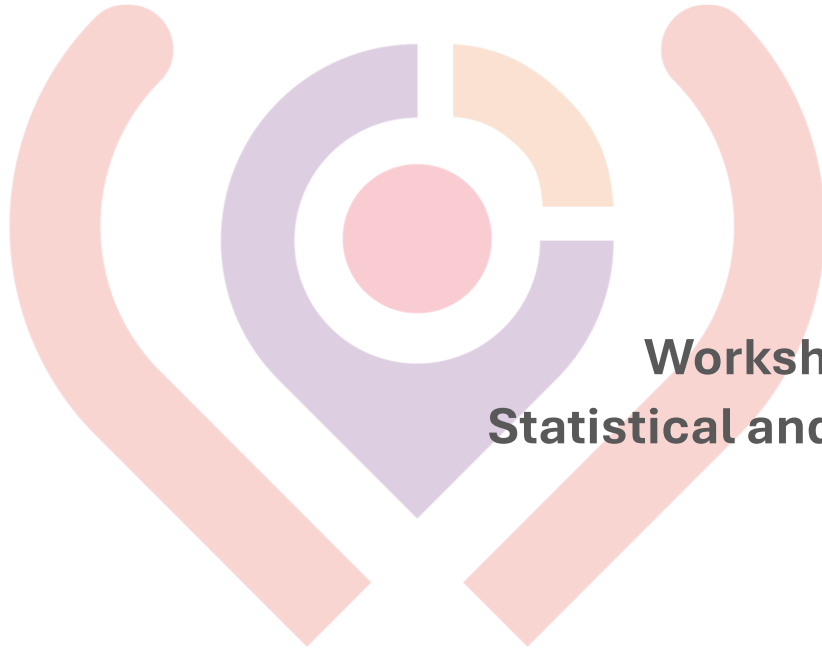




Co-funded by the
European Union



Workshop on Strengthening Integration of Statistical and Geospatial Information in Europe

Deep Dive – GSGF Session

Ingrid Kaminger, Statistics Austria

Rossano Figueiredo, Statistics Portugal

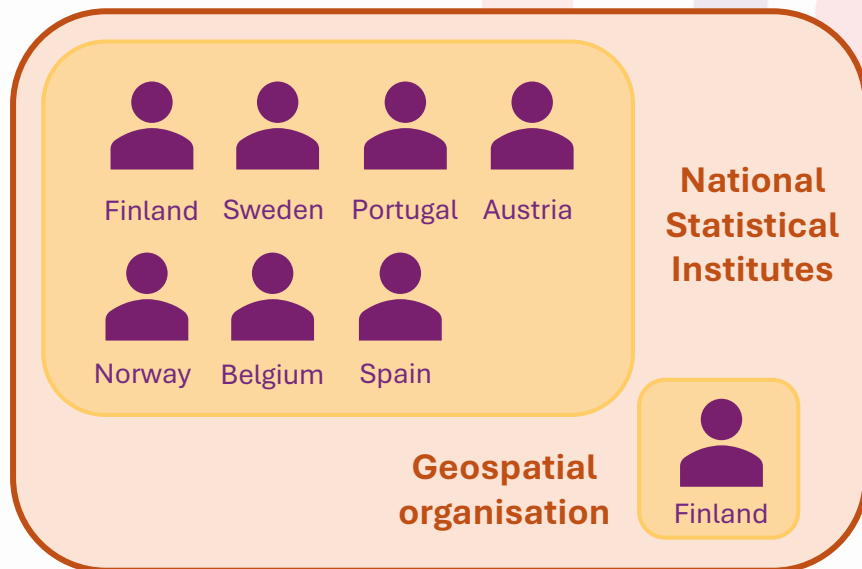
Linus Rispling, Statistics Sweden

12 February 2026 | Vienna, Austria

AGENDA

- GSGF-CARE
 - GSGF-CARE Project and Consortium
 - Main goals
 - Structure of the project
- Assessing maturity for statistical-geospatial data integration
 - GSGF-CARE Survey 2025
 - GSGF Self-assessment Tool
- GSGF Europe: Information Service
- Regional Workshops

- **GSGF Collaboration and Awareness in Europe (2024-FI-GEOS-GSGF-CARE)**
- Eurostat funded (EU 90%) - budget ~600 000 euros
- Duration 24 month (2/2025 – 1/2027)



Other Actors



Finnish Terminology Centre
(sub-contracted)



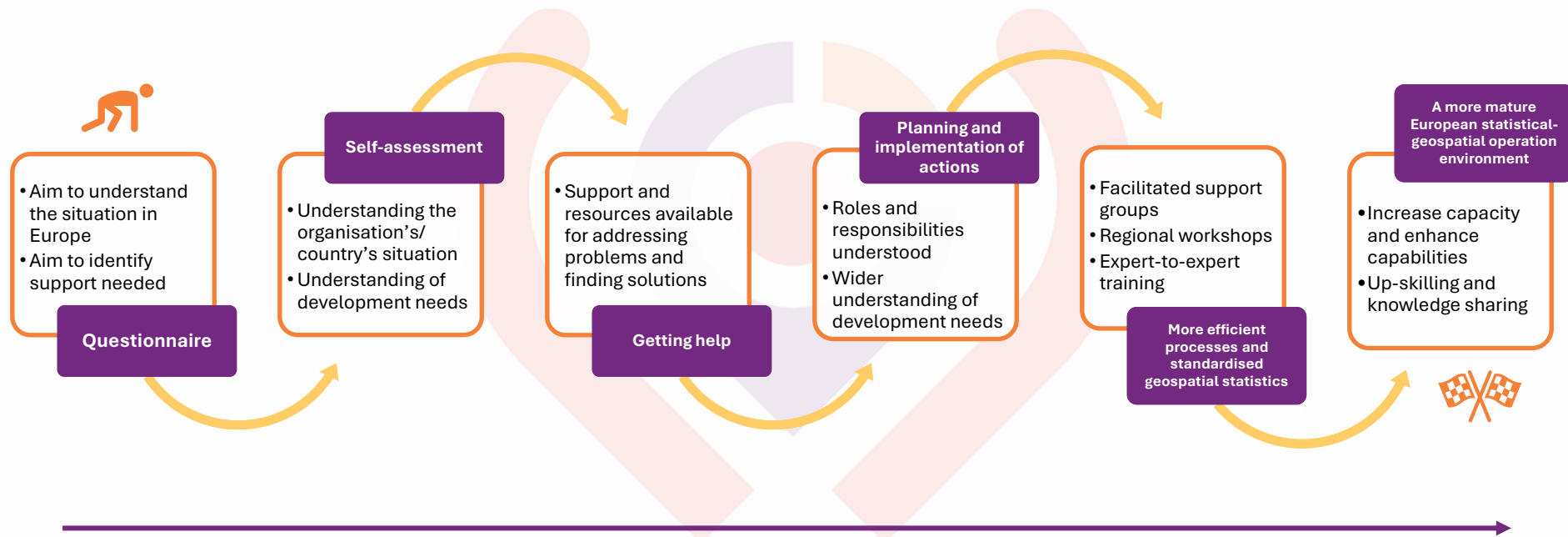
EARSC (European Association of Remote Sensing Companies)
voluntary collaboration



EFGS Network
Active contacts to other interested parties on the way!

Main goals

- **To evaluate the maturity** of statistical-geospatial data integration in Europe.
- **To help European countries** understanding and assessing their progress.
- **To offer better communication** and provide places for joint development.
- **To communicate about the benefits, status and most typical obstacles** of the integration of statistics and geospatial data.
- **To inform the strategic level** of the ESS about the state of play and what needs to be done in the field of statistics and geospatial data integration.



Structure of the Project

WP2

Monitoring and assessment of the maturity for statistical-geospatial data integration in the ESS

- Quantitative assessment by means of survey to MS
- Qualitative assessment by means of GSGF self-assessment tool

WP3

Supporting the progress of statistical-geospatial data integration in the ESS

- Capacity building and capability development network
 - Co-development in facilitated support groups
 - Peer support in regional workshops
- GSGF Europe Review
- Cross-domain GSGF Europe terminology work

WP4

Communication and networking

- EFGS Conference 2025
- EFGS Conference 2026
- Support for organising the conferences
- Communication, dissemination and high-level statement

WP1 Project Management and coordination

Structure of the Project

WP3

Supporting the progress of statistical-geospatial data integration in the ESS

- Capacity building and capability development network
- **Co-development in facilitated support groups**
 - **Peer support in regional workshops**
- GSGF Europe Review
- Cross-domain GSGF Europe terminology work

WP2



Self-assessment: Identify development needs and strengths



WP3



Provide support and guidance for **capacity building** and **capability development**

WP4 – High-level

- Discussion during our first High Level Group Meeting (focus statistics)
 - There are no real obstacles to using geospatial data in statistical production — people simply forget it.
 - Geospatial integration is not necessarily blocked by formal barriers; it is often overlooked.
 - Need clear justifications for using geospatial data in statistical production. What can be gained by using “geo”? (measure for society)
 - All future regulation changes should include geo-aspects.
 - Need for geo-ambassadors to raise awareness and visibility.
- EFGS in Brussels (Sept. 30th – Oct. 2nd 2026) will have a High-Level Day.

Assessing maturity for statistical-geospatial data integration

- **GSGF-CARE Survey 2025**

- Follow up on previous surveys (GEOSTAT) to monitor maturity for statistical-geospatial data integration.



- Online survey. NSIs were responsible for submitting responses (with the chance to consult NGIAs counterparts).
- Results (survey report) were available in August 2025

- **GSGF Self-Assessment Tool**

- Developed by the UN EG-ISGI to enable assessment of capabilities in a structured way. It identifies strengths and gaps.



- GSGF-CARE project promotes the use of the tool. We are looking for volunteers interested in using it and sharing conclusions with us.
- 2026 webinar to share national experiences and results.

GSGF-CARE Survey 2025

Three main themes

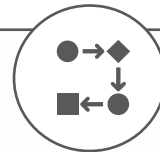
Fundamental geospatial data

What is the **availability and quality of authoritative and fundamental geospatial data** and to what extent is it used for **statistical purposes**?



Level of mainstreaming

To what degree is **geospatial data mainstreamed** (fully integrated) in the **statistical production** process of NSIs?



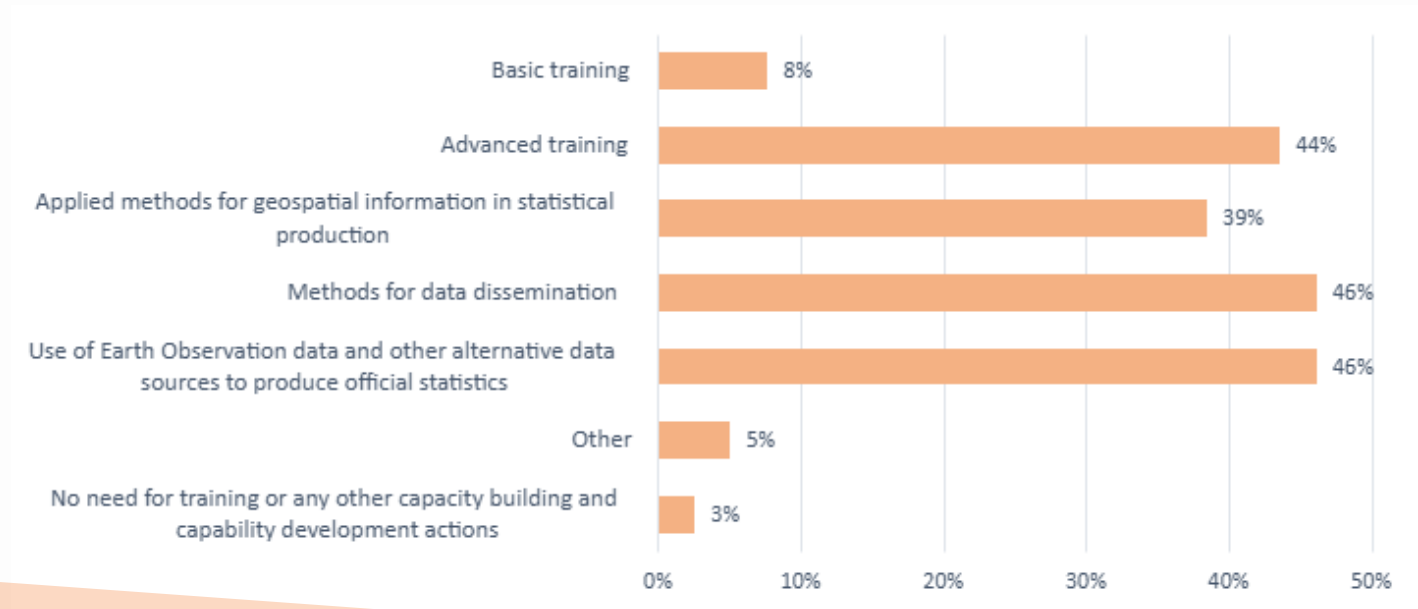
Obstacles and capacity needs

What are the **obstacles** that prevent data integration from advancing and what are the **needs to build capacity**? What are the **areas for improvement**?



Obstacles and capacity needs

What are the needs to build capacity?



Can you relate to the results?

Areas of interest

Capacity building and capability development (WP3)

Number of countries/organisations

Areas for improvement

Advancements and Good Practice



Collaboration and cooperation models & well-structured and interoperable **national data ecosystems**

29

24



Data management environments and **location-centred architectures & streamline geospatial data** into statistical production

39

19



Solutions for **data dissemination**

21

11



Implementation of **GSGF (Europe)**

19

2

Conclusions

Data availability and data quality

- Significant improvements the past 5 years but still the situation is not fully satisfactory
- **Some data themes, most critical to statistical-geospatial data integration (e.g. addresses and buildings) need a better baseline** (better coverage and quality)
- Population data domain most mature in terms of usage of fundamental geospatial data


Level of mainstreaming

- A common perception that geospatial data management and processing - to a significant degree - **are still separate from core statistical business processes and respective workflows**
- Opinions differ to what extent this is a problem or not
- Expectations vary among countries? “Fully integrated” – ambiguous and open to interpretation?

Obstacles and capacity needs

- **Shift from lack of data access/quality** (in past surveys) **to lack of capacity/human resources**
- Fewer people are expected to do more work + progress gives appetite for more advancements
- New and changed roles for “**geographers**” in the new data and technological landscape – a higher technical level

GSGF-CARE useful links

If you're interested in reading the results from the 2025 GSGF-CARE survey and getting to know in detail the conclusions, please access the document [here](#) (EFGS website) 

For more information about **GSGF-CARE**:
<https://www.efgs.info/projects/gsgf-care/>



GSGF Self-assessment Tool

What is it and how can you use it?

You can find the tool [here](#)

- It was developed by the **UN Expert Group on the Integration of Geospatial and Statistical Information (EG ISGI)**.
- Inspired by World Bank Baseline Assessment Diagnostic Template for the **Integrated Geospatial Framework (IGIF)**.
- The EG ISGI wanted a simplified and modified version of the tool targeting the **maturity to implement the GSGF**.
- Note that it is a **self-assessment** tool, not a questionnaire, not a contest, not a scientific method. The result is intended for your organisation/country only!
- The output can be used for comparing strengths and weaknesses between countries – compare general output, not individual scoring!

GSGF Self-assessment Tool

- A simple **MS Excel file** with tabs (one tab per dimension + additional descriptions)
- Each tab contains questions related to **one maturity dimension** (or key element)

Weighted score:
Score*weight

Question	Scoring guide	Notes	Score	Weight	Weighted score
Is there a working relationship between NSO(s) and NGIA(s) in your country?	<p>0 = None</p> <p>25 = NSO(s) and NGIA(s) are occasionally collaborating, mostly ad hoc based</p> <p>50 = A formal agreement is in place but collaboration is not yet up to a desired level</p> <p>75 = A working relation is operational, however collaboration does not go beyond what has been formally agreed</p> <p>100 = A close and trustful relation is established, collaboration covers both strategic and operational issues</p>			1	0

Scoring guide: general 'check-points' to support the scoring process, not the exact criteria.

Notes: Motivation for scoring. Can help facilitate the use of the result.

Weight: the relative importance of the questions. 2 signifies that the question is twice as important as a question with a weight of 1. Weighting is optional – default is value 1.

Score: Your assessment (0-100)

GSGF Self-assessment Tool

Results

Radar chart type

Results	
Dimensions	Maturity by dimension
Governance & Institutional Capacity	58
Policy & Legal	47
Human resources & Capacity	38
Data & Interoperability	45
Technology & Infrastructure	44
Overall Score	47

WEIGHTED TOTAL SCORE		58
Number of Questions	6	
Total Weighting	6	
AVERAGE UNWEIGHTED	58	

Weighted total score is summarised for **each maturity dimension** and transferred to the last tab for summary results. It is also visualised in a graph (maturity profile)

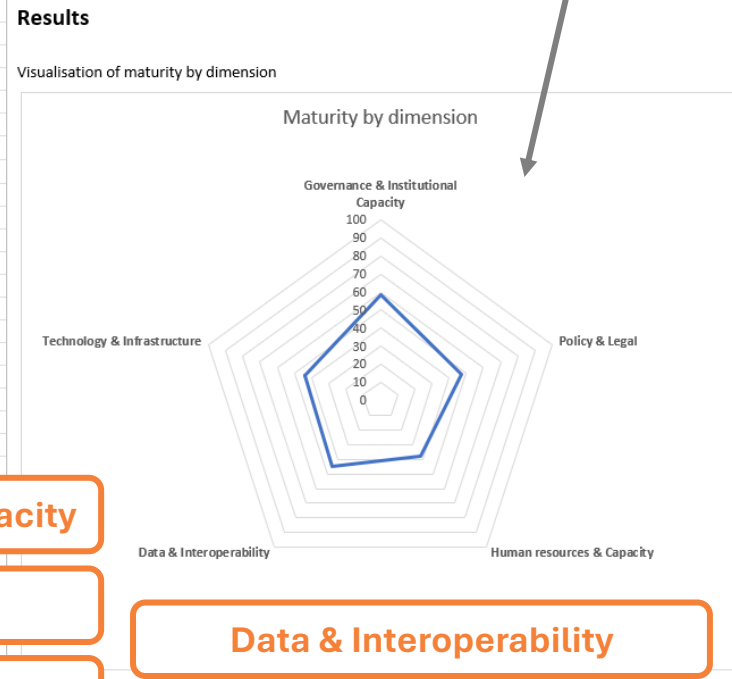
Governance & Institutional Capacity

Policy & Legal

Human Resources & Capacity

Data & Interoperability

Technology & Infrastructure



GSGF Self-assessment Tool

Data Audit



Part 1: Fundamental Geospatial Data Themes with high priority for data integration

Icon	Data Theme	Brief Description
	Addresses	An Address is a structured label, usually containing a property number, a street name and a locality name. It's used to identify a plot of land, a building or part of a building, or some other construction, together with coordinates indicating their geographic position. Addresses are often used as a proxy for other data themes such as Land Parcels.
	Functional Area	Functional Areas are the geographical extent of administrative, legislative, regulatory, electoral, statistical, governance, service delivery and activity management areas.
	Buildings and Settlements	A Building refers to any roofed structure permanently constructed or erected on its site, for the protection of humans, animals, things, or the production of economic goods. Settlements are collections of buildings and associated features where a community carries out socio-economic activities.
	Land Parcels	Land Parcels are areas of land or more generally of the Earth's surface (land and/or water) under common rights (such as ownership or easements), claims (such as minerals or indigenous land) or use. This theme can include individual fields and cadastral parcels.
	Transport Networks	Transport Networks are the suite of road, rail, air, cable and water transport routes and their connectivity.
	Population Distribution	The Population Distribution theme covers the geographical distribution of people, including population characteristics.
	Land Cover and Land Use	Land Cover represent the physical and biological cover of the Earth's surface. Land Use is the current and future planned management, and modification of the natural environment for different human purposes or economic activities.

- The “**Data Audit**” tab is an independent part of the assessment.
- The basis for the audit is the **UN-GGIM Global Fundamental Geospatial Data Themes**.
- The audit is not necessary to complete the assessment, but it can facilitate input for the “Data & Interoperability” maturity dimension.
- Strongly recommended to do it, especially as a basis to discuss requirements on **quality and coverage of national geospatial data for statistical purposes**.

GSGF Self-assessment Tool

Dimensions and Experiences



Governance and Institutional Capacity

- Clear and accepted **institutional roles and responsibilities** across government regarding the **production and management of geospatial information**
- **Data governance policy/model** for geospatial information management
- **National spatial data infrastructure (NSDI)** or national initiative for geospatial information management
- A **working relationship** between NSI(s) and NGIA(s) / and other data custodians
- **International collaborations** on geospatial information management, where nations and organisations pursue common goals or interests through interaction




Any thoughts from the audience?

Governance and Institutional Capacity

Experience from Statistics Portugal

Production and management of geospatial information

- Data governance mandates, legal arrangements, or custodianship roles and responsibilities are not clearly defined or binding beyond the NSDI legislation
- **NSDI:** National Geographic Information System ([SNIG](#)) 
- Bilateral and tailored data protocols/agreements to exchange data and information are the most common rule
- Institutional working relationship with NGIA: **Cooperation Protocol** for responsibilities and data/information exchange (more operational level)
- **Data custodians:** municipalities, SNIG network, regulatory bodies (energy and communications), among others.
- Active participation in **international collaboration**, although more initiative is needed on geospatial frameworks and standards (e.g., IGIF and ISO/OGC)



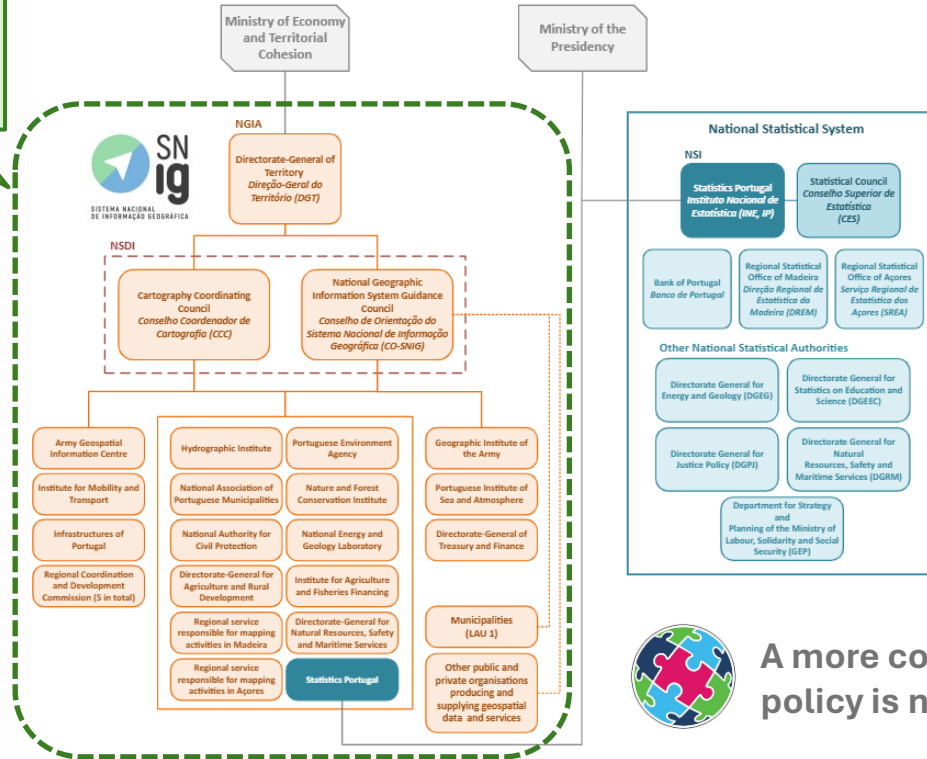
TOTAL
SCORE
71



Governance and Institutional Capacity

Experience from Statistics Portugal

National geospatial data ecosystem



National Geospatial Data Strategy

SNIG 2020 vision

NSDI Guidelines (2022)



A more comprehensive national geospatial policy is needed; IGIF can help in this process

Policy and Legal aspects

- **Policies and legal frameworks** are in place to:
 - Enable **geospatial data exchange** between institutions (collaborative environment)
 - Support the **dissemination** of geospatial data as ‘**Open Data**’, by taking into consideration its unique aspects and requirements
- Specific **data protection, licensing and privacy laws** around statistical and geospatial data to safeguard the rights of individuals and companies
- A compliance-based **policy or system** to ensure that organisations are correctly implementing nationally or internationally endorsed **standards**
- Initiatives (nationally) that actively advocate and promote the principles, values, needs and **benefits of geospatial data and technology standards**



Any thoughts from the audience?



Policy and Legal aspects

Experience from Statistics Portugal

National data legal framework:

- **EU legislation** (INSPIRE, Open Data Directive, GDPR and Data Governance Act) and transposition to the national legal system
- **NSDI legal norms:**
 - INSPIRE national implementation
 - Responsibilities in cartography and geospatial information activities and coordination duties
 - Definition of geospatial datasets and respective metadata
 - General rules for the creation of the geospatial data infrastructures in Portugal
 - Transposition of the EU Open Data Directive (HVD Implementing Regulation N° 2023/138)
- Law of the **National Statistical System** (Law No. 22/2008)
 - Article 6: Principle of Statistical Secrecy > all individual-level statistical data are treated as confidential (privacy protection and very strict disclosure conditions)



Human Resources and Capacity

- **Priority areas for capacity development** in geospatial information management
- **Permanent staff** trained in **Geographic Information Systems (GIS)**, including skills in **data management, spatial analysis, and geospatial database management**
- Geospatial information and technology are used in the **production of statistics** in different statistical domains
- The level of **literacy** to utilise geospatial data and technology
- **Professional training** or continual technical and professional development available to the workforce (in NSIs and NGIAs) to sustain **geospatial capabilities**



Any thoughts from the audience?



Human Resources and Capacity

Experience from Statistics Austria

- **Permanent GIS staff** (about 11 persons) including special skills in geospatial database management and spatial analysis (e.g. Earth Observation)
- **Geospatial information and technology** are used in the production of statistics: i.e. calculating distances for commuters, using earth observation data for agricultural and environmental statistics
- Provision of **geospatial services** for NSI staff: Web Feature Services, Web Processing Services (calculation of distances/routing)
- **GIS training courses** for NSI staff are offered to improve the level of literacy and geospatial capabilities



Data and Interoperability (1)

- A **National Data Framework** (statistical-geospatial framework) has been established to organise and integrate the country's fundamental geospatial and statistical data holdings
- A common single **national geodetic datum reference, projection and coordinate system** is in use
- **Fundamental datasets** have been identified for each data theme
- Each of the fundamental datasets has a **data profile** (e.g. descriptive metadata)
- All fundamental geospatial datasets are created to an **agreed quality level** and regularly maintained and enhanced
- Data is **interoperable** across different **data domains** (e.g. different data sources can easily be integrated in analysis and services)



Data and Interoperability (2)

- A formalised system for governance of boundaries and **codes of administrative and statistical geographies** is in place
- **Lowest geographical level** possible is used to capture and geocode unit record data in the Population and Housing Census
- **Administrative data sources** are used to produce geospatially enabled data or for geo-statistical purposes within the production of official statistics
- **Guidance materials** have been developed to support coherent **georeferencing/geocoding** processes
- Each **statistical unit record (micro data)** can be geocoded/georeferenced to a precise location (e.g. x,y coordinates)



Any thoughts from the audience?

Data and Interoperability

Experience from Statistics Sweden

Administrative and statistical geographies – a systems approach for interoperable and harmonised data in Sweden

Current situation:

- Approximately **150 administrative and statistical geographies** with **45 producers** in Sweden
 - Digital boundaries for municipalities, river basins, urban areas/localities ...
- A **lack of harmonised, quality assured master data**
 - Previously produced with varying quality (gaps and overlaps in geometry, lack of maintenance ...)
 - Disparate treatment of historical datasets and versioning
- **Decentralised system**
 - Data distributed by different government agencies and channels
 - Each government agency decides dissemination
- **Lack of resources**
 - Financial, internal organisation knowledge ...

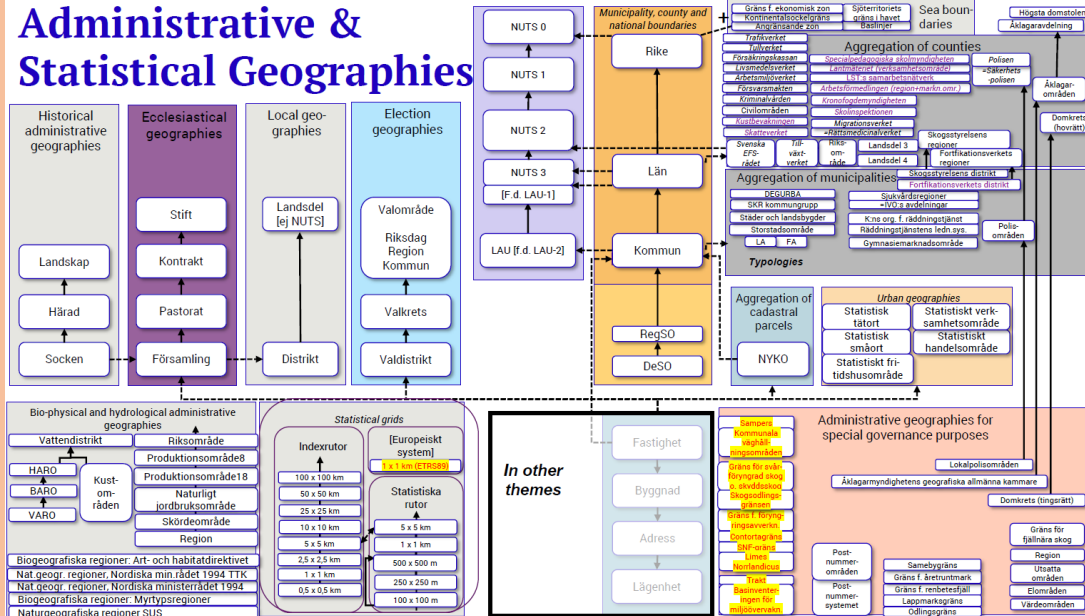


Data and Interoperability

Experience from Statistics Sweden

Administrative and statistical geographies – a systems approach for interoperable and harmonised data in Sweden

Administrative & Statistical Geographies



Municipalities River basins Localities



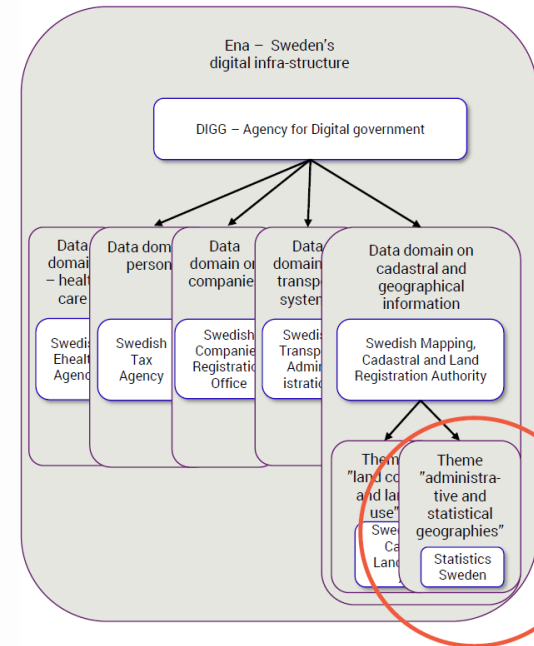
Data and Interoperability

Experience from Statistics Sweden

Goal: Achieving interoperable and harmonised data for administrative and statistical geographies for Sweden

Background:

- **National fundamental data domains** (“data spaces”) ensure that the data exchanged within the infrastructure is correct and accessible as “national fundamental data”
- **National geospatial data platform (NGP)**
 - Includes viewing, downloading and API access
 - Machine readable
 - Included data is steered by specifications and modelling



Data and Interoperability



Experience from Statistics Sweden

Goal: Achieving interoperable and harmonised data for administrative and statistical geographies for Sweden

Solution – project:

- Statistics Sweden was assigned the task to **include as many administrative and statistical geographies as possible into NGP** by the Swedish Mapping Agency:
 - **Contact with producers** (i.e. other government agencies)
 - **Explaining the benefits** with the “once only principle” and interoperability
 - **Assisting the producer** with writing specifications, modelling and structuring of data
 - **Resolving legal issues**
 - **Reference group** of ~90 GIS specialists, entrepreneurs, etc. ensures usability
- **Many challenges** – but moving forward
- **Work initiated:** ~40 out of 150 administrative and statistical geographies and 8 out of 45 producers included/close to inclusion in the NGP



Technology and Infrastructure

- **Fundamental ICT infrastructure** (such as internet, electricity, and digital geospatial technologies) is available, accessible and adequate
- NSI(s) and NGIA(s) have sufficient **storage space, hardware, and software** to effectively and efficiently conduct geospatial data processing activities
- Availability of an **NSDI** enabling infrastructure and **geoportal** in operation that supports sharing, viewing, accessing and using geospatial information
- **Geospatial technologies** are used to deliver new services and insights to the broader community of users (beyond specialist/expert users)
- **Machine-learning** and **advanced GIS software** are used for data capture/creation



Any thoughts from the audience?

Technology and Infrastructure

Experience from Statistics Austria

- **Machine-learning** for quality assurance
- Check of address and building coordinates in the Building and Dwelling Register (building polygons)
- Using and comparing additional nationwide geodata (postal delivery)
- **Earth Observation** for quality assurance
- Detecting agricultural buildings
- Change detection (new buildings)



GSGF Europe: Information Service

- **Online repository** enabling users to navigate, consult and download a large volume of guidance material produced by the **GEOSTAT projects**, mainly GEOSTAT 4.
- **One-stop-shop** for organisations looking for implementation guidance on **GSGF Europe**.
- **Good practice use cases, studies, business cases and proofs-of-concepts** providing insights and inspiration from different countries and organisations.
- **Searchable feature** by GSGF Principles or by keywords to find information of particular interest.




GSGF Europe: Information Service

HOME NEWS EVENTS ▾ GUIDANCE ▾ PROJECTS ▾ ABOUT EFGS ▾ SHARE YOUR KNOWLEDGE

EUROPEAN FORUM FOR GEOGRAPHY AND STATISTICS

GSGF EUROPE: INFORMATION SERVICE

THE GLOBAL STATISTICAL GEOSPATIAL FRAMEWORK

GSBPM

INTRODUCTION TO SPATIAL STATISTICS ▾

CASE STUDIES ▾

BEST PRACTICES ▾

LINKS

TRAININGS

EUROPEAN FORUM FOR GEOGRAPHY AND STATISTICS

EFGS promotes spatial statistics built on well integrated geography and statistics

[Introduction to Spatial Statistics](#)

www.efgs.info

Guidance > GSGF Europe: Information Service

GSGF Europe: Information Service

PDF & Excel

Methodology

Methodological guidance

Requirements and Recommendations

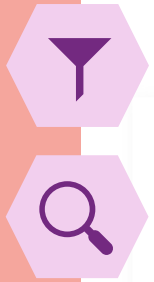
Two-level filters

Use cases, Tools & Business cases

More than 50 resources

Terms and definitions

Glossary



Roadmap to consult the materials

Regional Workshops (2026)

Statistics Portugal 15-17 April



- > **Institutional collaboration** and cooperation models for **geospatial data** management (national and international);
- > Business cases from the **internal geospatial infrastructure and geocoding** (e.g., geocoded buildings, address data, geosampling, etc.)
- > **Organisational interoperability** (Geospatial in the in-house Statistical Production Process Manual)

Statistics Spain 26-28 May



- > **Authoritative geospatial data** in statistical production (geospatial data supply chains to NSIs)
- > Use cases on **location-centred architecture** and internal environments to geospatially enabled statistics
- > **Business cases:** Geocoded Address Framework; Online Population Register; Agricultural Census
- > **Dissemination solutions** (web, AI-assisted, OGC API)

Czech Statistical Office 22-23 October



- > **GIS** in statistical production - **reference documentation**
- > **Geospatial statistics** in GSBPM (streamline organisationally geospatial data)
- > **Geocoded business, population and agricultural microdata** (geocoding)
- > **Geoportal** and **GIS data portal** (processing and dissemination)

Thank you for your attention

Ingrid Kaminger (Statistics Austria), ingrid.kaminger@statistik.gv.at

Rossano Figueiredo (Statistics Portugal), rossano.Figueiredo@ine.pt

Linus Rispling (Statistics Sweden), linus.rispling@scb.se

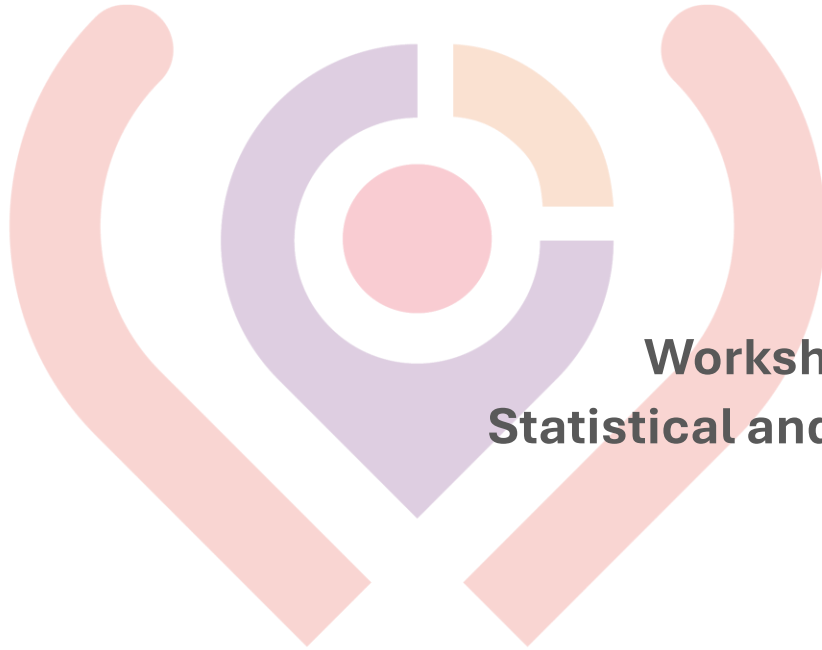


For more information about the GSGF-CARE, please contact the project coordinator:

Rina Tammisto (Statistics Finland), rina.tammisto@stat.fi



Co-funded by the
European Union



Workshop on Strengthening Integration of Statistical and Geospatial Information in Europe

Deep Dive – GSGF Session

Ingrid Kaminger, Statistics Austria

Rossano Figueiredo, Statistics Portugal

Linus Rispling, Statistics Sweden

12 February 2026 | Vienna, Austria