



UN-GGIM:Americas
REGIONAL COMMITTEE OF UNITED NATIONS
ON GLOBAL GEOSPATIAL INFORMATION
MANAGEMENT FOR THE AMERICAS

9° SESSION

UN-GGIM: Americas

The GSGF and beyond - Geospatial-statistical integration for our future

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Session 7 – Global Statistical and Geospatial Framework



November 28, 29 and 30
Santiago de Chile, ECLAC

DO WE HAVE THE DATA WE NEED?



We are almost seven years to 2030 - the year when we should have realized the ambition of the 2030 Agenda - but we are far behind.

This graphic visualizes the global data collected from the SDGs. We are off track from where we need to be in our global journey for sustainable development, we must leave no-one behind. We need data to make informed decisions...

Legends ■ 0-25% ■ 25-50% ■ 50-75% ■ 75-100% ■ Not Applicable

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

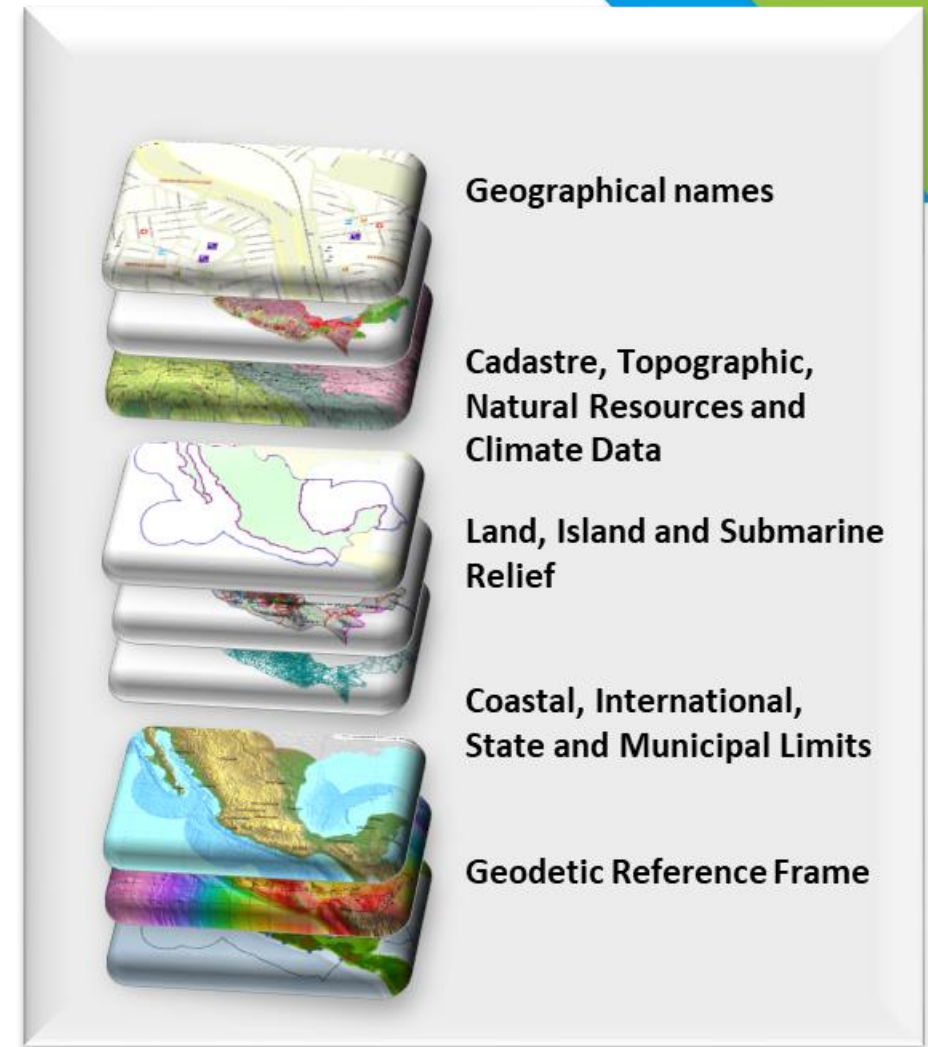
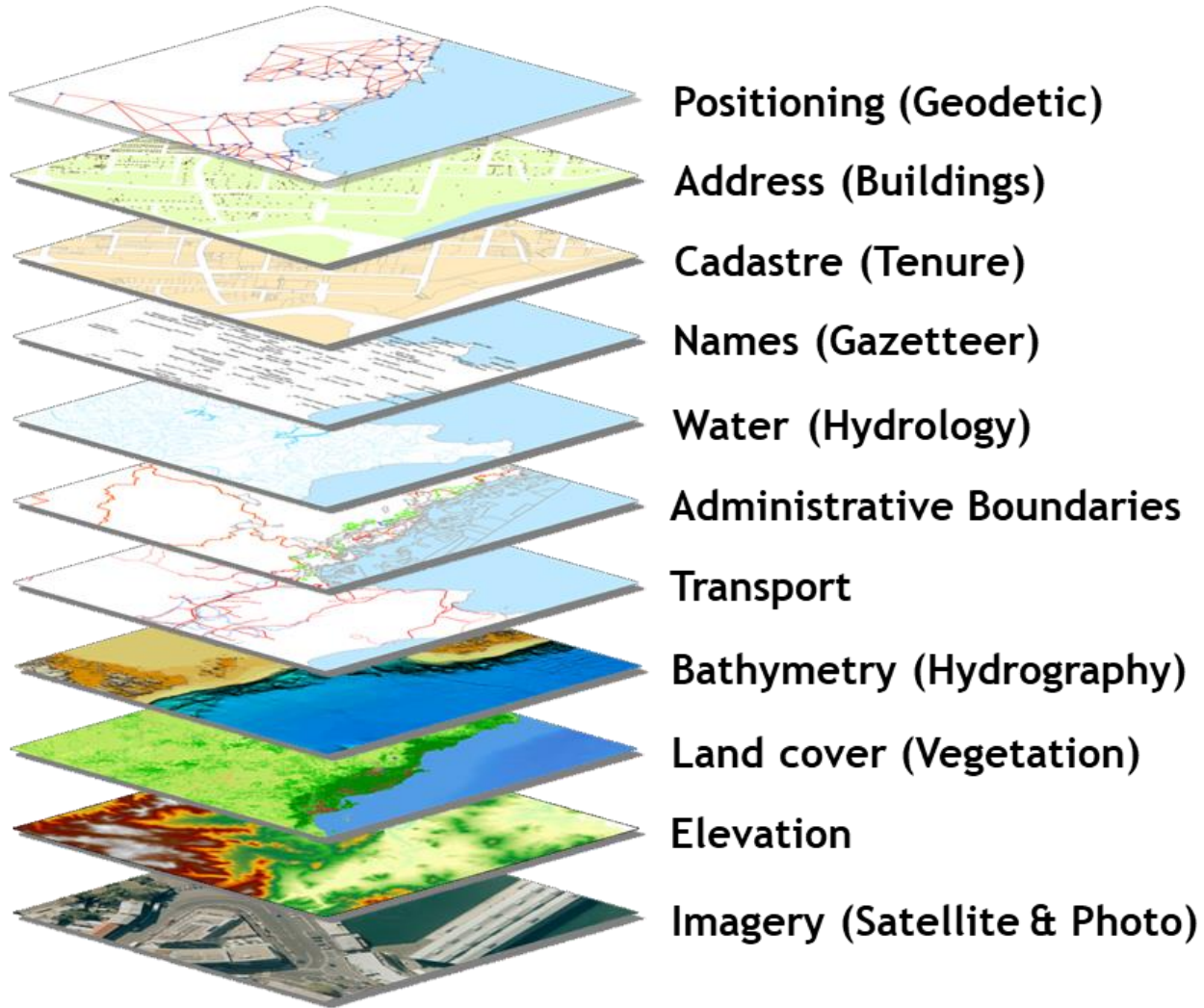


Transport Networks



Water

THE GLOBAL FUNDAMENTAL GEOSPATIAL DATA THEMES



THE SUSTAINABLE DEVELOPMENT GOALS REPORT 2022

The Sustainable Development Goals Report
2022



“ We must rise higher to rescue the Sustainable Development Goals - and stay true to our promise of a world of peace, dignity and prosperity on a healthy planet...

... However, significant data gaps still exist in terms of geographic coverage, timeliness and level of disaggregation, making it difficult to fully comprehend the pace of progress towards the realization of the 2030 Agenda, differences across regions and who is being left behind... ”

António Guterres
Secretary General, United Nations

THE NEED TO STRENGTHEN THE INTEGRATION OF STATISTICAL AND GEOSPATIAL INFORMATION IS DEMANDED BY MANDATES

E/RES/2022/3: Ensuring that the work in the field of statistics and data is adaptive to the changing statistical and data ecosystem

- “Emphasizes the importance for Member States to build resilient, agile, relevant, responsive and robust statistical and data systems adhering to the Fundamental Principles of Official Statistics that fully integrate geospatial information and to seek improved coordination across national statistical and data systems through an expanded role of the national statistical offices in the changing data landscape, where they are increasingly assigned data stewardship responsibilities in the national statistical and data systems”

E/RES/2022/24: Enhancing global geospatial information management arrangements

- “Reiterates the importance of strengthening and enhancing the effectiveness of the Committee of Experts, particularly for the achievement of its operations focused on the Sustainable Development Goals and the Integrated Geospatial Information Framework, to strengthen and ensure its continued effectiveness and benefits to all Member States”

<https://ggim.un.org/Mandates/>

THE EXPERT GROUP ON THE INTEGRATION OF STATISTICAL AND GEOSPATIAL INFORMATION (EG-ISGI)



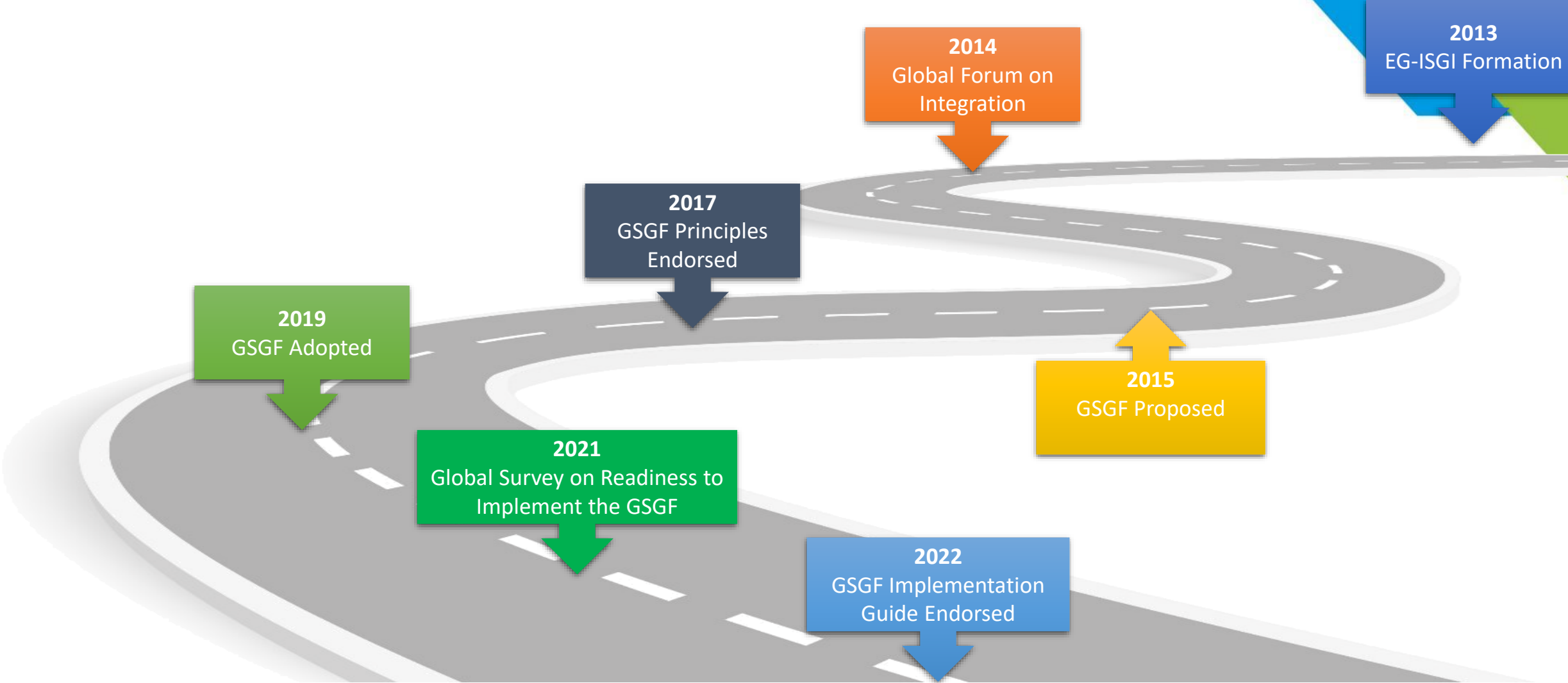
Composed of Experts in Statistical and Geospatial Integration from NSOs and NGIAs, with 29 Member States, 5 UN Regional Commissions, 3 UN Agencies and 4 International Organisations and reports to both the UN Statistical Commission and the UN Committee of Experts on Global Geospatial Information Management (UN-GGIM) and is guided by their mandates:

Statistical Commission Decision 51/123: “...welcomed [the Expert Group’s] continuing efforts to provide guidance to Member States to support the adoption and implementation of the Global Statistical Geospatial Framework (GSGF)”

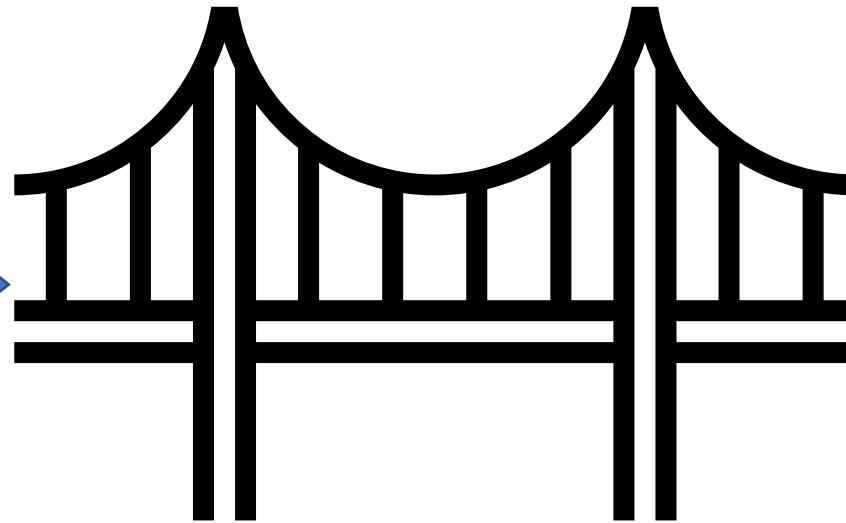
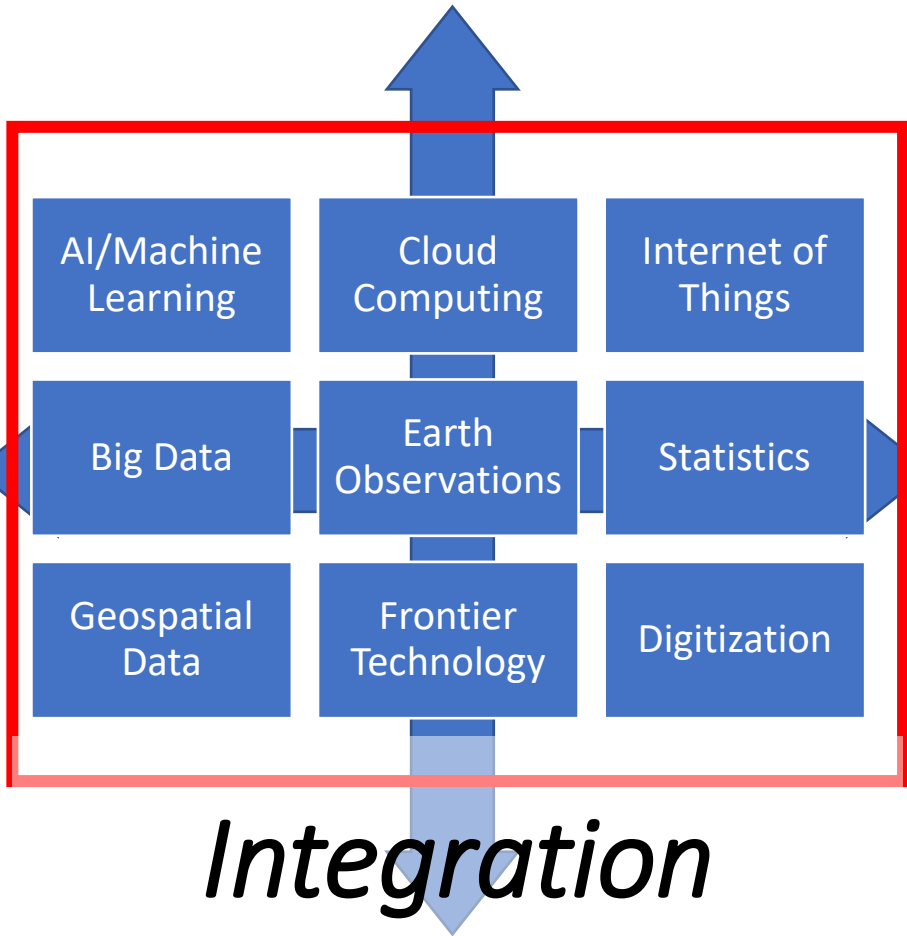
UN-GGIM Decision 9/106: [Encouraged the Expert Group] “...to continue its work to develop guidance on and support the promotion, awareness-raising and implementation of the GSGF, and its work on statistical geospatial integration and coordination, in particular with regard to the Sustainable Development Goals and the 2020 round of population censuses, and encouraged Member States and other stakeholders to participate in, and contribute to, these important elements”

Statistical Commission Decision 53/127: endorsed the GSGF Implementation Guide as a practical means to implement the GSGF and to create, disseminate, and utilise geospatially enabled statistics, and welcomed the many use cases and good practices describing how the GSGF has been implemented and operationalized within national and regional contexts;

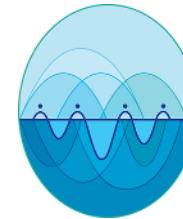
THE EG-ISGI JOURNEY SO FAR



BRIDGING THE GEOSPATIAL DIGITAL DIVIDE THROUGH INTEGRATION



SUSTAINABLE DEVELOPMENT GOALS



ISLAND VOICES
GLOBAL CHOICES

SENDAI FRAMEWORK	Scope and Purpose	1 Global Outcome	1 Goal
7 Global Targets	13 Guiding Principles		
4 Priorities for Action	at 4 Levels Local, National, Regional and Global		
Role of Stakeholders	International Cooperation and Global Partnerships		

SENDAI FRAMEWORK
FOR DISASTER RISK REDUCTION 2015-2030

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

THE GLOBAL STATISTICAL GEOSPATIAL FRAMEWORK



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

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

THE GSGF IMPLEMENTATION GUIDE: THE ENABLING ENVIRONMENT

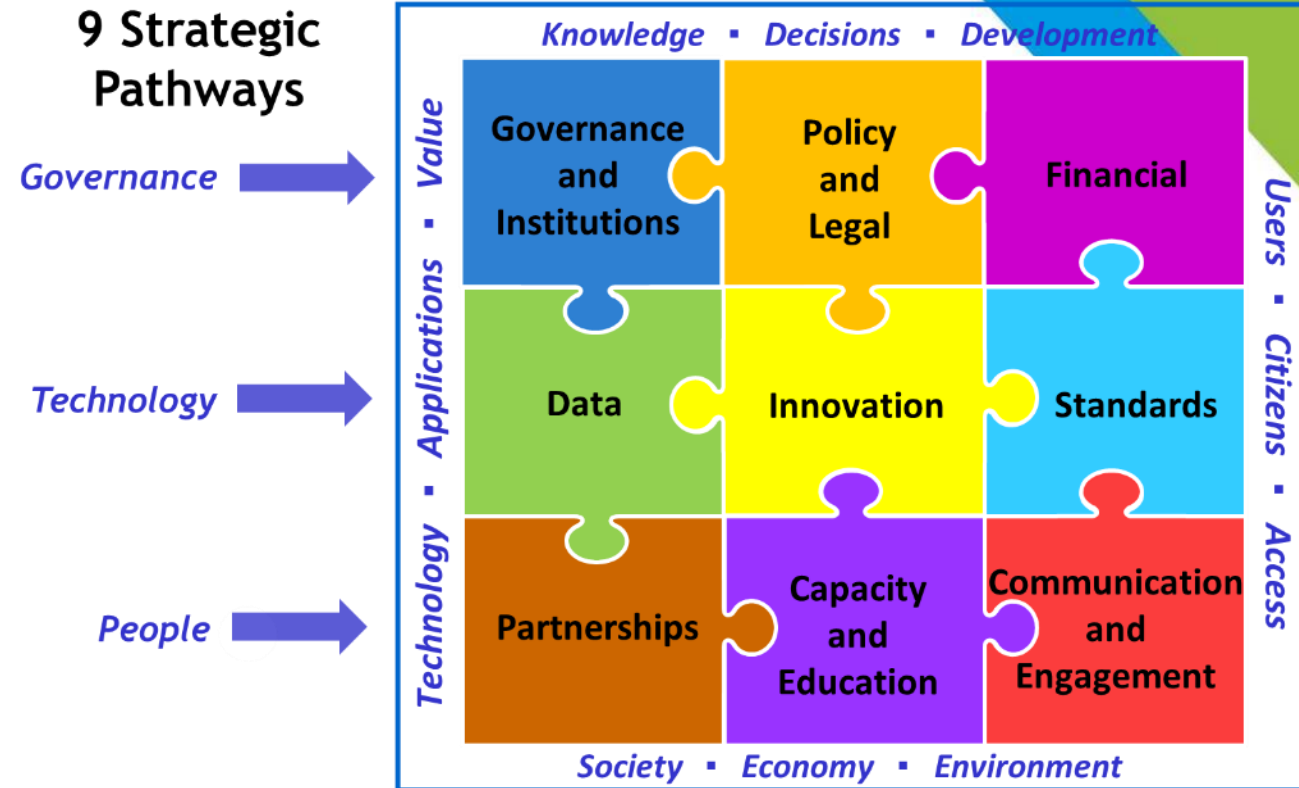
Bridges must have a strong foundation and pillars either side. Geospatially, the Integrated Geospatial Information Framework is a key enabling framework for the GSGF:

Principle 1: Fundamental geospatial infrastructure

- The means of implementing the GSGF is the IGIF
- The 9 strategic pathways of the IGIF have a strong relevance across the GSGF
- Conversely, the GSGF is a key enabler for Strategic Pathway 4: Data

Principle 5: Accessible and Usable

- Promoting the availability of geospatially enabled statistical data ... and other forms of data?



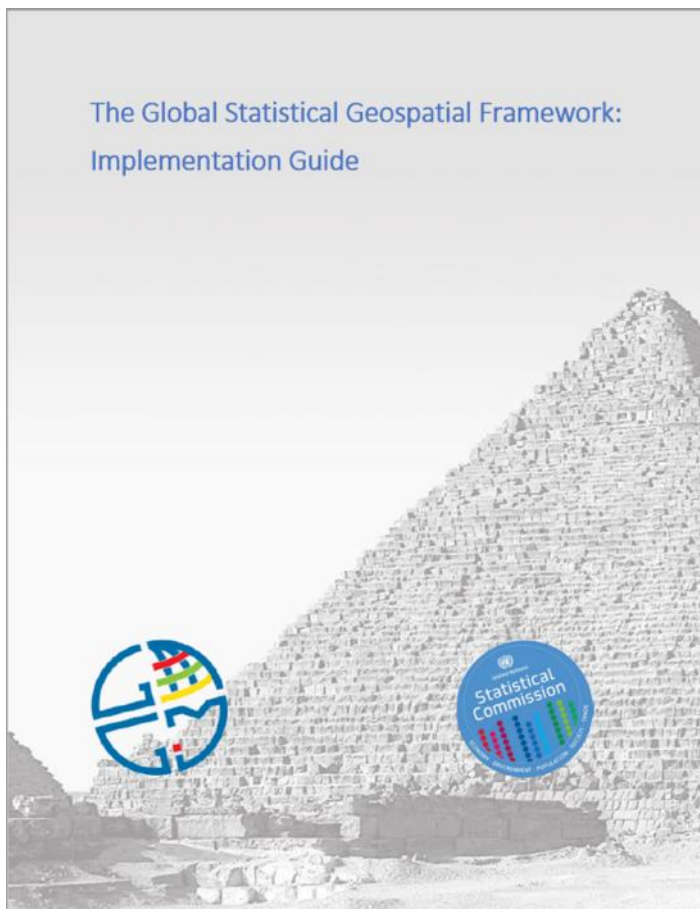
GLOBAL SURVEY ON READINESS FOR THE GSGF



<https://surveys.enalyzer.com/survey/linkindex?pid=rmad4d28>

- 90 complete replies were submitted from 76 Member States and 2 non-Member State observers
- 59% of Member States submitted a coordinated reply from the NSO and NGIA
- 41% of Member States submitted singular replies representing only one organisation.
- ~20% of responding Countries have no to little awareness of the GSGF

THE GSGF IMPLEMENTATION GUIDE



The GSGF Implementation Guide is composed of three main ‘chapters’ to help the implementation of the GSGF.

Implementation Guidance

- Implementing Geocoding
- Implementing Common Geographies
- Fostering Interoperability
- Ensuring Privacy and Confidentiality

Terminology of the Integration of Statistical and Geospatial Information

Experiences of Implementation

- 30 National Experiences
- 5 Regional Experiences

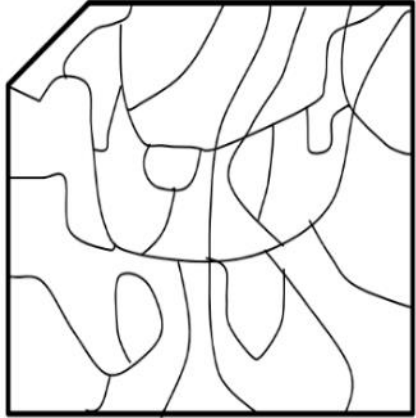
<https://unstats.un.org/unsd/statcom/53rd-session/documents/BG-3x-EG-ISGI-GSGF-Implementation-Guide-E.pdf>

THE GSGF IMPLEMENTATION GUIDE: GEOCODING

- Geocoding is generally defined as the process of **geospatially enabling statistical unit records** or other nonspatial data (such as address lists or housing unit records) by creating **x- and y- (and potentially z) coordinates** and **linking them to each record.**”
- Once geocoding is performed on individual statistical unit records can be **aggregated** into larger geographic units (e.g., states, provinces, or municipalities) for statistical analysis.
- Such statistical unit records are then ready for further applications such as methodologies to ensure *confidentiality* and *avoid data disclosure*.
- The GSGF Implementation Guide enables the implementation of the recommendation: **“All statistical unit records should include or be linked to a precise geographic reference (an x- and y- coordinate), and if not, the smallest geographic area possible”**
- Future work in this area will elaborate and link the GSGF implementation guidance to the relevant area(s) of the Integrated Geospatial Information Framework - specifically its Strategic Pathway 4: Data.



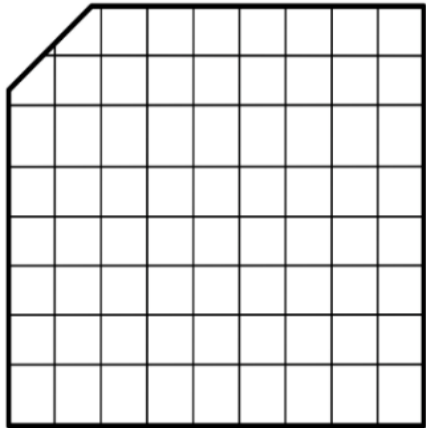
THE GSGF IMPLEMENTATION GUIDE: COMMON GEOGRAPHIES



**Administrative
Geographies**



**Statistical
Geographies**



Common geographies are an agreed set of geographic areas for the **display, storage, dissemination, and analysis** of social, economic and environmental comparisons across statistical datasets from different sources. They enable the production and dissemination of integrated statistics and geospatial information within a country to support informed decision-making.

The broad types of *Common Geographies*:

- Geographies defined in law, regulations or constitution - examples include sub-national major political regions, electoral districts and local municipalities. This type of geographic area is often termed **Administrative**.
- Geographies defined by a set of rules, or a methodology meant to represent a geographic concept such as metro regions, statistical grids and small area dissemination geographies. This type of geographic area is often termed **Statistical** or **Geo-Statistical**.

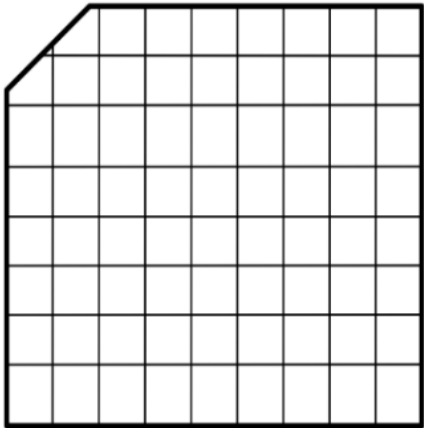
THE GSGF IMPLEMENTATION GUIDE: COMMON GEOGRAPHIES



**Administrative
Geographies**



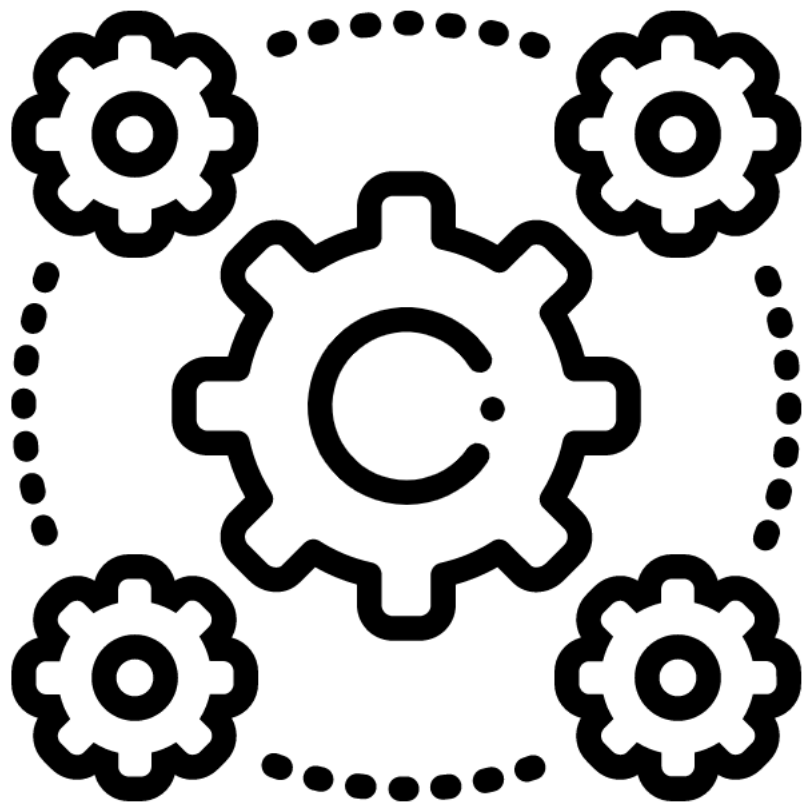
**Statistical
Geographies**



The GSGF encourages the adoption of common geographies, stating that *“a common set of geographies ensure that statistical data is geospatially enabled in a consistent manner and is capable of being integrated at the aggregate level; and also ensures that users can discover, access, integrate, analyse, and visualise statistical information seamlessly into geographies of interest”*. Thus, following objectives may be attained:

- *Enhanced capacity to produce aggregated data and indicators for domestic purposes and data users.*
- *To meet monitoring and reporting needs in support national objectives, and global and regional indicator frameworks (e.g. Population Censuses, 2030 Sustainable Development Goals).*
- *To address emergent and persistent challenges (COVID-19 pandemic, disasters) for countries, and regional and international agencies.*

THE GSGF IMPLEMENTATION GUIDE: INTEROPERABILITY



Contextualizes the modern needs of NSOs and NGIAs in fostering interoperability, privacy and confidentiality when advancing their use of geospatially enabled statistical data, provides definitions and advice on how to avoid data disclosure pitfalls:

- **Identity disclosure** refers to finding a direct identifier of a statistical unit from the data (for example, name or address);
- **Attribute disclosure** refers to revealing an association between a statistical unit and its sensitive features. For example, the user knows someone is living in an area, while the data show that all the inhabitants of this area share a common characteristic, such as income; and,
- **Inferential disclosure** refers to inferring some attribute with a high confidence level, where increasing confidence levels is a desirable outcome for statistical data users.

Further, the guide summarises the current state of relevant academic literature and highlights good practices in Privacy and Confidentiality, including within the IGIF.

THE FUTURE FOR THE EG-ISGI

IGIF

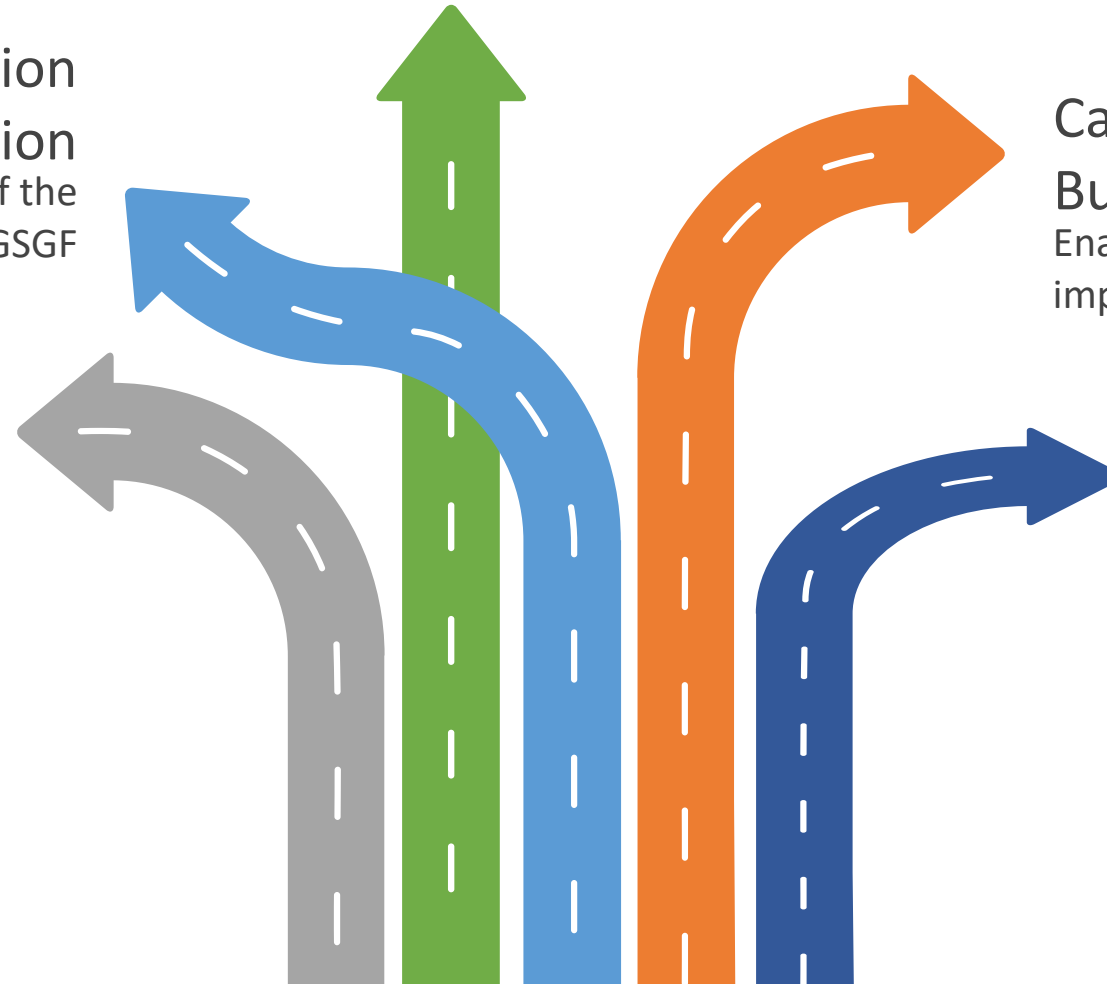
Expanding the IGIF for
the Statistical Domain

Communication
and Promotion
Raising awareness of the
GSGF

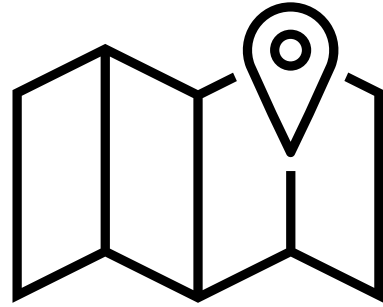
Capacity
Building
Enabling others to
implement the GSGF

Regional
Coordination
Strengthening regional
coordination and coherence

Other Directions
Responding to our
Mandates and Member
States



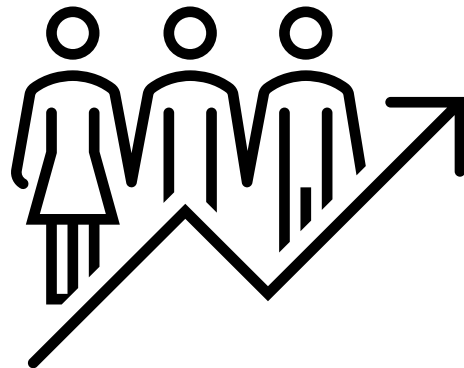
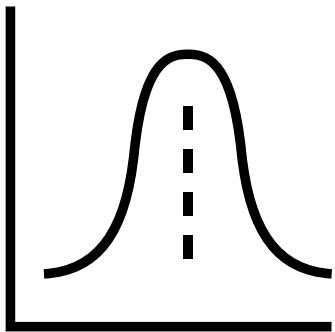
THE FUTURE FOR THE EG-ISGI



Integrating statistical and geospatial information is important - we now have the GSGF as a foundational framework. Now, the EG-ISGI will aim to communicate and situate the relationship vis-à-vis the GSGF and the IGIF.

Further, the EG-ISGI will now aim to leverage its mandate to raise-awareness and coordinate activities on integration. This will include:

- Liaising with other groups (HLG-IGIF, Working/Expert Groups on Disaster-Related, Climate Change- and Economic Statistics etc) to reduce duplication and strengthen coherence
- Coordinating within and between regional groups on integration to identify needs



THE FUTURE FOR THE EG-ISGI

Regional Workshop on Geo-Statistical Integration

30 November 2022

The Seventh Meeting of the EG-ISGI

1-2 December 2022

@ UN Economic Commission for Latin America and the Caribbean
Santiago, Chile

THE FUTURE FOR THE EG-ISGI

Thank you very much!

Muchas Gracias!

Muito Obrigado!