

EUROPEAN FORUM FOR
GEOGRAPHY AND STATISTICS



GSGF Europe in the “Geospatial Situation Room”

UN-GGIM: Europe Webinar

**United Nations Geospatial Network Data Hub:
One UN Geospatial Situation Room**

15 November 2023

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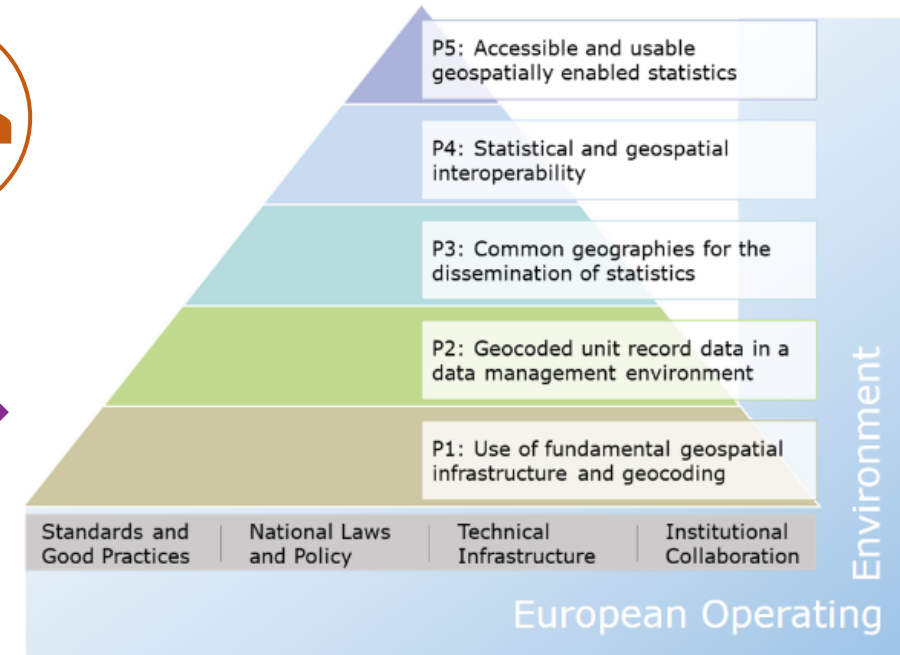
Content

- GSGF Europe
- Requirements and Recommendations
- Emergency response and scenarios
- Key remarks and recommended actions

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GSGF Europe

GSGF Europe



GEOSTAT 3: GSGF Europe (Implementation Guide) + Testing the framework to calculate SDG indicators (11.2.1; 11.3.1; 11.7.1)

GEOSTAT 4: GSGF Europe (enhanced version) + More guidance and methodological materials

GSGF Europe

Within the European Operating Environment



Principles and Key Elements

GSGF Europe Reference Architecture:

- Data and Information
- Services
- Processes
- Actors and Roles



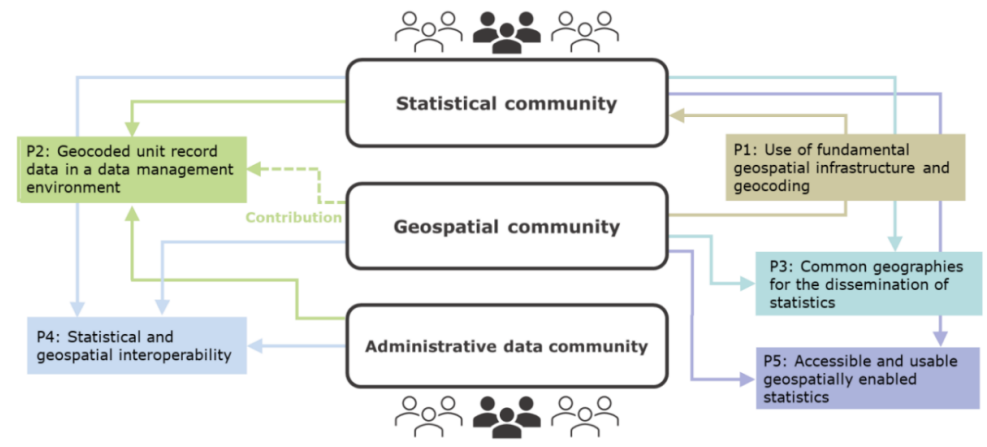
**Systematic
approach**

Topics for Future Enhancement:

- Quality
- Data Collection
- Confidentiality
- Innovation

Surrounding Frameworks on which the GSGF Builds

GSGF Europe User Guide



7.4 Reference Architecture

Abstract: Effective collaboration starts by ensuring that the statistical and geospatial communities can share the same view of their operating environment and that they discuss the same concepts on common ground. Only then can solutions be built on the same common conceptual and theoretical base. In addition, a reference architecture approach will help to translate the vision into implementation strategies and priorities in a consistent and systematic way and clearly show how the various components and organisational roles fit together. To support this, the first steps have been taken in describing the GSGF Europe Reference Architecture.

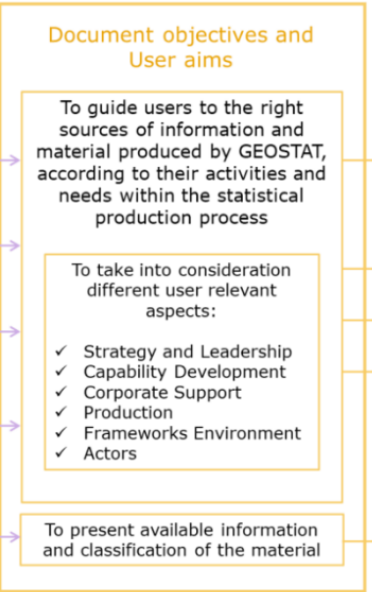
Purpose: The GSGF Europe Reference Architecture aims to act as a template for statistical organisations in the development of their own geospatially enabled enterprise architectures. It provides a common framework incorporating geospatial frameworks, standards and processes in a consistent manner, in order to produce geospatially enabled data and statistical services. The first version of the Reference Architecture describes the actors, roles, processes, services and concepts.

Reference: GEOSTAT 4, 2022. GSGF Europe: Reference Architecture. Eurostat ESSnet grant project GEOSTAT 4, 2019-2022. ([here the link to the material available in the Information Service](#))

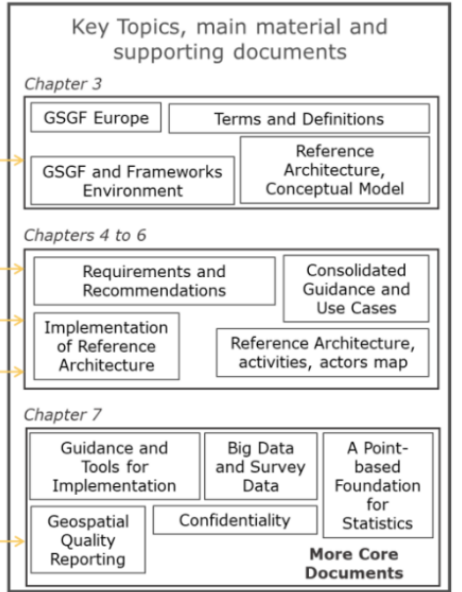
How to read the User Guide?



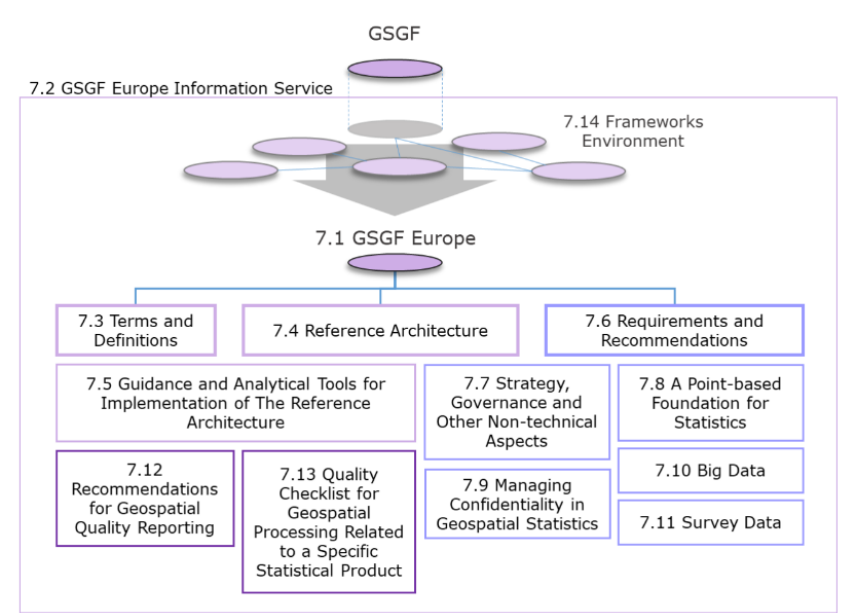
What is the purpose?



What to look for?



Core outcomes



GSGF Europe: GEOSTAT Information Service

GSGF EUROPE

GSGF Europe adapts the global GSGF to the European statistical and geospatial operating environment + Surrounding Frameworks on which the GSGF builds



USER GUIDE

The User Guides introduces all the material produced in the series of GEOSTAT projects and compiled in GEOSTAT 4



GEOSTAT INFORMATION SERVICE

Information services enable users to navigate the large volume of guidance material produced by the GEOSTAT 4 project

METHODOLOGY



REQUIREMENTS AND RECOMMENDATIONS

USE CASES, TOOLS & BUSINESS CASES



TERMS & DEFINITIONS

LIBRARY

Library or repository of all documents produced by GEOSTAT 4 available to download

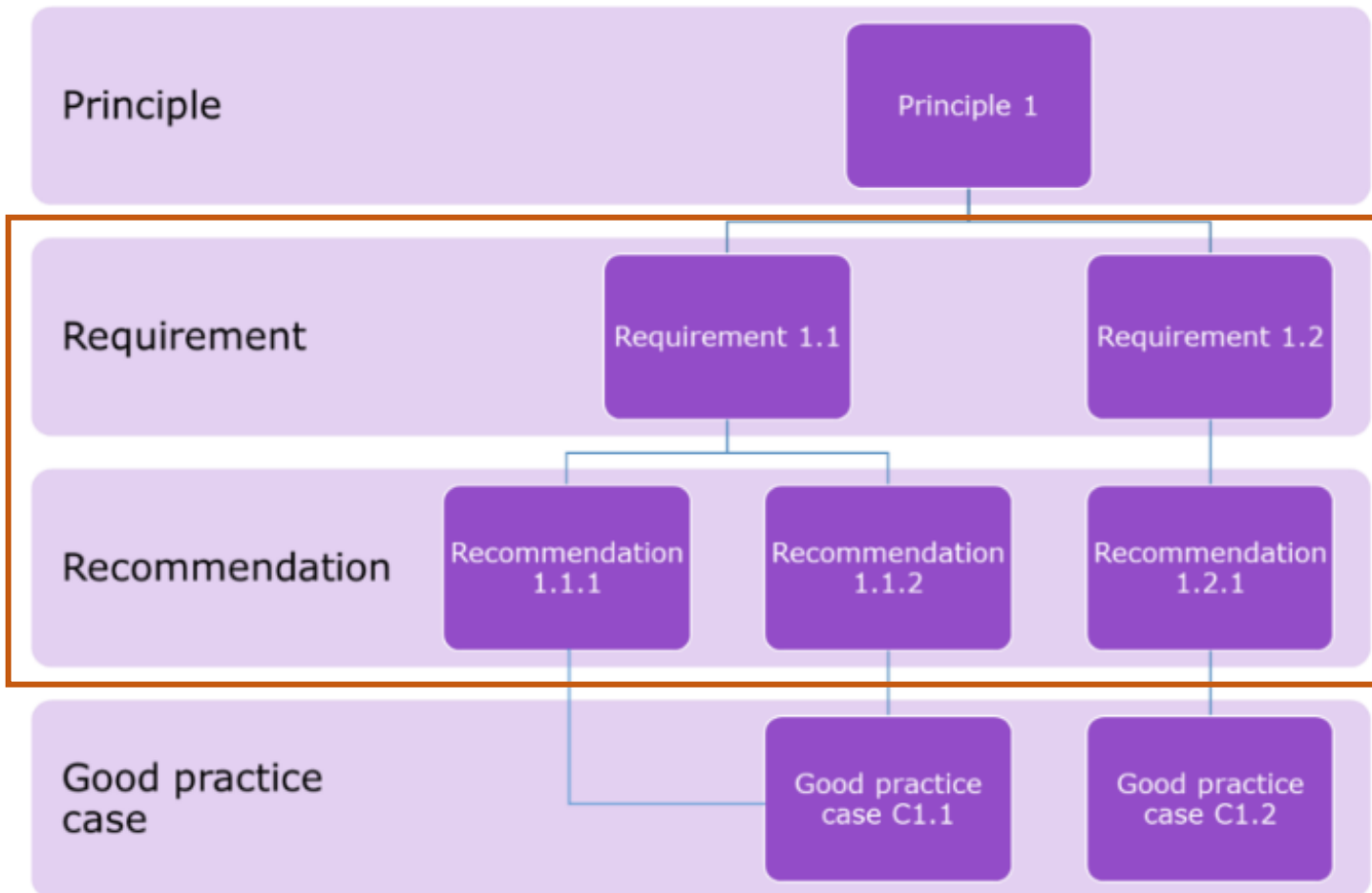


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Requirements and Recommendations

GSGF Europe

Requirements and Recommendations



WHAT?

HOW?

- Breaks down the GSGF Europe into small, concrete and manageable pieces > **top-down approach**
- Can be used as a roadmap to assist organisations in implementing the GSGF Europe in a systematic and consistent way
- Can be used as a basis for self-assessment



GSGF Europe

Requirements and Recommendations

	GSGF Principles					
	Total	1	2	3	4	5
Requirements	18	3	5	2	4	4
Recommendations	66	12	20	9	13	12

Interoperability
requires holistic
standardisation

GSGF Principle	Requirement		Recommendation		
	Nr.	Name	Nr.	Name	Description
P 1	1.1	Use data from National Spatial Data Infrastructures	1.1.1	Use authoritative and INSPIRE compliant geospatial data and services	Any geospatial information used to geospatially enable or display statistical content (for geocoding), or to produce statistical content, should preferably be built on data and services.
P 1	1.1	Use data from National Spatial Data Infrastructures	1.1.2	Implement unique identifiers and lifecycle information	Following INSPIRE and UN-GGIM: Europe Core Data specifications, the use of information is recommended, in order to describe the temporal characteristics (between versions). Use of unique and persistent identifiers and lifecycle information time and space, thus facilitating integration of geospatial and statistical information.
P 1	1.1	Use data from National Spatial Data Infrastructures	1.1.3	Define roles and responsibilities of organisations involved in production of geospatial information	The different roles and responsibilities of various organisations involved in production of geospatial information should be defined through formal protocols, agreements and Memorandum of Understanding. The custodian and identify the most relevant stakeholders for a geospatial data source. MoU co-ordinates statistical integration within the design and production of statistical indicators for modernisation and harmonisation of concepts and methodologies, bearing in mind the need for consistency and interoperability.
P 1	1.1	Use data from National Spatial Data Infrastructures	1.1.4	Establish common geospatial reference data repositories within National Spatial Data Infrastructures	The NSDIs must establish a reference data repository building on relevant, as the use of open data, in order to help both public and private sector to ensure consistency and interoperability.

5.1 Implement clear and simple data licensing policies
5.2 Use service-oriented data portals supporting dynamic integration of data
5.3 Define clear national and European rules to ensure protection of privacy
5.4 Facilitate data search and use through cataloguing and improved guidance

P5: Accessible and usable geospatially enabled statistics

4.1 Improve geospatial workflows within statistical production
4.2 Enable data integration through consistent semantics and concepts across domains
4.3 Publish data once and leave them at their source to be reused many times
4.4 Increase use of services and semantic web technology to enable innovation in a wider data ecosystem

P4: Statistical and geospatial interoperability

3.1 Set up and maintain a consistent framework of national statistical and administrative geographies
3.2 Consolidate use of existing statistical grid systems and explore the potential of evolving global grid systems

P3: Common geographies for the dissemination of statistics

2.1 Build an effective and secure data management environment
2.2 Include a geospatial aspect in organisation's enterprise architecture
2.3 Ensure consistency and quality of geocoding results
2.4 Use point-of-entry validation in collection of administrative or statistical data
2.5 Define common data quality frameworks taking into account spatial and temporal consistency

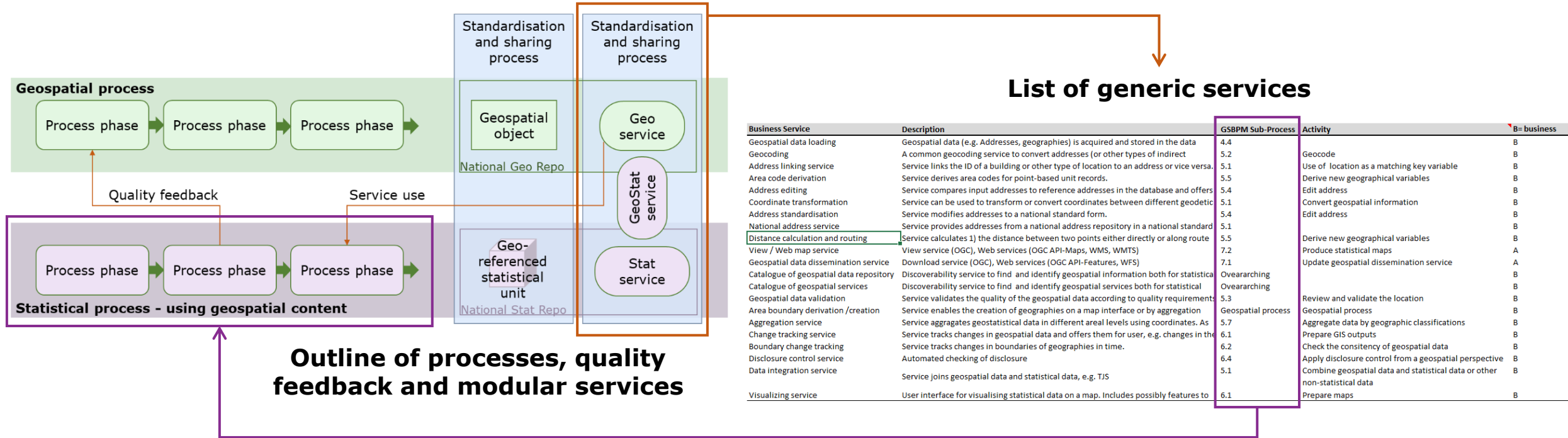
P2: Geocoded unit record data in a data management environment

1.1 Use data from National Spatial Data Infrastructures.
1.2 Use point-based reference data for geocoding.
1.3 Build formal working relationships on institutional agreements.

P1: Use of fundamental geospatial infrastructure and geocoding

GSGF Europe for SDG indicators

PROCESSES (GSBPM and GeoGSBPM) AND SERVICES GSGF Europe Reference Architecture



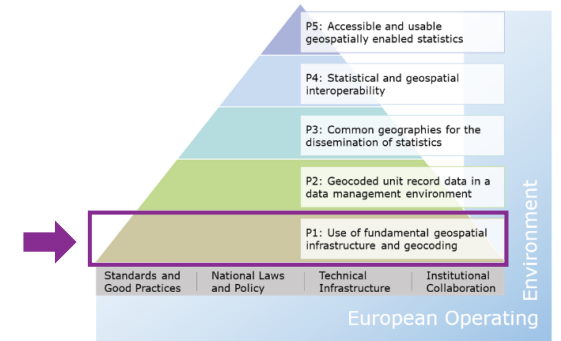
Geo-enabling statistics: Shared national statistical-geospatial production ecosystem
Statistical processes depend on **geospatial processes**
Modular services to run efficient statistical-geospatial processes (automation)
+ Data and Information Model and Actors & Roles

GSGF Europe for SDG indicators

Requirements and Recommendations

linked to GSGF Principles and different core activities of organisations

Requirement	Recommendation	Strategy and leadership	Capability development	Corporate support	Production
Use data from National Spatial Data Infrastructures	1.1.1				
	1.1.2				
	1.1.3				
	1.1.4				
	1.1.5				
Use point-based reference data for geocoding	1.2.1				
	1.2.2				
	1.2.3				
	1.2.4				
Build formal working relationships on institutional agreements	1.3.1				
	1.3.2				
	1.3.3				



Define roles and responsibilities of organisations involved in the production of geospatial information (*Governance and Institutions*)

Provide authoritative point-based geospatial reference data for geocoding (*Business Processes & Data and Metadata*)

Share knowledge and experience across communities at the national level (*Governance and Institutions & Methodology*)

Set up formal agreements concerning access, licensing, governance and use (*Governance and Institutions*)

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Emergency response and scenarios



Need to know:

- Where do people live? Where are they now?
- Who are affected (elderly, children, vulnerable)?
- Location of economic activity and companies?
- Critical and vulnerable activities and infrastructure?

Wildfires



Västmanland wild fire

- On July 31-September 11 (2014)
- National emergency declared
- 15 000 hectares destroyed
- 1 death
- Worst wildfire in Sweden since the 1950s

Lägesbild 2014-08-22

Municipality 2

Teckenförklaring

- Kommungräns
- Öppnad väg med begränsning 140822
- Brandområdets utbredning 140815
- Avspärrat område 140815

Municipality 1

Stoppförbud
Max 60 km/h

Observera att gränser för brandutbredningen inte är exakta.

Hastighetsbegränsning 60 km/h samt stoppförbud på väg 668 inom brandområdet.

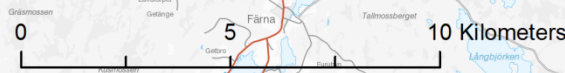
20 km

Municipality 3

Municipality 4



MSB
Myndigheten för samhällsskydd och beredskap



Bakgrundskarta: © Lantmäteriet

Floods and cloudbursts



Extreme flooding/ cloudburst scenario

City of Gävle
People affected:
5%
Employees
affected: 16%

**Precise
location of
people and
workplaces**



This story is about the need for:

- Ability to link data to accurate and high-precision spatial location (point-based foundation)
- Use of administrative data to enhance temporal resolution
- Flexible production systems to support a rich variety of outputs (spatially and thematically) at low costs and with short production time
- Urgent response!





**Key remarks and
recommended actions**

Key remarks and recommended actions



- Implementing GSGF Europe provides robust and flexible conditions for a variety of purposes/policy contexts, i.e. **statistical-geospatial data integration “swiss knife”**
- Tailored solutions (single-purposes) can be quicker and less sustainable in the long run
- List of **Requirements and Recommendations (GSGF Europe)** for a consistent approach towards standardised geospatial statistics



- **National fundamental geospatial data themes** and other **cross-cutting data domains** relevant to sustainable development and global/regional policy frameworks
- **Institutional agreements** between NSI and NCMA for easy access to authoritative and high-quality geospatial data and knowledge/experience exchange

Key remarks and recommended actions



- **Organised geospatial infrastructure** within a national digital infrastructure (NSDI) to avoid direct/duplicated data collection/acquisition and promote the reuse and exchange of data
- Streamline and standardise the **business processes and services** for the production of geospatial statistics > **interoperability (multi-dimensional and location)**
- Reference framework of **common geographies** for dissemination and common understanding of (dis)aggregation methods, methodological approaches and terminology
- Technical/technological solutions for **automated data integration processes** (GKI vision)
- In-house **geospatial capacity building and capability development** within NSI (e.g., training initiatives on EO data and technology)

Thank You!

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🔍 <https://www.efgs.info/gsgf-europe-geostat-information-service/> - GEOSTAT Information Service

