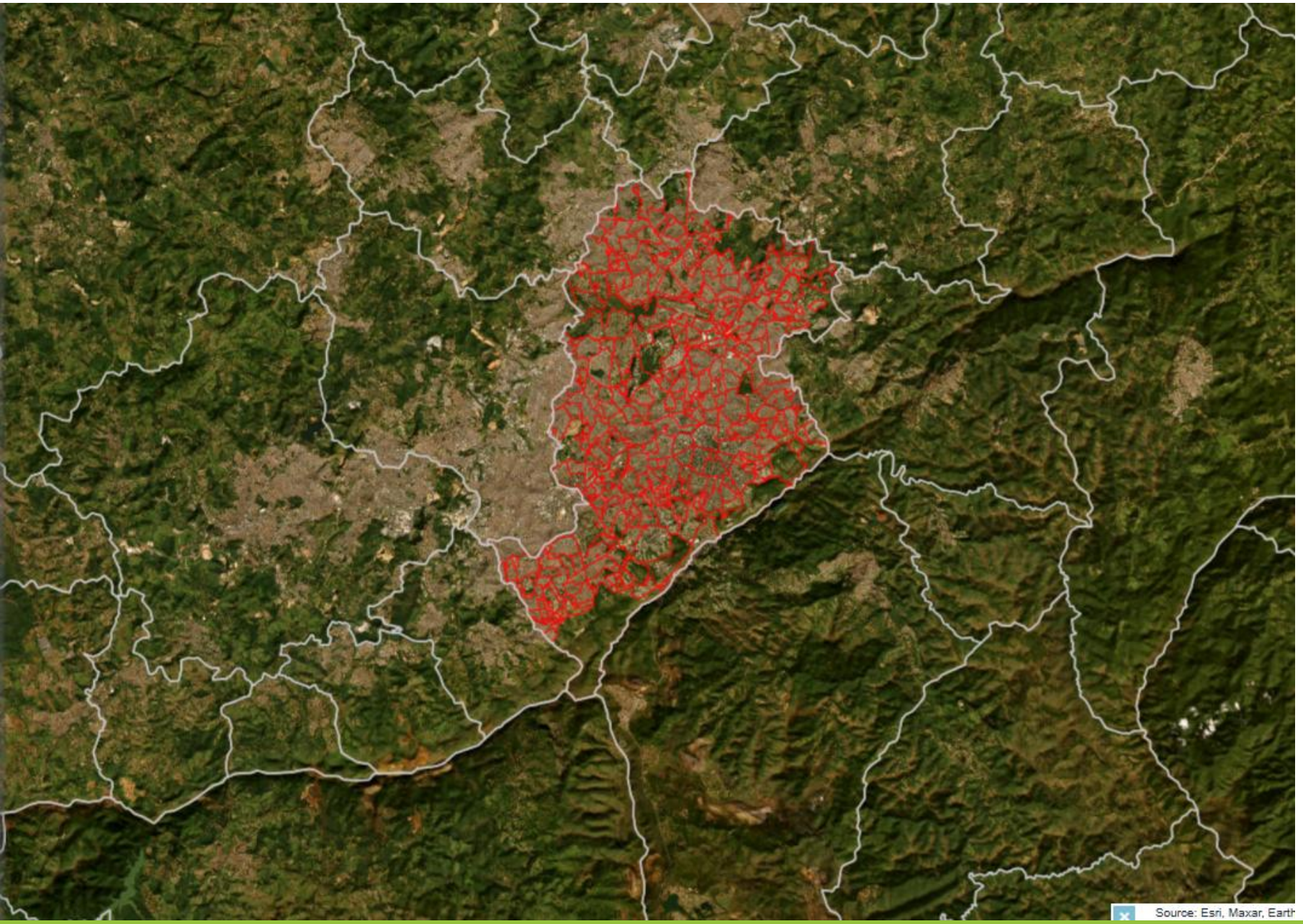
City of Uberlândia, Brazil – Street network map



Transport Networks

Source: IBGE, Brazil.

GSGF – Principle 1 - Use of fundamental geospatial infrastructure and geocoding

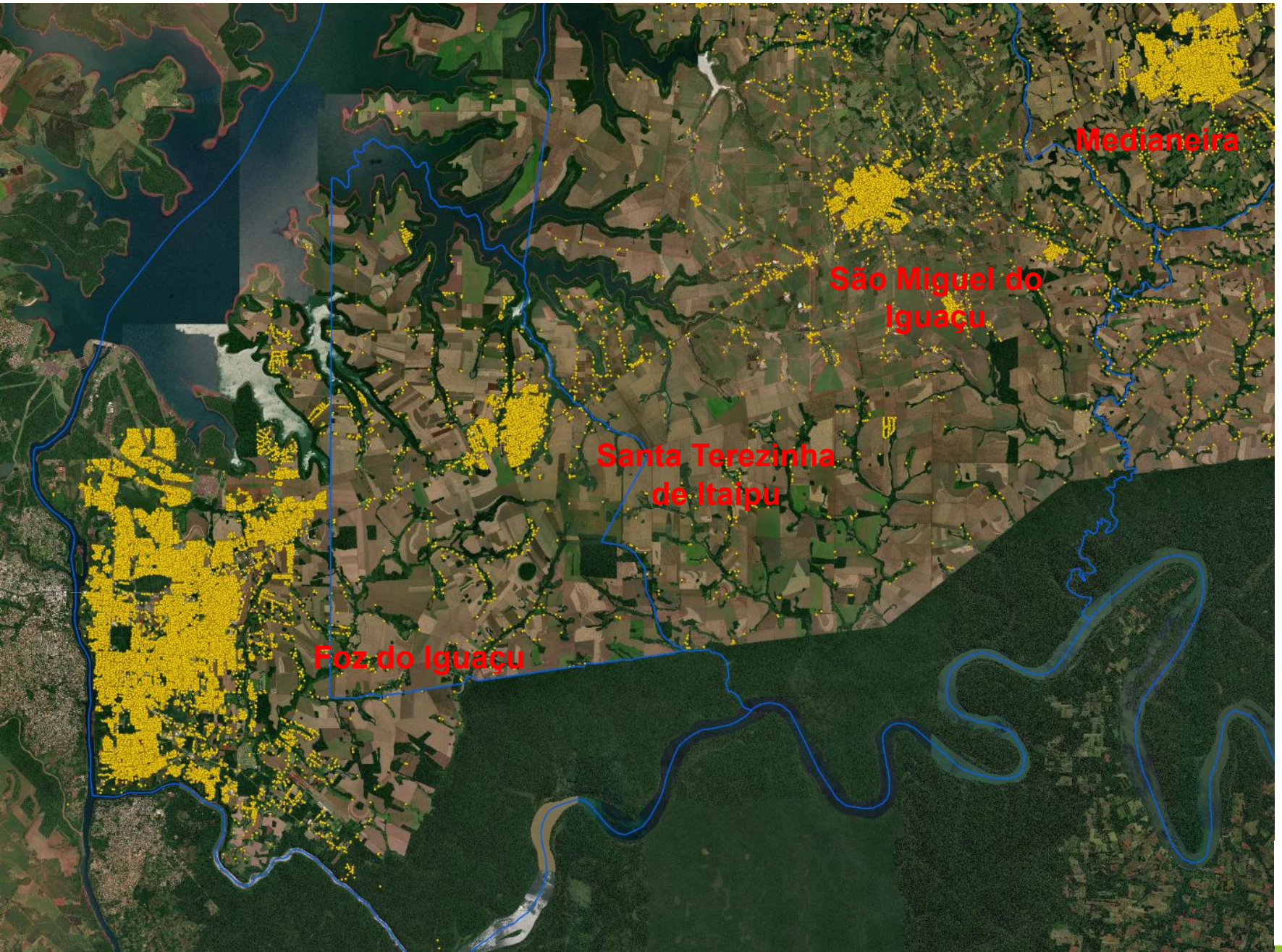


Municipal boundaries of Belo Horizonte and adjacent municipalities. Neighbourhood boundaries of Belo Horizonte.

Functional Areas

Source: IBGE, Brazil.

GSGF – Principle 1 - Use of fundamental geospatial infrastructure and geocoding

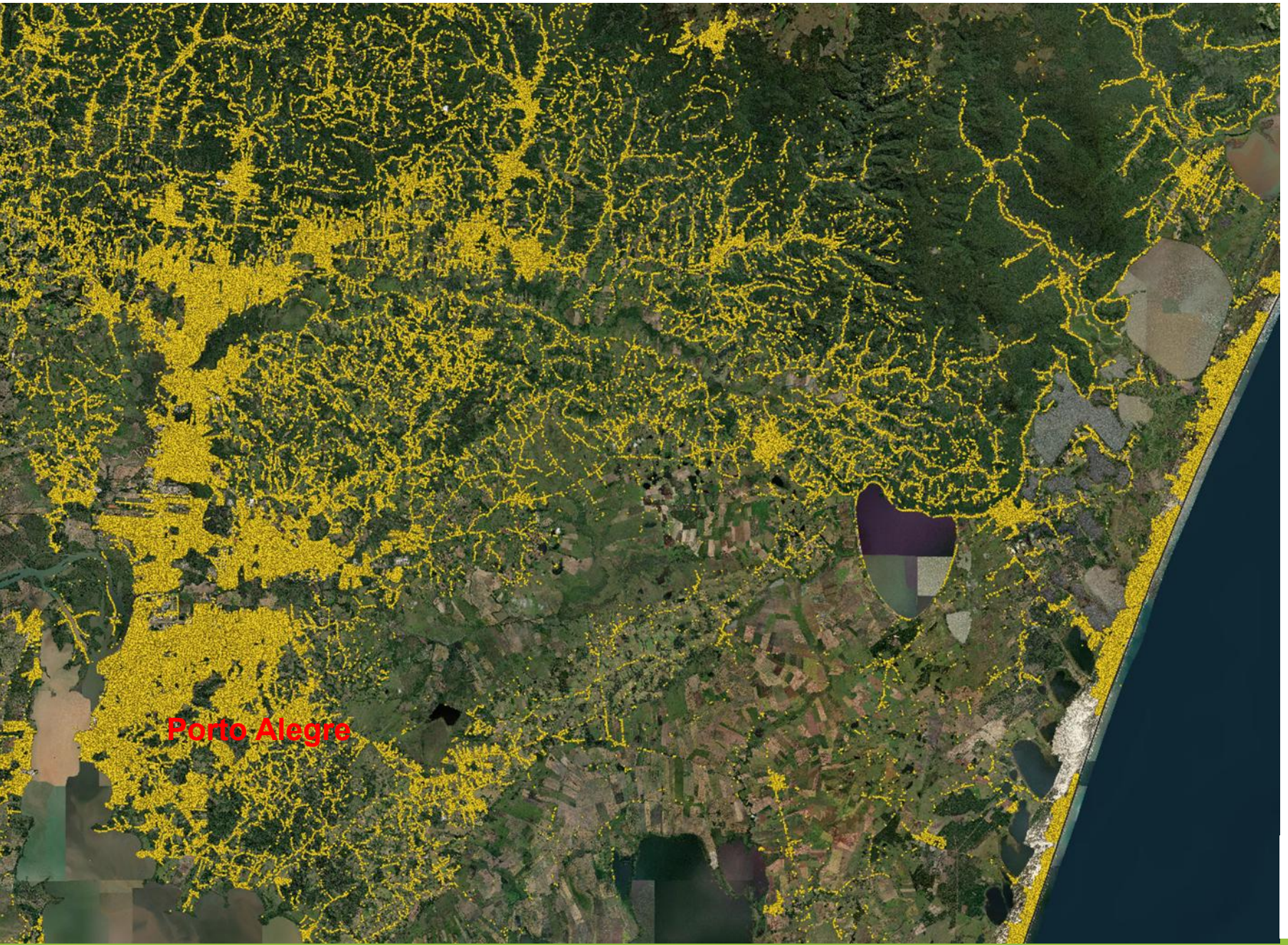


Distribution of households in Foz do Iguaçu and surrounding areas, Brazil. It is possible to observe the urban concentration in Foz do Iguaçu and other cities along the highway, as well as the rural population spread throughout properties in the river valleys. Also notable are the Iguaçu National Park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



Source: IBGE, Brazil.

GSGF – Principle 1 - Use of fundamental geospatial infrastructure and geocoding



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.



Addresses

Source: IBGE, Brazil.

GSGF – Principle 1 - Use of fundamental geospatial infrastructure and geocoding



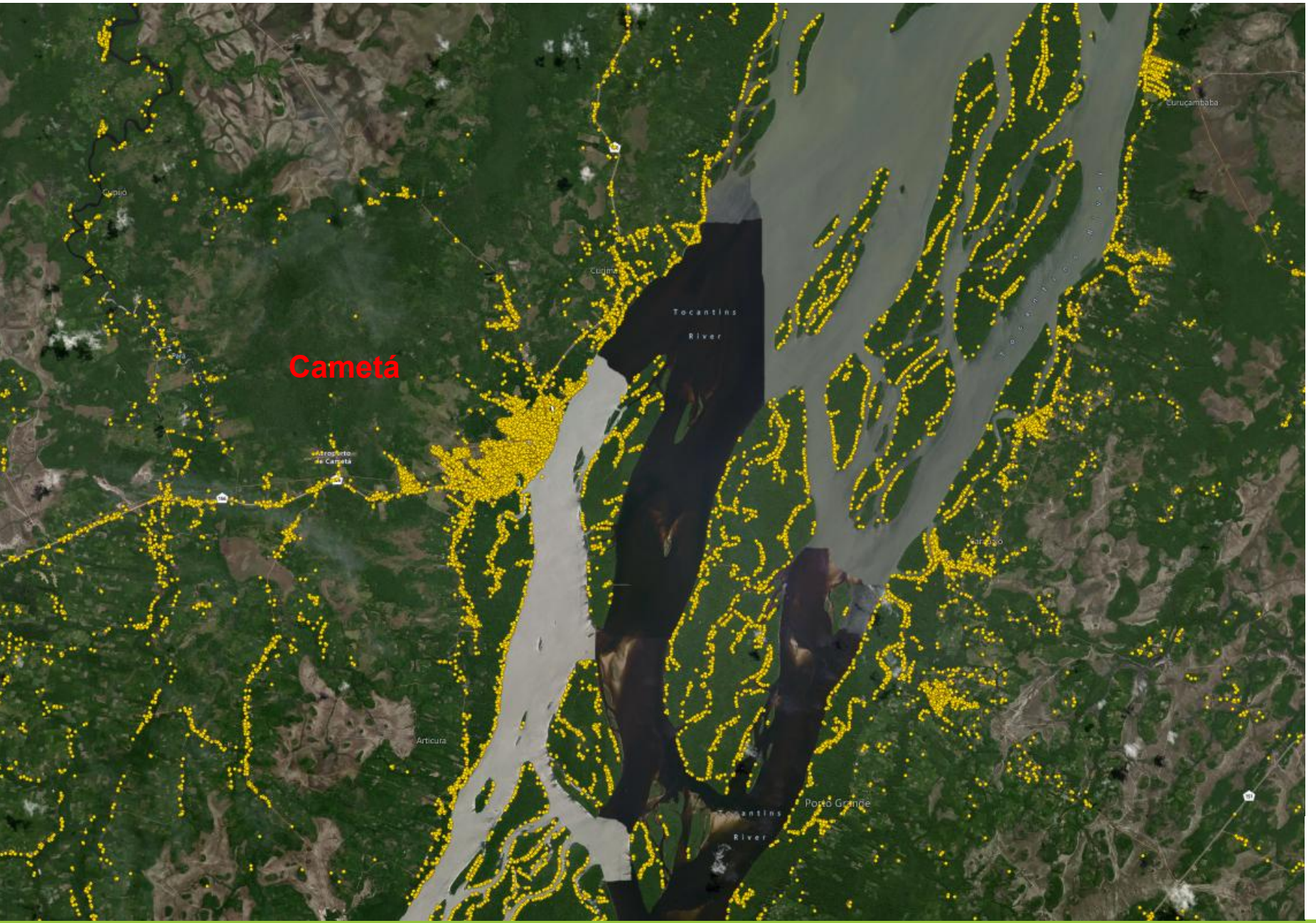
Distribution of households in Luís Eduardo Magalhães and surrounding areas, Brazil. This area is a large-scale soybean producer, on large mechanized properties. The rural population density is very low. On the other side of the escarpment, the density of rural occupation is significantly higher.



Addresses

Source: IBGE, Brazil.

GSGF – Principle 1 - Use of fundamental geospatial infrastructure and geocoding



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



Addresses

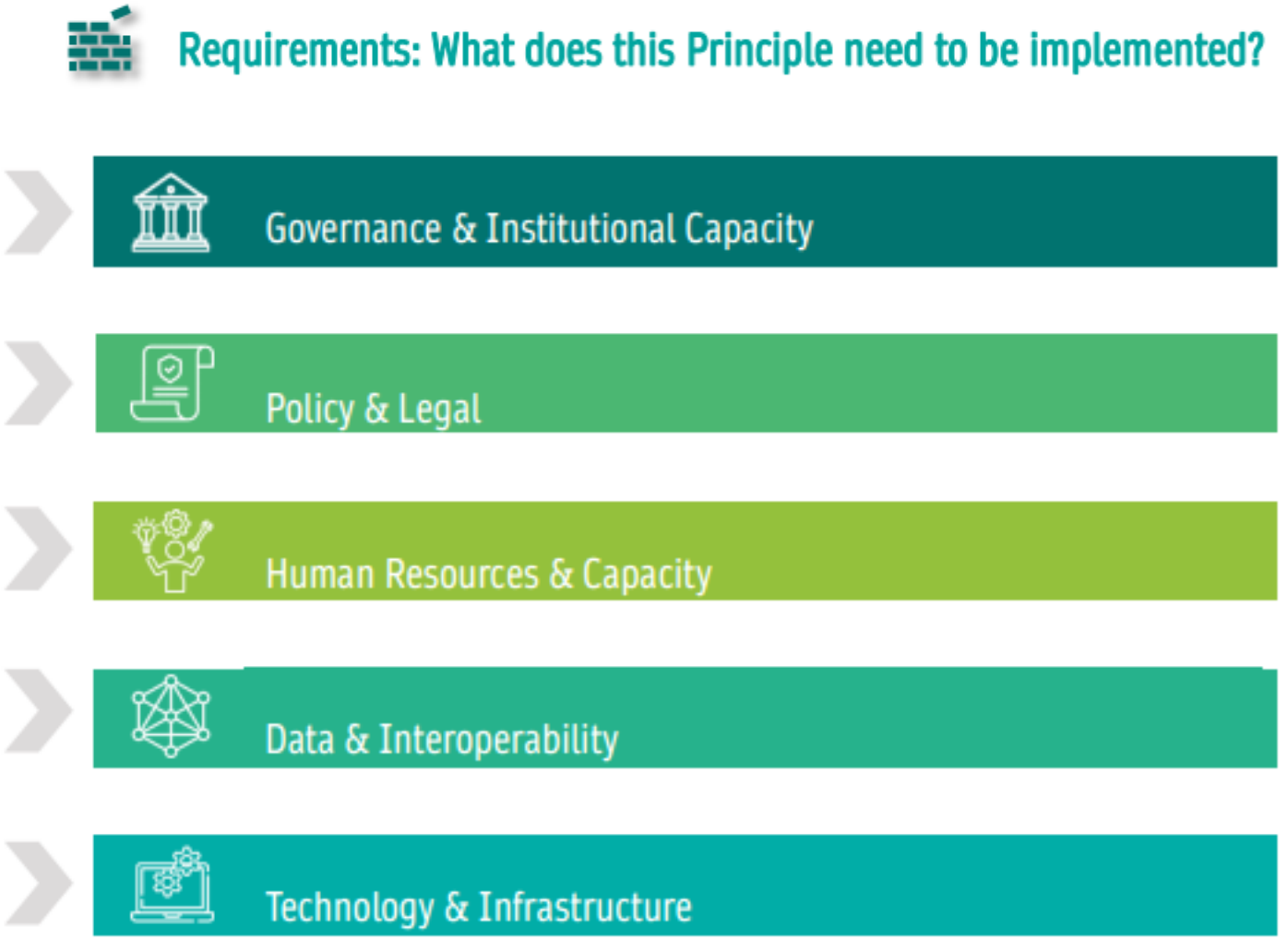
Source: IBGE, Brazil.

GSGF – Principle 1 - Use of fundamental geospatial infrastructure and geocoding



Key Stakeholders: Who needs to be involved?

GSGF – Principle 1 - Use of fundamental geospatial infrastructure and geocoding



Final Comments

The second edition of the Global Statistical Geospatial Framework (GSGF):

- Maintains the core principles of the Framework;
- Provides significant improvements in usability;
- Enhances the graphic design and editorial quality;
- Strengthens alignment with the United Nations Integrated Geospatial Information Framework (UN-IGIF);
- Improves integration with the Generic Statistical Business Process Model (GSBPM).



Final Comments

Principle 1 of the Global Statistical Geospatial Framework (GSGF):

- Represents the geospatial infrastructure that enables subsequent integration with statistical information;
- Requires a robust National Spatial Data Infrastructure (NSDI) for its effective implementation;
- Relies on the Global Fundamental Geospatial Data Themes as key reference to populate Spatial Data Infrastructures;
- Recognizes addresses as a critical data infrastructure for enabling geostatistical integration and the integration of statistics with administrative records;
- Requires the development of geospatial capabilities within National Statistical Offices (NSOs);
- Depends on strong coordination between NSOs, National Geospatial Information Agencies (NGIAs), and other geospatial information producers.

Thank you very much!
¡Muchas gracias!

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