

# Agenda Item 8: Sustaining the Global Statistical Geospatial Framework: Towards GSGF 2.0

Eighth meeting of the UN EG-ISGI and the seventh meeting of the WGGI IAEG-SDGs

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17 – 19 September 2024

# Goals for the session

- Introduce updated GSGF
- Gain consent to finalize and submit to Statistical Commission in 2025
- Invite additional input and editors
- Questions – we'll ask at the end

# Global Statistical Geospatial Framework (GSGF)

## Goals and Objectives

- Identify best practices and current standards
- Promoting investment and capability building in geospatial and statistical information
- Enable harmonised comparisons within and between countries
- Strengthening institutional collaboration between geospatial and statistical communities





## PAGE TREE

## ▾ Introduction to the GSGF

- How to use the GSGF
- List of Abbreviations
- Preamble

## ▾ Part 1: The Global Statistical Geospatial Framework

- Principle 1: Use of fundamental geospatial infrastructure and geocoding
- Principle 2: Geocoded unit record data in a data management environment
- Principle 3: Common geographies for dissemination of statistics
- Principle 4: Statistical and geospatial interoperability
- Principle 5: Accessible and usable geospatially enabled statistics
- Complementary Initiatives
- Call to Action and the Way Forward

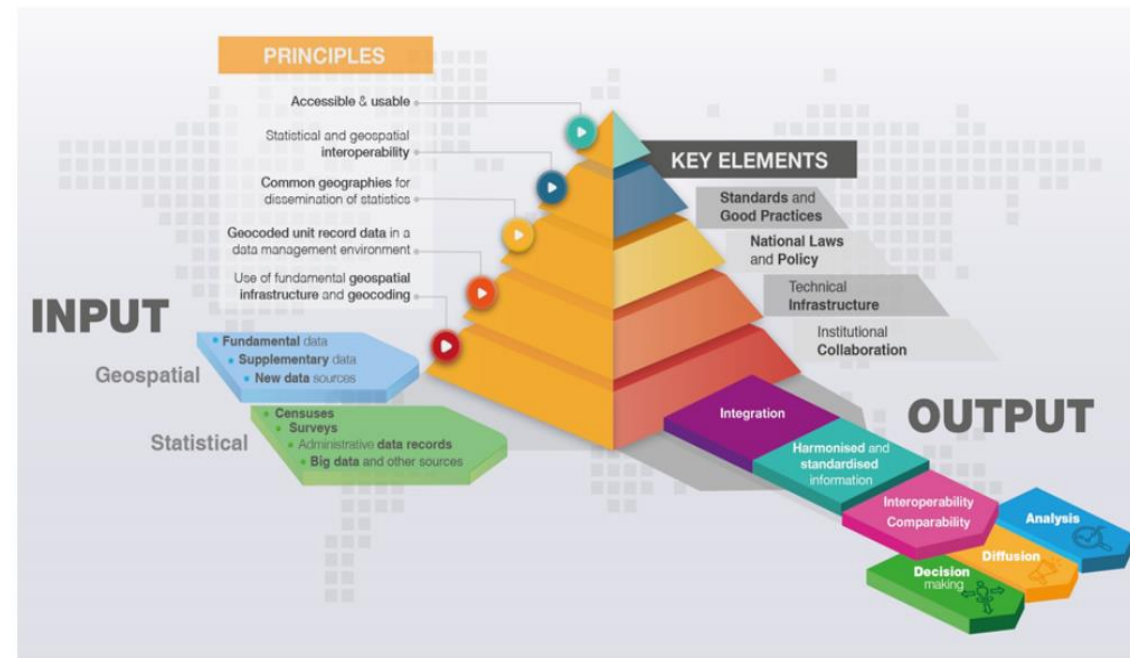
## ▾ Part 2: Elaborating in detail the Global Statistical Geospatial Framework

- Principle 1
- Principle 2
- Principle 3
- Principle 4
- Principle 5

## ▸ Annexes

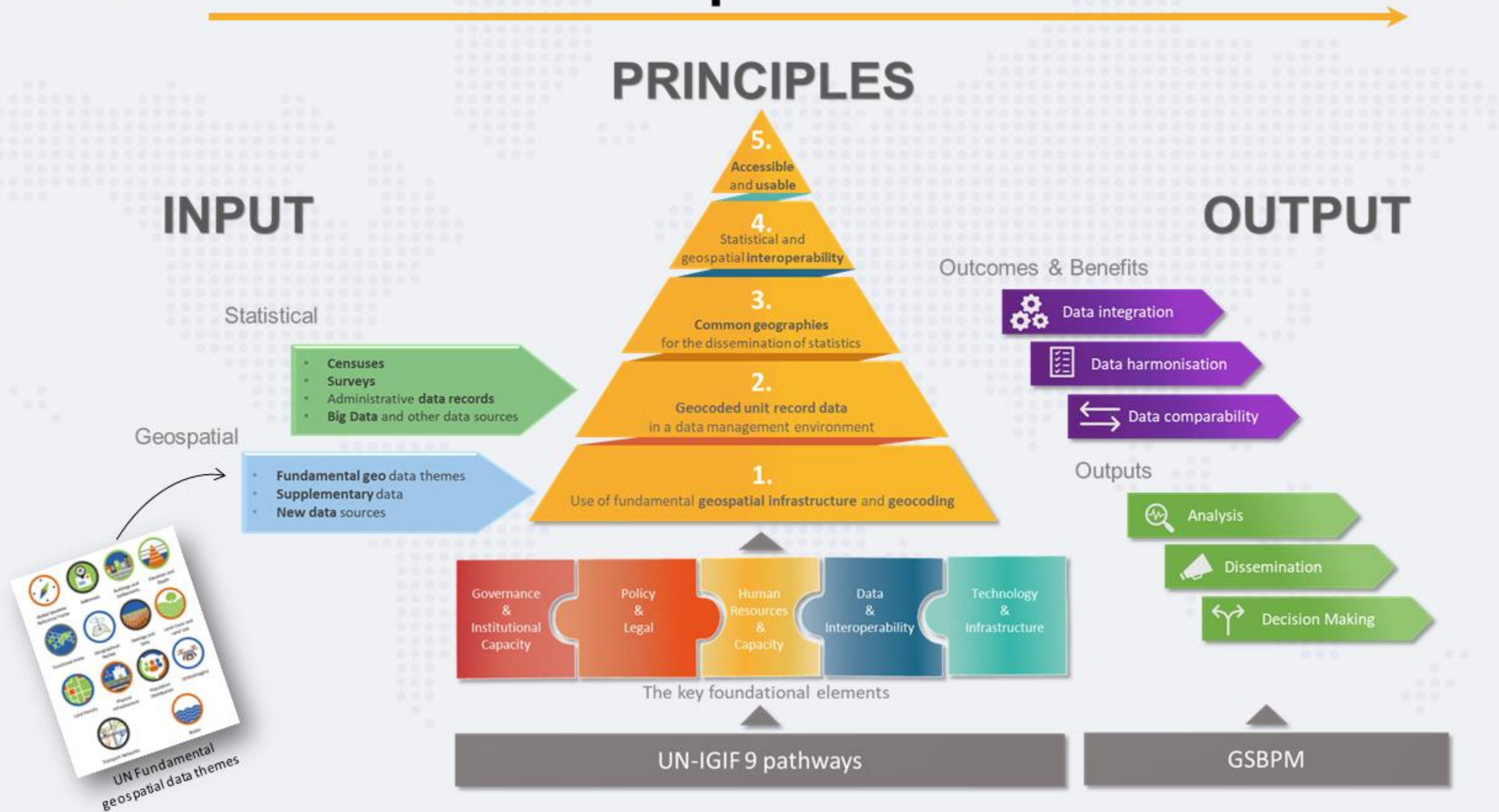
# Global Statistical Geospatial Framework

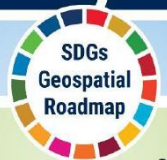
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The Global Statistical Geospatial Framework (GSGF) facilitates the integration of statistical and geospatial information. A Framework for the world, the GSGF enables a range of data to be integrated from both statistical and geospatial communities and, through the application of its five Principles and supporting key elements, permits the production of harmonised and standardised geospatially enabled statistical data. The resulting data can then be integrated with statistical, geospatial, and other information to inform and facilitate data-driven and evidence-based decision making to support local, sub-national, national, regional, and global development priorities and agendas, such as the 2020 Round of Population and Housing Censuses and the 2030 Agenda for

# The Global Statistical Geospatial Framework



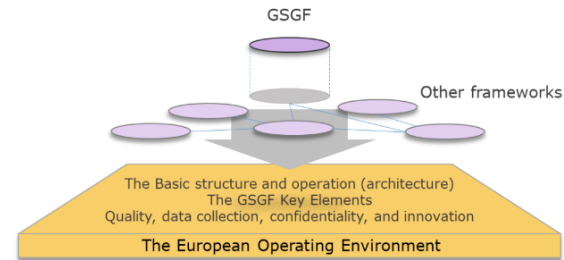


Europe

- Executive Summary
- List of Abbreviations
- Introduction
- The Global Statistical and Geospatial Framework

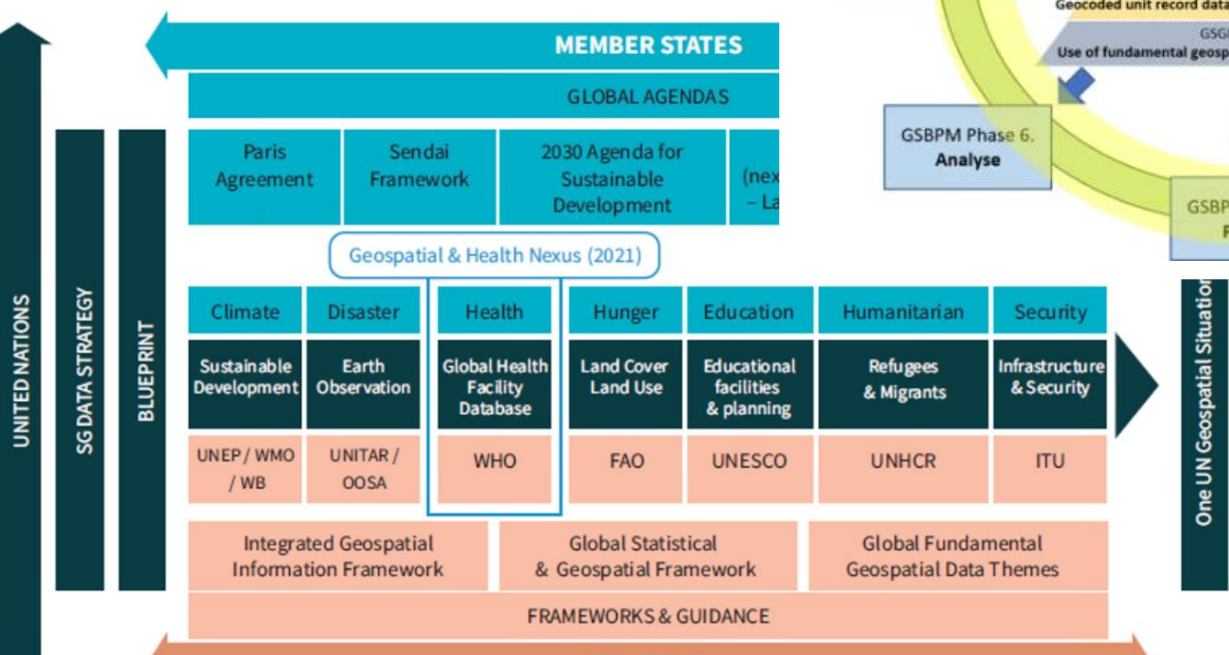
The GSGF within the European Operating Environment

The five GSGF principles link to, and are implemented in, many levels within the European statistical and geospatial operating environment. In this study, we have examined the structure and operation of the statistical geospatial community, the interpretation of the GSGF's key elements and four different aspects that were identified as essential for further study in the European context. These four aspects are quality, data collection, confidentiality and innovation. Furthermore, several integration, standardisation and data-sharing frameworks are applied for the purposes of statistical and geospatial domains in Europe. The most relevant frameworks and their links to the GSGF are studied in Chapter 6. All these aspects together are used to describe and analyse the European operating environment in this document (Figure 5).



GSGF to the Operating Environment and other applied frameworks in Europe.

High-level Architecture and

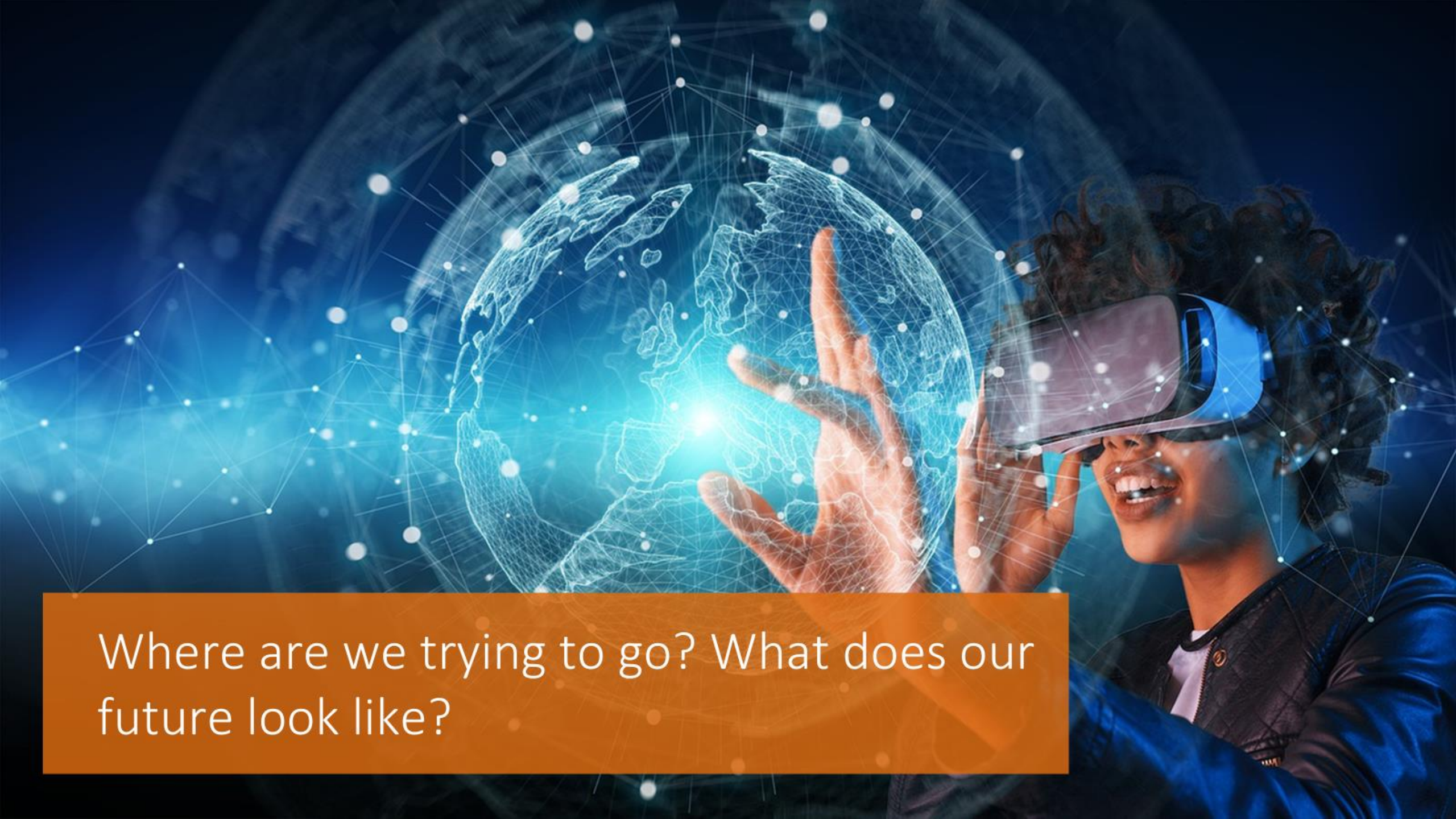


The Global Statistical and Geospatial Framework (GSGF) e-Learning Tools

The Global Statistical and Geospatial Framework (GSGF) e-Learning courses in Spanish and English have been developed by the leaders of the Central American project in collaboration with We Love Learning.

These e-Learning courses have been made possible thanks to funding by the Pan American Institute of Geography and History and the tremendous efforts and work of the Expert Group on the Integration of Statistical and Geospatial Information and their development of the GSGF, and is a result of the commitment, collaboration, and work





Where are we trying to go? What does our future look like?

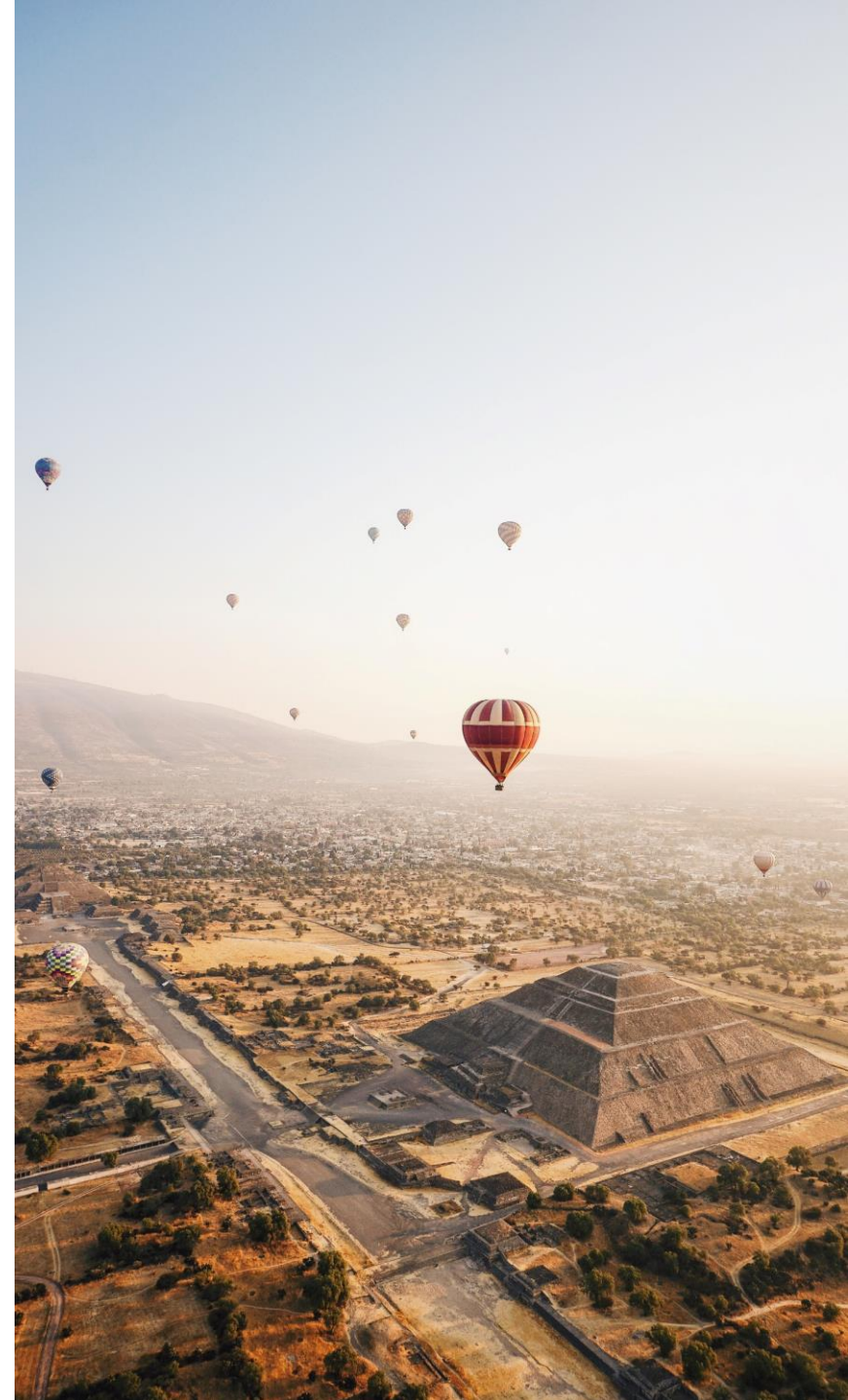


GSGF 2.0

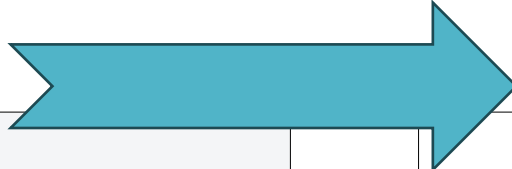


# Summary of Changes

- Reorganized for clarity and ease of navigation
- Consolidated sections
- Updated layout to prioritize accessibility
- Additional “deep dive” topics
- Graphics



# GSGF 1.0



# GSGF 2.0

- ▼ Introduction to the GSGF
  - How to use the GSGF
  - List of Abbreviations
  - Preamble
- ▼ Part 1: The Global Statistical Geospatial Framework
  - Principle 1: Use of fundamental geospatial infrastructure and geocoding
  - Principle 2: Geocoded unit record data in a data management environment
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  - Call to Action and the Way Forward
- ▼ Part 2: Elaborating in detail the Global Statistical Geospatial Framework
  - Principle 1
  - Principle 2
  - Principle 3
  - Principle 4
  - Principle 5
- › Annexes

List of Abbreviations	6
Table of Contents	8
New Proposed Exec Summary	1
<b>The Global Statistical Geospatial Framework</b>	<b>1</b>
Executive Summary (prev. version)	3
Introduction	6
Part 1: The Global Statistical Geospatial Framework	12
Stage 1: GSGF Inputs	13
Stage 2: The Key elements	14
Stage 3: The Five Principles of the GSGF	16
Stage 4: GSGF Outputs	18
Other Complementary Initiatives and Frameworks	19
Part 2: The five GSGF Principles	23
Principle 1: Use of fundamental geospatial infrastructure and geocoding	24
Definition: What does Principle 1 cover?	24
Objectives & Benefits: Why do we need Principle 1?	25
Key Stakeholders: Who needs to be involved in Principle 1?	26
Requirements: What does Principle 1 need for implementation?	26
Dependencies and Relationships to other Principles	28
Links and Resources	28
Principle 2: Geocoded unit record data in a data management environment	30
Definition: What does Principle 2 cover?	30
Objectives & Benefits: Why do we need Principle 2?	31
Key Stakeholders: Who needs to be involved in Principle 2?	32
Requirements: What does Principle 2 need for implementation?	33
Dependencies and Relationships to other Principles	33
Links and Resources	34
Principle 3: Common geographies for dissemination of statistics	36
Definition: What does Principle 3 cover?	36
Objectives & Benefits: Why do we need Principle 3?	37

## Executive Summary

The Global Statistical Geospatial Framework (GSGF) facilitates the integration of statistical and geospatial information. A Framework for the world, the GSGF enables a range of data to be integrated from both statistical and geospatial communities and, through the application of its five Principles and supporting key elements, permits the production of harmonised and standardised geospatially enabled statistical data. The resulting data can then be integrated with statistical, geospatial, and other information to inform and facilitate data-driven and evidence-based decision making to support local, sub-national, national, regional, and global development priorities and agendas, such as the 2020 Round of Population and Housing Censuses and the 2030 Agenda for Sustainable Development.

*“There is an urgent need for a mechanism, such as a global statistical-spatial framework, to facilitate consistent production and integration approaches for geo-statistical information.”*

*The Global Forum on the Integration of Statistical and Geospatial Information, New York 2014*

This paper presents information that will support countries and users to understand the GSGF — its value, application, infrastructure and implementation requirements. This is achieved through an overview of the GSGF, along with an elaboration of its five Principles and other key elements. Further information to support implementation is being compiled in the wiki of the Expert Group on the Integration of Statistical and Geospatial Information. The GSGF has been developed through a collaborative process, engaging statistical and geospatial information agencies globally.

*“... develop the Global Statistical Geospatial Framework as a common method for geospatially enabling statistical and administrative data to ensure that data from a range of sources can be integrated based on location and can be integrated with other geospatial information.”*

*United Nations Committee of Experts on Global Geospatial Information Management, New York 2015*

Fundamentally, the GSGF enables:

- Integration of data to support the measuring and monitoring of the targets and global indicator framework for the Sustainable Development Goals of the 2030 Agenda for Sustainable Development and the 2020 Round of Population and Housing Censuses;
- Comparisons at local, sub-national, national, regional, and global levels for decision-making processes within and between countries and thematic domains;
- Data sharing between institutions, through interoperability of geospatial and statistical information and the development of common tools and applications;
- Unlocking of new insights and data relationships that would not have been possible by analysing socio-economic, environmental, or geospatial data in isolation;
- Increased information on smaller geographical areas;
- Increased awareness of methods and tools to assess and manage disclosure risks and to enhance privacy in collection, storage, and dissemination of information;
- Conditions for investment and capability building in geospatial and statistical information;
- Integration of new sources of data to inform the production of high-quality geospatial information, for example Earth observations and other complementary data sources; and
- Strengthening of institutional collaboration between the geospatial and statistical communities.

## The Global Statistical Geospatial Framework

We live in a data rich world, with ever faster evolving technology fuelled by a growing appetite for data insight. With the increase of the availability of highly accurate data both in terms of timescale (real-time data) and geographical location (granularity), managing and integrating data can be difficult.

National Statistics Offices now rely heavily on administrative, geospatial and other non-statistical data to produce statistical outputs and coupled with the growing need for localised information, the importance of integrating statistical data with geospatial data has never been so critical.



**Geospatial data** is information which describes objects, events or other features and their location on earth. This can include addresses and geographical areas, foundational base mapping (e.g., from national mapping agencies), environmental data and increasingly, earth observations and sensor data such as mobile phone data.

### What is the GSGF?

The Global Statistical Geospatial Framework (GSGF) is the United Nations' high-level framework providing guidance to National Statistical Offices across the globe on the use of geospatial data for the purpose of enhancing statistical production.

It aims to bring together the geospatial and statistical community, bridging the gap between the United Nations' Integrated Geospatial Information Framework<sup>1</sup> (IGIF) and the Generic Statistical Business Process Model<sup>2</sup> (GSBPM). It consists of the following principles to achieve a successful methodology for integration:



1. **Use of fundamental geospatial infrastructure and geocoding:** This recommends the importance of having an established national geospatial data infrastructure providing the *Global Fundamental Geospatial Data Themes*<sup>3</sup>. It enables the basis of a common and consistent approach to establishing the accurate location of each unit in a statistical dataset. For example, this could mean having an established geodetic reference frame enabling GPS use nationally, a national grid or coordinate system or, a standardised physical address register with property or building identifiers. This requires building formal working and collaborative relationships between the agencies responsible for producing these fundamental geospatial datasets at country level.
2. **Geocoded unit record data in a data management environment:** This supports the process of linking statistical data at unit records to a location such as geocoding and georeferencing with coordinates, small geographic area codes or linked-data identifiers within a secure data management environment. This will support data integration and further data linkage. For example, allocating a grid reference, or unique property or building identifiers from the address register to an address. This requires having an effective and secure data management environment in place, a centralised geospatial data store, data validation mechanisms and robust geocoding and geo-matching methodologies.
3. **Common geographies for dissemination of statistics:** This determines the definitions of geographic entities which allow for the aggregation/disaggregation and the dissemination of data. This allows for consistency and comparability of the integrated data outputs. It requires an established stack of national statistical and administrative geographies, defined geographical classifications (e.g., urban vs rural), defined national (and global) statistical grid systems.

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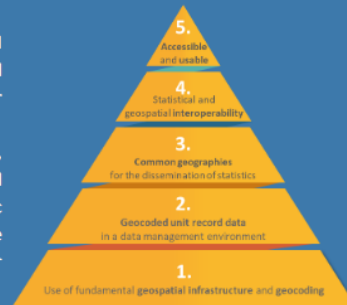


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# Enhancements

- Executive Summary
- Section Summaries
- Consolidation of topics

From foundation data to statistical outputs:

The GSGF bridging geospatial and statistical communities together

# UN-IGIF

FRAMEWORK FOR THE MANAGEMENT OF GEOSPATIAL INFORMATION.

# GSGF

TOOLS FOR THE INTEGRATION OF STATISTICAL AND GEOSPATIAL DATA.

# GSBPM

BUSINESS PROCESSES NEEDED TO PRODUCE OFFICIAL STATISTICS.

## MAIN AREAS OF INFLUENCE



GOVERNANCE



TECHNOLOGY



PEOPLE

## STRATEGIC PATHWAYS



## 5 principles of the GSGF

1. USE OF FUNDAMENTAL GEOSPATIAL INFRASTRUCTURE AND GEOCODING
2. GEOCODED UNIT RECORD DATA IN A DATA MANAGEMENT ENVIRONMENT
3. COMMON GEOGRAPHIES FOR DISSEMINATION OF STATISTICS
4. STATISTICAL AND GEOSPATIAL INTEROPERABILITY
5. ACCESSIBLE AND USABLE GEOSPATIAL ENABLED STATISTICS

## Outcomes

- DATA INTEGRATION
- DATA HARMONISATION & STANDARDISATION
- DATA COMPARABILITY

1. SPECIFY NEEDS

2. DESIGN

3. BUILD

4. COLLECT

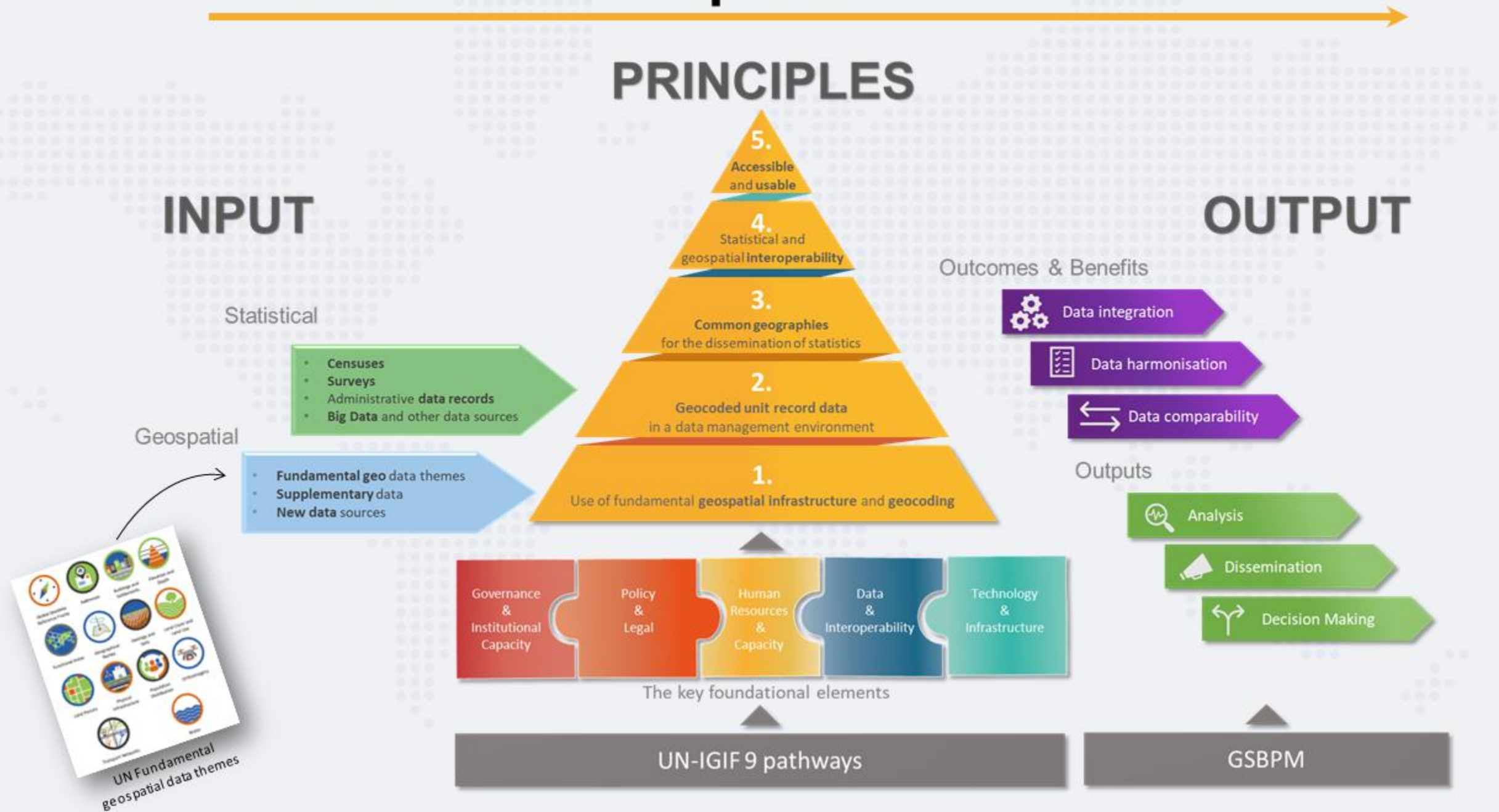
5. PROCESS

6. ANALYSE

7. DISSEMINATE

8. EVALUATE

# The Global Statistical Geospatial Framework



# Discussion 1 – GSGF Strategic directions

- Overall assessment and alignment with the GSGF assessment tool.
- GSGF linkages to existing frameworks (GSBPM – IGIF – GSIM)

2030 AGENDA FOR SUSTAINABLE DEVELOPMENT

INTEGRATED GEOSPATIAL INFORMATION FRAMEWORK (IGIF)



Sendai Framework for Disaster Risk Reduction 2015-2030

Paris Agreement on Climate Change

Strategic Framework on Geospatial Information and Services for Disasters

Global Statistical Geospatial Framework (GSGF)

Framework for Effective Land Administration (FELA)

SAMOA Pathway for SIDS  
Addis Ababa Action Agenda  
Habitat III New Urban Agenda  
Our Ocean, Our Future: Call for Action

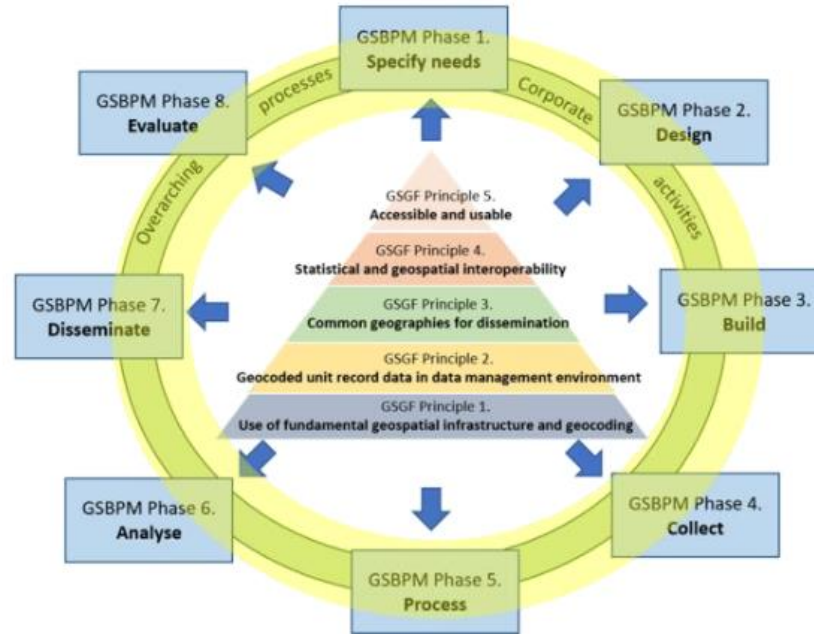
Global Fundamental Geospatial Data Themes  
Global Geodetic Reference Frame (GGRF)  
National Institutional Arrangements  
Role of Standards  
Compendium on Geospatial Information  
Statement of Shared Guiding Principles



UN-GGIM

United Nations Committee of Experts on Global Geospatial Information Management

High-level Architecture and



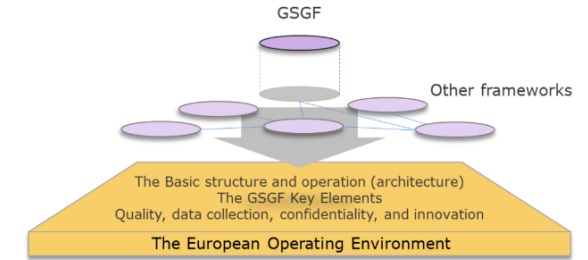
The GSGF within the European Operating Environment

Executive Summary

List of Abbreviations

Introduction

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GSGF to the Operating Environment and other applied frameworks in Europe.



COMISIONES PROGRAMAS DOCUMENTOS ALIANZAS PRENSA GALERIAS

UNITED NATIONS

SG DATA STRATEGY

BLUEPRINT

Climate	Disaster	Health	Hunger	Education	Humanitarian	Security
Sustainable Development	Earth Observation	Global Health Facility Database	Land Cover Land Use	Educational facilities & planning	Refugees & Migrants	Infrastructure & Security
UNEP / WMO / WB	UNITAR / OOSA	WHO	FAO	UNESCO	UNHCR	ITU

Integrated Geospatial Information Framework

Global Statistical & Geospatial Framework

Global Fundamental Geospatial Data Themes

FRAMEWORKS & GUIDANCE

UN-GGIM

One UN Geospatial Situation

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# Potential Future Directions

- Implementation Guide
- Case Studies
- Best Practices Compendium
- Use Cases
- Communications – creating web resources

Define the topic

Identify relevant Principles of the GSGF

Establish the value - why is this important?

How can this be implemented?

Case Studies

Further References

# Discussion – Pros/Cons for Future Directions in the doc or in a separate doc

## Pro

- Convenient - all in one place
- All the guidance and references are consolidated
- In line with GSGF 1.0

## Con

- Constrains the stability of GSGF
- Translations are more difficult
- Some topics are more appropriate in the Implementation Guide

# Implementation Guide.....?

## Table of Contents

Introduction.....	7	Chile.....	52
List of Abbreviations.....	9	Colombia.....	57
Table of Contents.....	10	Costa Rica.....	62
Implementing Geocoding.....	12	Cuba.....	65
Relevant Principles of the Global Statistical Geospatial Framework.....	12	Dominican Republic.....	67
What is Geocoding?.....	12	Ecuador.....	70
Why is Geocoding needed?.....	12	Egypt.....	74
How can records be geocoded?.....	13	Finland.....	76
Further Reading and Associated Resources.....	14	Germany.....	77
Implementing Common Geographies.....	15	Ghana.....	78
Relevant GSGF Principles.....	15	Honduras.....	79
What are Common Geographies?.....	15	India.....	80
Why are Common Geographies needed?.....	15	Indonesia.....	82
How can Common Geographies be realised?.....	16	Kenya.....	91
What sources of data can support the development of Common Geographies?.....	16	The Republic of Korea.....	92
Further Reading and Associated Resources.....	17	Kuwait.....	94
Fostering Interoperability.....	18	Malawi.....	95
Relevant Principles of the Global Statistical Geospatial Framework.....	18	Mexico.....	97
The Importance of Interoperability.....	18	Namibia.....	100
What is Interoperability?.....	18	New Zealand.....	104
Further Reading and Associated Resources.....	19	Panama.....	106
Ensuring Privacy and Confidentiality.....	21	Peru.....	109
Relevant GSGF Principles.....	21	Senegal.....	111
Introduction.....	21	Sierra Leone.....	112
Contextualizing Privacy and Confidentiality.....	22	South Africa.....	114
The challenge of confidentiality in managing geospatially enabled statistical data.....	23	Uruguay.....	115
Dealing with the confidentiality aspects of geospatially enabled statistical data.....	25	Experiences at the Regional Level.....	117
Recommendations.....	29	Africa.....	117
The Terminology of the Integration of Statistical and Geospatial Information.....	32	The Americas.....	119
Index.....	32	Asia and the Pacific.....	121
Supporting Resources.....	40	Europe.....	123
Experiences at the National Level.....	42	Western Asia.....	125
Australia.....	42	Supplementary Documentation.....	128
Botswana.....	43	Germany – Supplemental Note.....	128
Brazil.....	45	India – Supplemental Note.....	139
Canada.....	47	Template Questions.....	149



# Activity 1 – Risks and Benefits

- Split in groups for each principle.
- Identify risks and benefits for each Principle.
- Post the sticky notes on the team's Principle.
- Prepare to give a 5 minute (quick!) overview of the team's work.

## Discussion

### Overarching Discussion Point: Can you provide GSGF Review assistance?

- *Questions on the path forward?*
- *Are you interested in contributing to a topic?*
  - *Deeper insight into existing topic, or case study*
  - *Leading on an unallocated topic*
- *Can you commit to contributing to the review of the GSGF? (small or **BIG**)*
- *Any further questions, offers of support, items/issues that are not considered within the EG-ISGI's Work Plan?*

# General Discussion and wrap up

## Task Team on the GSGF – detailed milestones

### January

~~Reconvene w/c 9 January to review progress. Set up fortnightly meetings.~~

### February

- Outreach with drafters of background papers / resources.

### March

- All background papers are in.
- Identify areas of the GSGF that need to be strengthened, based on background papers

### April – June

- Rewrite per principle, circulate each principle once the TT-GSGF has finalised its review/rewrite

### July

- Final call for all new work.

### August

- GGIM - Draft of the GSGF 2.0 for Review
- Side event on GSGF 2.0
- Side event on the Benefits of the IGIF for the Statistical Domain.

### September

- Nairobi EG-ISGI Meeting

### November

- Prepare EG-ISGI Report

### December – 2025

- StatComm
- Benefits of the IGIF For the Statistical Domain Adoption
- GSGF 2.0 Endorsement

# Activity

- Importance of Foundational Datasets pics.
- Dataset-to-Principle matching.
- Write down the dataset. and place it on a Principle





Global Geodetic Reference Frame



Addresses



Buildings and Settlements



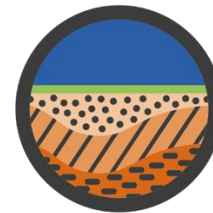
Elevation and Depth



Functional Areas



Geographical Names



Geology and Soils



Land Cover and Use



Land Parcels



Orthoimagery



Physical Infrastructure



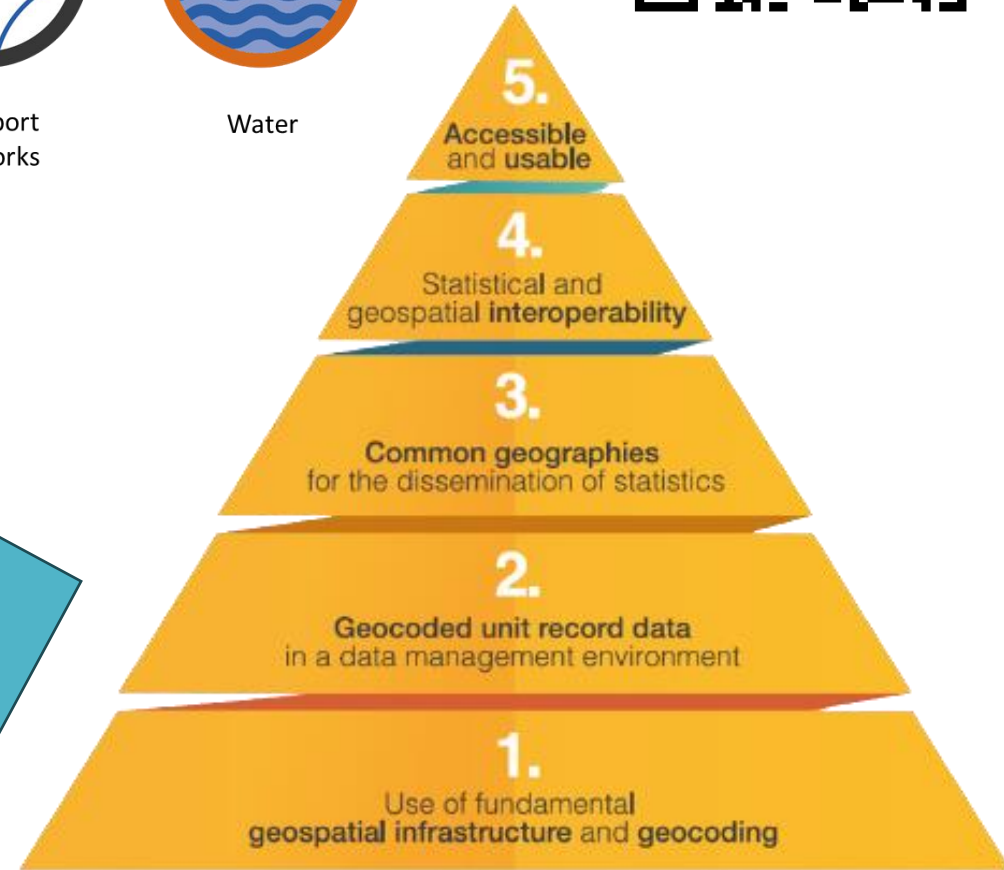
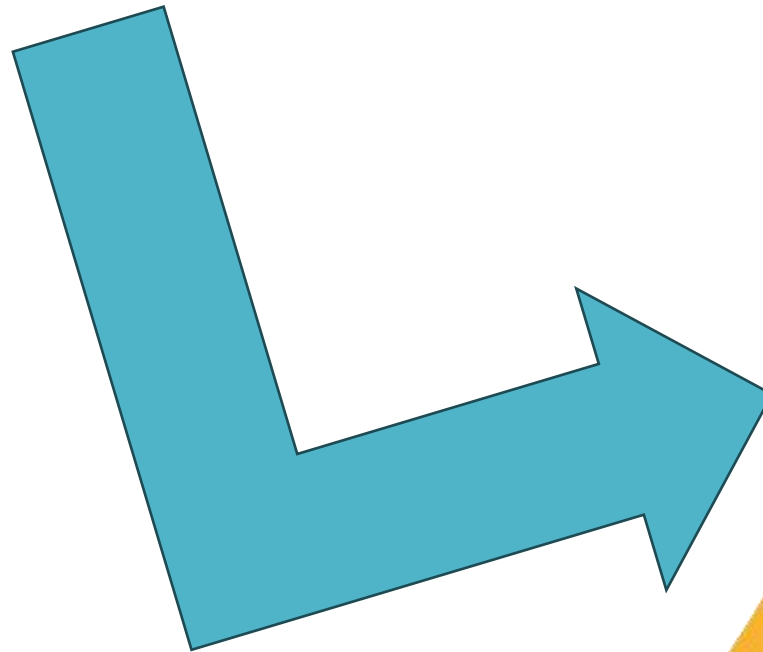
Population Distribution



Transport Networks



Water



10<sup>th</sup> anniversary  
**UN-EG-ISGI**  
 UNITED NATIONS • EXPERT GROUP  
 ON THE INTEGRATION OF STATISTICAL  
 AND GEOSPATIAL INFORMATION

UN Economic and Social Council (ECOSOC)

UN Statistical Commission  
(UNSC)

UN Committee of Experts  
on Global Geospatial Information  
Management (UN-GGIM)

UN Expert Group – Integration of  
Statistical Geospatial Information

