

UN-GGIM Europe - Workgroup 2

FOCUS POINTS DIVIDED INTO CATEGORIES

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Change Summary

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FOCUS POINTS DIVIDED INTO CATEGORIES

Develop a national, regional and global strategic framework for geospatial information

Focus point 1: Development of a Quality Framework for geospatial information (QFGI) in analogy with the Code of Practice for the European Statistical System

Current Situation

The Code of Practice¹ (CoP) of the European Statistical System (ESS) sets the standard for developing, producing and disseminating European statistics. It builds upon a common ESS definition of quality in statistics and targets all relevant areas from the institutional environment, the statistical production processes to the output: European official authoritative statistics.

The CoP sets out 15 key principles of European official statistics under which national and EU statistical authorities operate. A set of indicators of good practice for each of the 15 principles provides a reference for reviewing the implementation of the Code.

The code of practice is often accompanied by other international and national frameworks. For example, for Statistics Sweden as an independent National Statistical Institute the following four ethical frameworks apply:

1. European Code of Practice (Eurostat);
2. UN Fundamental Principles of Official Statistics;
3. International Statistical Institute – Declaration on Professional Ethics;
4. Swedish Statisticians Association – Ethical codes for statisticians and statistical work.

Most of the principles of the CoP are also applicable to the collection of other types of public, authoritative data including geospatial information. For instance the Council of European Geodetic Surveys (CLGE-GE) has published a Code of Conduct for European Surveyors². Many NMCAs have already implemented ISO 9000 Quality Management for their organisation and also applied other quality management principles like the EFQM Excellence model.

ISO TC 211 has published a Technical Specification (TS) ISO 19158 Geographic Information- Quality Assurance of Data Supply. This TS is targeted for ensuring that quality requirements of the organization and the data supply processes are met. It applies the ISO 9000 and ISO 19157 Geographic Information - Data Quality principles.

For the European Union, the INSPIRE and the PSI directives lay down some basic principles for data sharing, access, and harmonisation, further underpinned by the G8 Charter on Open Data.

However, at present there is no uniform quality framework for European geospatial information and European NMCAs which could be regarded as comprehensive as the one for statistics. A quality framework that complements existing European and international activities in this area is a fundamental prerequisite for increasing the user-base of spatial information.

¹ http://epp.eurostat.ec.europa.eu/portal/page/portal/quality/code_of_practice

²

<http://www.clge.eu/documents/events/CLGE%20GE%20Code%20of%20Conduct%20for%20European%20Surveyors.pdf>

A role for UN-GGIM Europe?

The development of a Quality Framework for geospatial information should be underpinned by a legal framework, in analogy to European Union legislation on statistics, notably the regulation EC 223/2009, establishing a legal framework for European official statistics.

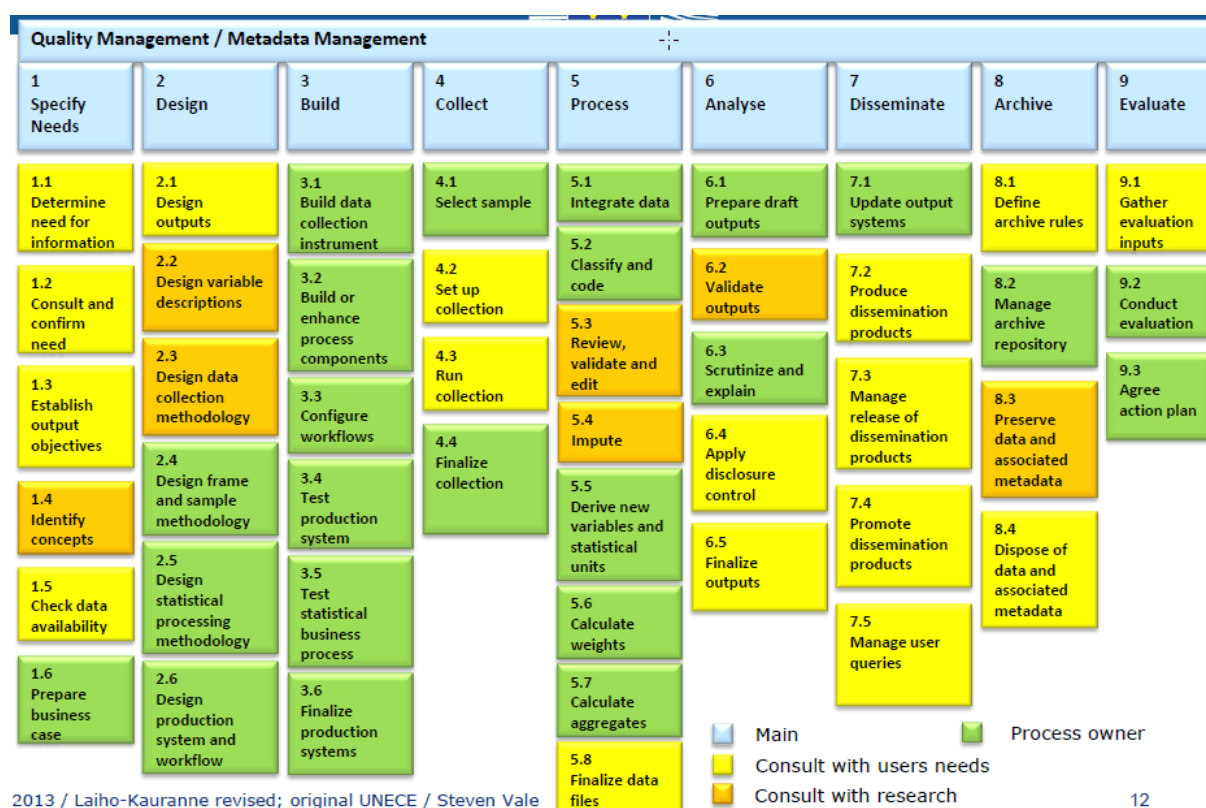
INSPIRE, the PSI directive and the G8 Open Data Charter and ISO standards could be seen as starting point of a process leading to the formulation of a binding European Quality Framework and a corresponding legal framework. The review of the INSPIRE Directive, which starts in 2014, offers an important opportunity. The European Location Framework (ELF) and the EU Location Framework (EULF) also deal with aspects that are relevant in this area, and their findings should be taken into account.

In a first step, UN-GGIM Europe should initiate a study which establishes an inventory of national quality frameworks for authoritative geospatial information and national or European legal acts in the area of geospatial information. Building on this inventory UN-GGIM Europe may propose a first set of common principles. Examples of these common principles include the definition of basic quality requirements and certification principles. Stakeholders of the ELF and the EULF projects should strive to include related work in the scope of the work and propose a set of legal requirements to be regulated under national or European law.

Focus point 3: Integrate the statistical component into the geospatial framework

Current situation

The European Statistical System (ESS), is already providing a vast amount of georeferenced statistics, mainly regional statistics on NUTS-levels. There is however a demand for more detailed information³.



³ E.g the European Commission publishes Cohesion reports with a wealth of detailed regional comparison studies.

At the operational level the international statistical community has adopted the Generic Statistical Business Process Model (GSBPM) as a standard to describe the production process of official and recent developments (e.g. in the GEOSTAT⁴ project) aim at incorporating location aspects into all stages of this process, and not only at the level of outputs. This requires that statistical experts work closely together with geospatial experts in the definition of each statistical production process from the beginning of the planning phase. On the product side, statistical micro-data are often aggregated to various territorial classifications. Besides administrative and functional areas, grid systems are popular, mainly in Europe. That is why the two INSPIRE themes which are most closely connected with statistics (Statistical Units and Population distribution/Demography) promote the use of grids as an important territorial unit. Statistical information increasingly comes from administrative data or registers. By linking these data to a geospatial reference framework, geocoding can be established at the individual record level and later territorial aggregations become a natural and straightforward production process.

It is essential that the geospatial information used to reference statistics meets several conditions: (i) it must have the right resolution, (ii) it must have the necessary scope of attributes, (iii) it must be updated in a regular, defined way, and (iv) the access to the data must be as easy as possible. It must be noted that access to geospatial information at the detailed level is in many countries subjected to national legislation which sometimes produces difficulties from legal, economical and technical aspects. National data pools fed by all producers and funded by all users seem to work well and give mutual benefit. As the INSPIRE directive includes data sharing as one important aspect, this co-operation is likely to increase within the EU.

At the organisational level, the European Forum for Geostatistics (EFGS)⁵, a cooperation of National Statistical Institutes (NSI), has been dealing since 2005 with the integration of official statistics and authoritative geospatial information. The EFGS has been a main contributor to the ESS GEOSTAT projects which created a European population grid from census information. The EFGS is the leading European expert group for users and producers of official, high resolution georeferenced statistics. Yet, while open to all experts dealing with sustainable development as producers or users of geospatial information and georeferenced statistics, the participation from NMCAs has been relatively low. The same is true for the GISCO working group, the official body of the ESS for the cooperation of NSIs and NMCAs.

A role for UN-GGIM Europe?

The ambition of UN-GGIM Europe should be to incorporate statistical and geospatial information in a comprehensive information framework supporting sustainable development, whereby statistics describes the human societies and the 'What' and 'When' of our activities and geospatial information then describe the physical environment and the 'Where'. To be as flexible as possible, statistical information should be associated to a location at the most individual level of the observation, in most cases a point.

The geospatial and statistical communities should propose joint projects to advance the integration of the two information domains and build operative information systems. A comprehensive geocoding of the next European round of censuses 2020/2021, based as much as possible on geocoded registers has been identified as such a project. A population and housing census typically is one of the largest public information operations, mobilising a great deal of resources and hence often

⁴ http://epp.eurostat.ec.europa.eu/portal/page/portal/gisco_Geographical_information_maps/geostat_project

⁵ www.efgs.info

represents the opportunity to change established systems. Thus, the Census operation represents an ideal flagship project for the cooperation of the two communities. Nevertheless, other statistical topics, for instance transport or land use should also remain on the agenda, ideally based on registers or administrative data.

At the operational level the design, planning and implementation of joint projects should be supported by a permanent European expert group like the EFGS, supporting UN-GGIM Europe and at the same time contribute to a similar expert group at the global UN-GGIM level which has been created recently. NMCAs should increase their involvement in EFGS and in general participate more in joint NSI, NMCA activities.

At the strategic level a steering group composed of senior managers of NSIs, NMCAs, UNECE and Eurostat should form under the UN-GGIM Europe umbrella and draw up a road map for the integration of location aspects into the census, including the formulation of European and national legal requirements.

Box 1:

In **Germany**, until recently existing specialized information has in many cases been stored only in connection with a direct spatial reference (as for instance addresses). In the course of various talks with representatives from different federal departments it became apparent that geospatial information is increasingly utilized for statistical analyses. With its E-Government-Gesetz (EGovG) (E-Government Act) the Federal Government has imposed and specified the georeferencing of registers. It is stipulated that now also the coordinates are supplemented (with other data) in registers.

Establish best practices in institutional arrangements, legal and common frameworks

Focus point 5: Impact Analysis of the implementation of INSPIRE, e.g. on the use of geospatial information by administrations and citizens

Current situation

The Infrastructure for Spatial Information in Europe, INSPIRE⁶, is a series of European and national legal acts and agreements and their implementation, that, when fully implemented by 2020, will lead to a European-wide spatial data infrastructure. INSPIRE covers data sharing as well as technical arrangements to achieve interoperability and harmonization of spatial data and services. Affecting 30 countries and 23+ languages, it is the single largest effort of its kind in the world.

Conceived for environmental policies and policies that affect the environment, INSPIRE is truly a multi-purpose infrastructure. Studies are being conducted to assess the adaptability of INSPIRE to other policy areas as well. A number of data themes defined by the Directive play an important role in this context as they serve the purpose of reference data, to which other information can be linked.

INSPIRE as a process, but also as a framework for legal, organizational, semantic and technical interoperability, is widely regarded as a best practice. Not only are EU neighbouring countries such as Turkey and the Ukraine carefully considering what INSPIRE can offer, also countries in other regions of the world are doing the same (Australia, Latin America, India).

⁶ <http://inspire.ec.europa.eu>

To support the implementation in the Member States and the maintenance of the legal acts and accompanying Technical Guidelines, the **INSPIRE maintenance and implementation group (MIG)** and INSPIRE pool of experts have been set up.

With the above in mind, the 2014 policy review of the INSPIRE legislation – which is foreseen as part of the INSPIRE Directive – will be an important occasion for UN-GGIM Europe to follow closely what works well in INSPIRE, and what needs to be improved. The INSPIRE mid-term policy evaluation project will bring insights into whether INSPIRE is meeting its initial targets, where INSPIRE stakeholders see opportunities and challenges in the INSPIRE implementation.

This will be supported by the efforts of the EEA that, as member of the EC/EEA INSPIRE Team, coordinates the monitoring and reporting on INSPIRE implementation in the EU member states. The country reports – which are available in national language and are translated into English where needed – provide a self-assessment of various aspects (coordination and technical infrastructure, quality assurance, data provision and usage, data sharing arrangements and cost-benefit aspects) by the countries.

The policy review project may lead to recommendations for improvement which will be described in the policy review report that the European Commission will submit to the European Parliament and Council. These recommendations may then be used to define a follow-up action plan, which can contain a roadmap for proposals for new legislative measures if any.

This, along with other activities that relate to the maintenance, implementation, and evolution of INSPIRE, will be informative for the international community.

A role for UN-GGIM Europe?

In this context, possible roles of UN-GGIM Europe could include:

- help identifying evidence as to how investments in the use of geographic information and services can foster innovation in both public and private⁷ sectors,
- assess which additional measures would be needed in order to increase the user-base of INSPIRE (harmonisation at EU level, etc.),
- Capacity building in other areas of the world who want to adopt parts of INSPIRE.

⁷ http://www.smespire.eu/wp-content/uploads/downloads/2013/10/smeSpire_WorkshopsReport.pdf

Box 2:**INSPIRE country stories**

While INSPIRE implementation is still in its early phases in many countries, there are already a number of success stories, including implementation by the Environment Agency in England and Wales, which reported a GBP 5 million saving in environmental risk reduction through the implementation of INSPIRE.

Following an impact assessment of the cost and benefits, the Danish government has launched a basic-data initiative⁸ as part of the Danish eGovernment strategy (2011-2015). The principles underlying the basic data initiative are directly inspired by the INSPIRE principles. In addition, the INSPIRE Annex I themes have been used as a starting point for the appointment of geographical data that are to be part of the basic data initiative, and guidance on how to use the INSPIRE data models for the basic data is available⁹.

At the end of 2012 the Netherlands formulated an INSPIRE implementation 'strategy' until 2015. It demarcates the shift from a supply perspective to a use perspective. With the legally binding requirements as the minimum implementation, a national development connection is established between the new Environmental Planning Act (Omgevingswet) to experiment further with the 'use side' of INSPIRE and other spatial information. The Environmental Planning Act is a bill aiming to renew the regulation of human activities with an effect on the physical environment. It will replace about 15 existing acts of parliament either entirely or partially, and will incorporate the location-based components of eight other acts. One of the principles in drafting the Act was to align it with EU legislation, for instance on noise, catchment area management, flood management, water management in general and nature management.

In Spain, INSPIRE has driven the updating of legal framework (Law 14/2010) related to the production and diffusion of geographical information. This new legal framework has led to the establishment of key components such as the "Spanish Gazetteer Model" (MNE)¹⁰, the "Spanish Metadata Core" (NEM) or the "Spanish Model of Addresses".

Focus point 7: Creation of a best practice/knowledge database on spatial analysis projects**Current Situation**

We know that there is a wealth of information across Europe and the rest of the world relating to the use, analysis and management of geospatial information and yet we still continually find wheels being reinvented as countries seek to create their own spatial data infrastructures. The issue they struggle with is a difficulty in discovering and accessing useful information in a timely way. There is a myriad of sources, some of which are gathered together in thematic or regional repositories or portals, but there is a lack of consistency in how this is done or any sort of 'roadmap' to assist in finding relevant information. GGIM has identified, in their

⁸ Read more about the initiative in the publication "Good Basic Data for Everyone – A Driver for Growth and Efficiency". http://www.digst.dk/Home/ServiceMenu/English/Digitisation/~media/Files/English/Grunddata_UK_web_05102012_Publication.pdf

⁹ <http://www.digst.dk/Loesninger-og-infrastruktur/Grunddata/Projekterne/~media/Files/L%C3%B8sninger%20og%20infrastruktur/grunddata/Datamodel/UKAST%20Modelregler%20for%20grunddata%20version%201-0-0.pdf>

¹⁰ http://www.diba.cat/documents/429764/429801/idebarcelona-fixters-pdf-normativa-es_mne-pdf.pdf

Inventory of Issues¹¹, the need for a resource centre, or global knowledge base. This has been carried forward to the Focus Points for a future UN GGIM Europe but with a specific focus on a best practice/knowledge database of spatial analysis projects. The reason for this focus is that it is important to show some concrete progress in one particular area rather than try to tackle a huge task of listing and organising such a large quantity of knowledge. It is also an area which spans the geospatial and statistical communities.

The current state of play in this particular area is varied and rather unclear. Within the European institutions and bodies, activities are on-going to establish synergies between activities. For instance, the Commission and the EEA have established 'Environmental Data Centres', ESTAT maintains an overview of spatial assessment projects, and JRC maintains on the INSPIRE Forum a list of relevant EU-funded projects. EuroGeographics has a INSPIRE Knowledge Exchange Network, and a number of EU-funded projects are contributing to identifying and sharing knowledge in the domain of spatial data management (e.g., smeSpire.eu, Body of Knowledge, etc.).

A lot more may be happening at national or regional level but we are not aware of any portal or knowledge base that would contain a comprehensive list of spatial analysis projects or their outputs.

A role for UN GGIM Europe?

The situation is one in which there is probably plenty of knowledge, but a relative lack of organisation of that knowledge beyond the major repositories such as the Commission Data Centres. Therefore further collection of knowledge would appear to be unnecessary, although harmonising access to existing knowledge could greatly help Member States both in Europe and globally. There could be a role here for GGIM Europe initially to research further to identify other national and regional repositories and consult Member States on potential requirements for tools which would assist users in locating data of interest to them and to explore and exemplify how it can be done across different communities. The end result would form an input to the wider GGIM Knowledge Base, along with any methodology developed to create it. As a starting point, the entry points to the most relevant knowledge organisation systems can be provided.

Existing sources of knowledge

The sources below are not specifically about spatial analysis projects. However, there is some knowledge on this topic within the wider knowledge sources.

EEA Data and Publications

<http://www.eea.europa.eu/>

EuroStat Data and Publications

<http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home/>

European Environment Information and Observation Network (Eionet)

<http://www.eionet.europa.eu/>

GeoStatistics wiki at 52 North

https://wiki.52north.org/bin/view/AI_GEOSTATS/WebHome

¹¹ <http://ggim.un.org/2nd%20Session/E-C20-2012-5%20Inventory%20of%20Issues%205%20July.pdf>

SDI resources from FGDC, GeoConnections and PC IDEA

https://www.fgdc.gov/international/sdi_cookbook

<http://geoconnections.nrcan.gc.ca/18>

http://unstats.un.org/unsd/geoinfo/rcc/docs/rcca10/E_Conf_103_14_PCIDEA_SDI%20Manual_Ago2013_ING_draft.pdf

Standards resources from OGC and OSGeo

<http://www.ogcnetwork.net/ogcpresentations>

<https://delicious.com/tag/ogcdoc/recent>

<http://live.osgeo.org/en/standards/standards.html>

The GIK Network from the GSDI Association

<http://www.giknet.org/survey/sdisurvey.php>

<http://www.giknet.org/depot/?search=1>

Group on Earth Observations (GEO)

<http://www.earthobservations.org/documents.shtml>

Build capability and capacity, especially in developing countries

There are no focus points for this category.

Assuring the quality of geospatial information

Focus point 12: Develop an agreed concept for the use of 'crowd-sourced' geospatial information (e.g. OpenStreetMap) in connection with authoritative data sets

Current situation

The past decades have seen changing modes of production and consumption of geospatial information. In particular, the ability of citizens to use new technologies to create and share data and information leads to an urgent need to re-examine notions like "authoritative data sets", and address challenges and exploit opportunities of the new "crowd-sourced" information. Given the heterogeneity of data and actors, UN-GGIM needs to identify the scope for its crowd-sourced geospatial data commitment. The reusability of shared data offers great potential, but also the challenge of bypassing traditional methods of access control and privacy safeguards, creating new situations for intellectual property rights, liability issues, and the possibility of unintended or even harmful reuse by third parties. Related to this issue is the question of accountability for private sector companies or public administrations who store crowd-sourced information. For example, public administrations increasingly rely on social media for communication, even during crises. Can the private companies, who provide these geo-social media networks and rely on the information to generate revenue, be required by law to provide reliable services and open data? Authoritative data

sets from cadastral and mapping agencies can help validate and verify crowd-sourced information, while at the same time benefit from increased update frequency and richer details. These opportunities require a high level of semantic, syntactic (technical), legal and organizational interoperability, where the ambition to have a common approach across Europe requires further exploration.

A role for UN GGIM Europe?

UN GGIM Europe could help address challenges to the utility of crowd-sourced geospatial information by addressing the following topics:

- Roles and actors (citizens, public sector, and the private sector have new roles that need to be defined and understood);
- Purpose, (policy) context intended use and reuse (the purpose for which a data item is created often influences its perceived and actual value by both producers and (re-)users);
- Data ownership/IPR/privacy
- Interoperability (different data management practices in relation to crowd-sourced geospatial information with regards to authoritative data sources may require measures to address legal, organizational, semantic, and technical interoperability);
- Completeness and positional/spatio-temporal accuracy (including inequalities introduced by social aspects);
- The necessity for a European crowd-sourced or Volunteered Geographic Information (VGI) Infrastructure.

Box 3:

In the context of a project of the World Bank, the agency for the land register in the Ukraine has used structured web forms to collect input from citizens to identify errors in the cadastral information. Based on the analysis of citizen-provided information, they identify priorities for improving the data.

Promoting data sharing, accessibility and dissemination

Focus point 14: Definition of technical requirements and open access conditions for geospatial information necessary for disaster prevention, management and response

Current Situation

Since 2012, the EU through the Copernicus programme provides satellite-based map products to authorized users active in the field of emergency management after disasters. The outcome products of the Copernicus Emergency Management Service (Copernicus EMS) consist of timely and accurate map information derived from satellite sensor data combined with in-situ reference data, which is mostly owned by EU Members States. The reference data is essential for the processing of satellite imagery and serves as a backdrop for the delineation and grading of results.

Almost all European countries have national infrastructures in place for granting access to georeference data from National Mapping and Cadastral Authorities (NMCAs). However, in many countries access to reference data is restricted due to licence conditions, and in some countries charges are applied. Activities in facilitating access to geospatial reference data from NMCAs to Copernicus services was organised under the framework agreement between the European

Environment Agency acting as Copernicus in-situ coordinator and EuroGeographics, the association of European NMCA's.

EuroGeographics produced an inventory of its members services, which showed that over 600 detailed national reference datasets and web services are in place, from which over 50% are already available via remote means (as WFS, WMS, WCS services or via FTP servers). In order to provide a consistent basis for free of charge access to available online authoritative geospatial reference data required by Copernicus EMS a joint letter from EEA and EuroGeographics was issued to all European NMCA's. It resulted in data access arrangements with over 30 member organisations of EuroGeographics which have been put in place and significantly improved access to authoritative geospatial reference data for the Copernicus EMS. In 2013 online services in 20 countries have already been made available to Copernicus EMS and the data were successfully used in a number of activations contributing to higher quality outputs.

From countries' perspectives the joint actions by European Commission (EEA, JRC) and EuroGeographics provides an efficient and low cost solution for securing free of charge access to countries' geospatial reference data as it makes use of existing technical capacities in countries and doesn't require any efforts from NMCA's other than providing access information to European Commission (JRC). The experience gained in arranging reference data by web services for GIO-EMS will be elaborated in European Location Framework (ELF¹²) project. The project aims to develop operational capacities including common licensing framework arranging up to date, high accurate, authoritative, interoperable, cross-border georeferenced information from NMCA's.

Finally, it must be noted that emergency response, for obvious reasons, usually operates under different rules from general licensing.

A role for UN-GGIM Europe?

Standardisation: The willingness of countries to agree to simplified terms under Copernicus EMS suggests that there is potential to develop common licensing terms in this area. UN-GGIM could promote the adoption of the principles underlying the provision of data to Copernicus EMS across all the countries of UN-GGIM Europe.

Coverage: The above experience could be built on to extend to cover all European countries and also beyond. The arrangement is for a limited set of disaster response situations, the broader disaster cycle needs to be covered.

Integrative approach: Dynamic and also statistical data could be especially useful to get a better understand about events, for example, hydrographical measurements, population statistics, extents of historical flooded areas, and land use.

Coordination amongst domains: Better coordination and harmonisation could improve overall in-situ data provision. For instance, there is a partial overlap in data needed for the emergency management and land services. Also, sharing of best practices of technical and organisational approaches combining spatial information across sectors would strengthen integrity and sustainability.

Embracing trends in information technology

There are no focus points for this category.

¹² <http://www.elfproject.eu/>

Promoting geospatial advocacy and awareness

There are no focus points for this category.

Partnering with civil society and the private sector

There are no focus points for this category.

Linking geospatial information to statistics

Focus point 16: Guidelines for use of geocoding in statistical contexts, such as surveys

Current situation

Geocoding describes a technique whereby information or an object is associated to a place, using indirect geographical location information. Depending on the data sources, the process step, and the desired output, and the aggregation level, different location information or indirect qualifiers might be used: via address, grid cell code, etc. Ideally the actual location information is kept separately from the statistical or thematic information and the link is established by means of key relationships.

The location framework should be the same across themes to provide for the integration of information from different sources and communities. In the statistical context address and building registers represent the most powerful framework for statistical observations at the individual record level, e.g. to an address point. Geocoding is particularly useful in setting up census type of statistical operations whereby the full statistical population is counted. Geocoding is also increasingly important for setting up the sample frame, e.g. to optimise the sampling operation. In terms of statistical outputs a hierarchical grid system represents a stable, neutral geocoding framework and has gained wide recognition among researches and spatial planners.

Geocoding in the statistical production process touches on the question of data sources, registers linked to addresses, the production process e.g. from the sample frame, anonymisation/security aspects, the dissemination of statistics and the access by research.

A role for UN-GGIM Europe?

Essential for geocoding for statistical purposes is a location framework, in most cases an address register which is often maintained by other public authorities. Most countries maintain some sort of geocoded address register, or even several. However geocoding by NSI is still often hindered by unfavourable access conditions (high fees, restrictive usage conditions), or by the diversity of such registers. UN-GGIM Europe should promote the creation of a single, official address register per country that takes on board the requirements from statistics and other thematic communities, and has favourable and affordable access conditions for public users. This requires the definition of clear responsibilities and maintenance workflows between various stakeholders and administrative levels. Ideally these official location frameworks should become part of the set of easily accessible core authoritative reference data of each country, and many successful examples already exist in Europe.

Box 4:

The **European Location Framework (ELF)** Project is creating a georeferencing service GeoLocator. This is based on the EuroGeoNames project that created the first gazetteer service for Europe based on official endonyms in collaboration with the UN Geographical Names experts. In addition the GeoLocator service will include addresses and administrative units. A first version of the GeoLocator Service will be available in 2015.

Box 5:

In **Spain** currently, various public administrations at different regional levels, and several companies, develop and maintain several databases of addresses. This leads to:

- Multiple efforts to obtain the information coming from different sources, and to update it;
- A lack of coordination, since the same address may be described differently in each database and have different update cycles;
- A propagation of errors in the existing addresses, especially when one does not go to the official source.

The creation and adoption of a single model for all organizations in Spain would allow to integrate better the territorial information of the various public agencies with jurisdiction in the definition of the various elements of an address. As a result each address would be unique.

Box 6:

In **Germany** the Federal Ministry of the Interior is responsible for the strategic orientation and development of e-government in Germany. The German law for the promotion of e-government, the E-Government Act (“Gesetz zur Förderung der elektronischen Verwaltung, E-Government-Gesetz – EGovG”), came into effect on 1 August 2013. Its aim is to facilitate electronic communication with the administration and to enable federal, state and local governments to provide simpler, more user-friendly and efficient e-government services.

The main provisions in the E-Government Act are, amongst others:

- Regulation for the supply of machine-readable data files by the administration (“open data”)
- Geocoding of registers with geospatial relevance

Geocoding has to be realized for:

- all digital registers
- which have a reference to the German national territory
- which have been newly created or re-engineered
- for which data has to be maintained according to federal regulations

Several geocoding and reverse geocoding services have been already developed by the Federal Agency for Cartography and Geodesy (BKG).

Focus point 17: Protocols and policies for exchange of geospatial and statistical data

Current situation

Statistical data are exchanged and disseminated in various formats but one established standard is SDMX which is increasingly adopted within Europe. This standard does not only contain the actual data but also provides a means for metadata and even structural data definitions.

INSPIRE on the other hand is the legal framework in Europe for sharing spatial information. It covers aspects such as the structure and scope of data as well as metadata and technical protocols of web services. So far, the semantic, syntactic, structural, and technical interoperability of the two data exchange frameworks has not been investigated. Both standards are based on XML and web services, though.

The lack of intra and even more so cross domain interoperability is not restricted to statistics or geography, but concerns also other information domains. The Asset Description Metadata Schema (ADMS) is a common metadata vocabulary to describe standards, so-called interoperability assets, on

the Web and is supported by the [EU's Interoperability Solutions for European Public Administrations \(ISA\) programme of the European Commission](#)¹³. Linked Open data is proposed as a solution to link data on the web that semantically belongs together, and the RDF framework proposes a technical solution for this. Important in this context are the ISA Actions the Re-usable INSPIRE Reference Platform (ARE3NA¹⁴) and the European Union Location Framework (EULF¹⁵) that JRC is leading in cooperation with other Commission Services and Member States Organizations.

Also at the level of meta-information, DCAT has been developed to describe information for open data portals using a harmonized vocabulary. This might be adopted by both statistics and geographical communities to map metadata at the most general level. Most, if not all, of these specifications are or will be adopted by the W3C which gives them the quality of a standard for the World Wide Web.

Table Joining Services have been proposed for the integration of statistics and geospatial information and for map creation. The OGC has developed a standard for this type of data integration and first studies by Eurostat and ELF are evaluating its fitness for purpose. Eurostat has also started looking into the feasibility of linked data, and the usefulness of the DCAT standard to describe both statistical and geospatial information.

A role for UN-GGIM Europe?

The United Nations Expert Group on the Integration of Statistical and Geospatial Information will reach out to the metadata standards groups in both the statistical and geospatial communities and identify interoperability obstacles. UN-GGIM Europe should support this work and make available expertise. Given the technical nature of this field it will be advisable to create a specific expert group for interoperability of metadata standards of web resources.

Focus point 20: Integrate the European Statistical System in the vision for a coordinated geospatial information management at the European level

Current situation

INSPIRE has been the first attempt in Europe to look at geospatial information management in a more comprehensive way and not to restrict geospatial information to core topographic data. However INSPIRE is restricted to the aspect of sharing of information on the environment and hence does not address various aspects of information management, including a definition of what type of information should be created in Europe.

Several initiatives to expand INSPIRE and to develop a more comprehensive location framework for Europe including the European Statistical System have been recently launched; notably ELF and EULF. In particular, the EULF has proposed a strategic vision for the establishment of a European Union Location Framework¹⁶. Both initiatives are in the initial phase and both promise to look beyond purely topographic information and stakeholders. Apart from these project-related attempts so far only minor efforts exist from the European geospatial community to also incorporate thematic aspects like statistics into their European coordination efforts.

¹³ <https://joinup.ec.europa.eu/asset/adms/release/100>

¹⁴ http://ec.europa.eu/isa/actions/01-trusted-information-exchange/1-17action_en.htm

¹⁵ http://ec.europa.eu/isa/actions/02-interoperability-architecture/2-13action_en.htm

¹⁶ http://ec.europa.eu/isa/actions/documents/isa-2.13_eulf-strategic-vision-lite-v0-3_final_en.pdf

Within the European Statistical System, there is a growing recognition for the importance of geospatial information for statistical purposes, and to produce the information required by policy makers and administration. The 2010/11 round of censuses has certainly been a game changer and therefore the upcoming 2020 round of censuses is already prepared in this spirit. However, more could be done and on request of the highest decision making body within the ESS, several expert groups at European level will now deal with this topic and will also aim at liaising with UN-GGIM. In addition, Eurostat will continue to launch projects that aim to advance the integration of statistical data and geospatial information at the national level and particularly encourage NSIs to cooperate with their national NMCA counterpart.

These cooperation projects will be supported by the EFGS which has not only substantially contributed to the GEOSTAT projects, but over the years has also created an active community of experts not only from NSIs but also from research and other data users. The EFGS considers the exchange of information between the statistical and geospatial community and the support to joint projects as one of its core activities, and e.g. organises annual conferences for discussions on best practices and networking between experts across borders and communities.

Despite all these promising efforts, it cannot be denied that both communities still very much work within their traditional boundaries and that a more holistic approach faces resistance from the mainstream within the organisations.

A role for UN-GGIM Europe?

UN-GGIM represents the first international initiative to systematically involve NMCAs and NSIs in a joint geospatial information management. The terms of reference of UN-GGIM and its origin from the UNSD reflect this. UN-GGIM Europe could create permanent structures that expand geospatial information management to other thematic communities, most notably statistics, and systematically involve other organisation than NMCAs in the governance of geospatial information management in Europe. It is vital for the success of UN-GGIM Europe that national coordination councils with all public authorities will be created for consultation of all stakeholders and discussion of GGIM matters in the widest sense. Only through this permanent and systematic consultation process, UN-GGIM Europe can claim to represent the geospatial community as a whole.

The official, governmental level representing each member state in UN-GGIM Europe should be supported at the technical and operational level by an expert group like the EFGS.

Many of the obstacles for a close integration are not so much of a technical nature but organisational or even legal, and their removal most likely require a push from the highest political levels that oversees both communities. Members of UN-GGIM Europe both from the geospatial and the statistical community, and UN-GGIM Europe as a whole should continuously highlight the importance of a coordinated geospatial information management and bring it on the agendas of the ministries in charge of statistics and authoritative geospatial information.