Fourth Meeting of the United Nations Expert Group on the Integration of Statistical and Geospatial Information (EG-ISGI)

9-10 November 2017
Statistics Sweden, Stockholm, Sweden

Introduction

The Fourth Meeting of the United Nations Expert Group on the Integration of Statistical and Geospatial Information (EG-ISGI) was convened in Stockholm, Sweden from 9-10 November 2017 and hosted by Statistics Sweden. The EG-ISGI meeting followed on from the joint UNECE/UN-GGIM: Europe Workshop on Integration of Geospatial and Statistical Standards, held from 6-8 November 2017, and also hosted by Statistics Sweden. The convening of these two technical statistical – geospatial integration meetings back to back was welcomed by participants and provided considerable opportunity to leverage the many synergies and commonalities that existed.

The EG-ISGI was attended by 29 participants from: Australia, Brazil, Canada, France, Germany, India, Japan, Mexico, New Zealand, Norway, the Philippines, Poland, Sweden, United Kingdom, and the United States, as well as by representatives from the Eurostat, UNSD, UNECA, UNECE, UNFPA and Esri. The meeting was Co-Chaired by Mr. Martin Brady (Australia) and Ms. Ana De Lara (Mexico).

The objective of the Fourth EG-ISGI was to create an opportunity to review and consider the recent (2016 and 2017) decisions of the United Nations Committee of Experts on Global geospatial Information Management (UN-GGIM) and the United Nations Statistical Commission (UNSC) relating to the Global Statistical Geospatial Framework (GSGF), the 2030 Agenda for Sustainable Development, the 2020 round of Population Censuses, and the activities and priorities of the Expert Group going forward. The meeting was conducted through a combination of presentations, updates and discussion sessions. The programme agenda of the meeting is provided in Annex I to this report.

Session 1 – Introductory Session

Chair: UN EG-ISGI Co-Chairs
Purpose: Update Expert Group members on progress and other relevant meetings.

Following welcome remarks and introductions by the EG-ISGI Co-Chairs and Statistics Sweden, the introductory session opened with a review and summary of progress since the last Expert Group meeting in Paris, 25-26 April 2016. Since that time, the Expert Group has seen the finalization and adoption of the five principles of the Global Statistical Geospatial Framework (GSGF) by UN-GGIM and the UNSC, side events and informal meetings by the Expert Group convened on the margins of the sixth and seventh sessions of UN-GGIM, a major Statistical-Geospatial Integration Forum during the 48th Session of the UNSC, WebEx meetings in May and September 2017, and the formation of five GSGF Principle Working Groups in order to progress the understanding and development of the GSGF.

Going forward, the Expert Group will continue towards the consolidation and implementation of the GSGF, capability building, knowledge management, and the interaction with existing, new and emerging global and regional bodies.

Pertinent observations by the Co-Chairs for consideration by the Expert Group included:

- While there has been strong engagement by statistical community for the GSGF, there is still a need to grow the engagement and understanding by the geospatial community.
- A need to communicate the GSGF – articulate the message.
- A need to follow through with the implementation of the GSGF, particularly with material to promote, support and explain the GSGF.
- Based on the recognized mandate and priority to implement the GSGF, there is a need for the Expert Group to take a practical approach towards prioritizing other suggested work program and topics.
- A request for more and expanded GSGF Principle Working Group participation.
- A need to interpret how to act on the new mandate from the UNSD and UN-GGIM to "become the overall coordination group for all activities in the area of the integration of statistical and geospatial information".

The Expert Group was then asked to consider what is the major issue we need to think about? The overwhelming response was: ***"How do we promote capacity building to enable the sustainable integration of statistical and geospatial information?"***

The discussion raised the following points (captured in order of inputs):

- The 2020 Round of Censuses, as a mechanism in itself, provides countries with some semblance of capacity building when actively engaging in their national census activities.
- The availability of funding for capacity building is presently mainly focused on SDGs. This can be leveraged in the context of using new data sources for the SDGs – and using geospatial information with statistics. Tying into the SDGs is important.
- The need to increase communication with decision makers – to use the GSGF as a means to do so.
- UNWTO looking at regional development from a data-centric view. May be able to provide some information about capacity building.
- The third EG-ISGI meeting agreed on a compendium of best practices, use cases, practices and tools. This is an entry point to develop capacity. For example, an area lacking in Africa is expertise and know how in disaggregation of data – in order to leave no one behind. Only one data point for an entire country is no longer practical when considering disaggregation.
- Recognizing that participation in the 5 GSGF Principle Working Groups is both encouraged and voluntary – the developing regions are not yet being seen in the process. How do they become better engaged? Can we see some regional representation, if not individual countries, in each of the Principle Working Groups? Agreed that regional representation was needed but active participation and contribution was also essential.
- It is important to emphasize the 2020 Round of Census and the SDGs – and the requirements for disaggregation by geographic location. The data required is considerable, as is the need to leverage capacity building efforts to build and sustain such new capabilities.
- Some Expert Group members have started geocoding their survey samples that are selected, especially for urban areas. By merging geographic and survey data, the indicators that are connected to this data frame then enable disaggregated levels to be considered. It was noted that in some countries this is only being used for survey-based data so far, not administrative; while for others geocoded administrative data is a significant resource.
- There is much capacity building being undertaken around the world by many actors at different levels of intervention. In this regard, there is a need to better understand what is going on and taking place. A great degree of coordination and collaboration among international bodies is need, as well as among national capacity building programs.

- It was noted that the SDGs will not be successful without a successful Census. The data from the Census is needed, as this is the only Census Round during the 2030 Agenda. In order to do this effectively the geography needs to be linked to the statistical data.
- With regard to the Census, talking to mapping agencies does not happen naturally for statisticians. There is a need to engage early, not at the last minute. Targeting the mapping agencies and statistical offices to collaborate and set programs up will be highly valuable. If we engage in technical assistance anywhere let's make sure we ensure good communication between the statistical AND mapping offices, as a minimum, involving other geospatially active organizations as appropriate.
- While Census partnerships tend to be country specific, there are some common partners, such as the World Bank; however, this varies from one country to another.
- Can we leverage support from international donors for demonstrating/messaging a common approach? How can a global view fit into a national context? Agreed that resource support from partners should be considered by Expert Group members and encouraged.
- However, we have limited time to explain and ensure engagement! Most important is to prepare very clear messages and recommendations to all countries. To collect all statistical data with xy coordinates! Census people think in different ways, and are often good at engaging; so they should be open to doing this. New technologies also enable this to be done. Can we prepare some common communication material? Agreed that materials relevant to the Census could be developed by collaboration amongst Expert Group member countries already active in capacity building.

In summary, many of the above issues come down to communicating the importance and value of integrating statistical and geospatial information and the GSGF as an enabling data integration Framework, for both the 2020 Round of Censuses and for the 2030 Agenda for Sustainable Development. Therefore, some immediate practical actions that can be taken by the Expert Group include:

- Provide an update to the UN-GGIM Expanded Bureau at its meeting on 1 December 2017. Make a statement about the importance of the integration of statistical and geospatial information, the GSGF – and their application to the 2020 Round of Censuses and the implementation of the SDGs. [Co-Chairs, USA and UNSD agreed to action]
- If engaging in any technical assistance and/or capacity building anywhere, ensure that the statistical AND mapping agencies are informed and, if possible, connected. [UNFPA and all EG countries engaged in 2020 assistance programs agreed to action]
- Prepare very clear messages and recommendations to all countries to collect all statistical data with xy coordinates. This can be done via digital communication and also at the UNSC in March 2018. [Co-Chairs, USA and UNSD agreed to action in UNSC report]
- Prepare separate generic information slide decks to demonstrate: the need for geospatial in the Census; and the need for and implementation of the GSGF. [Canada, Poland, USA, Sweden and UNFPA offered to take on this action]
- Consider if an update on the Geospatial for Statistics Handbook can be done? Can we do something simple? [UNFPA and UNSD to examine this action with guidance from Co-Chairs.]

UNECE/UN-GGIM: Europe Workshop on Integration of Geospatial and Statistical Standards
6-8 November 2017

The Expert Group was provided with a summary of the outcomes from the Workshop on Integrating Geospatial and Statistical Standards by UNECE. With more than 80 participants from over 30 countries and a range of regional and international organisations, the Workshop was aimed at experts on statistical and geospatial metadata or technical standards relevant to the modernisation of statistics, in addition to experts from national mapping, cadastral or environmental agencies. With a good balance of geospatial and statistics experts, the Workshop provided a unique opportunity to increase the collaboration between the statistical and geospatial communities, particularly with regard to technical models, frameworks and standards, their associated terminologies and crossover points. Relevant aspects of the Workshop can be summarised as follows:

Terminology

Terms include models, frameworks and standards. Models and frameworks are more generic and for many different contexts – such as helping countries to standardise and provide a benchmark. However, standards are more precise, defined, and not too generic – so they can be interpreted in a specific way without risk of misunderstanding.

Standards

Statistical models and frameworks are more conceptual, while geospatial standards are more technical. Important to build understanding between the communities and identify areas for common projects. Demand for information is growing. The two communities need to collaborate and can learn from each other.

Proposals for future work

- In the Generic Statistical Business Process Model (GSBPM) and the Generic Statistical Information Model (GSIM) reviews, consider how geospatial processes and information can be represented.
- Include statistics in the UN-GGIM fundamental data concepts.
- Greater collaboration on address and building registers.
- Consider common core metadata for geospatially enabled statistical data.
- Continue to communication and collaborate on materials to explain the different models, frameworks and standards across the two communities, using practical projects as the basis.

Collaboration across communities

- The geospatial and statistical communities have cooperated for many years.
- Both statistical and geospatial organisations provide information for better decision making. There are shared objectives and mandates.
- It is important to recognise these two points, but with the recent growth in demand for integrated data and greater insights and information, a higher level of understanding, coordination and coherence is required.
- It would be useful to understand the interdependencies between the communities – what are the gaps and overlaps. Both current and future activities would be considered when discussing this.
- International collaboration has real benefits. It should be supported through national institutional arrangements to ensure that the cooperation can continue to evolve. To collaborate effectively, there needs to be support from senior management and a followed up with a long term, sustainable commitment.
- It is important to be clear of the business requirements for collaboration. Common projects and use cases should be identified. The test beds in OGC can be used to test the use cases.
- Sustainable Development Goals are a key driver and opportunity for the communities to collaborate.

The geospatial and statistical communities have cooperated for many years, but opportunities and demands from technology, budgetary pressures and users are pressuring for better integration. Both statistics and geospatial share common objectives and mandates for providing information for better decision making. Both need more support and recognition from senior managers and government to undertake this job of integration effectively. We need to broaden involvement from other participants in our communities.

Proposals for future work:

- A pitch statement to present to senior managers and leaders to gain buy-in and funding
- A beginner's guide to using standards from both communities.
- Both communities to develop communication materials that simply describe the
- interrelationships between their frameworks, models and standards.
- Pilot to determine options for persistent ids to link aggregate statistical outputs to standard
- geographies.
- Look for opportunities to work on semantic interoperability issues (for example, ontology for
- addresses and buildings).

- Improve the discoverability of geospatial tools that are based on standards.
- Guidance on how to store geospatial objects references/links in existing statistical databases
- Map the data exchange process between statistical and geospatial organizations.
- Examine comparative use cases for application of traditional geography and emerging grid
- technologies, particularly for dissemination of statistics.
- Examine pathways and interest within Statistical Community to move to formal ISO Standards
- for models and frameworks in addition to existing ones (e.g. ISO/TC 154).

Next steps include to find owners for the activities. UNECE and the UN-GGIM: Europe will discuss mechanisms to progress collaboration at their meeting in Geneva in mid-November 2017. The biggest issues pertain to: partnership mechanisms, communication, people, and the need to work together.

All background documents, presentations and the final report for the Workshop are available on the website of the UNECE Statistical Division: https://www.unece.org/index.php?id=45404

The Expert Group strongly supported the outcomes of the workshop and noted the strong collaboration with the Expert Group and involvement of its embers. In the discussion that followed, the Expert Group debated if the lack of formally recognized statistical standards inhibit their adoption. Further, factoring in data interoperability, issues occur when data content items have the same name, but the content and metadata varies across countries. The Expert Group considered this a clear issue to be considered and discussed by the Statistical Commission.

The Expert Group also considered what role it could take in facilitating and supporting the proposals for future work and collaboration activities. The Expert Group agreed to examine the list of proposals and review what it can directly support, considering its other priorities to be considered later in the meeting. The Expert Group agreed to undertake the review by email and then discuss further via a dedicated WebEx.

The discussion concluded with the Expert Group agreeing to seek agreement and support from the Statistical Commission and the Group of Experts on the future work and collaboration activities identified at the workshop, and encourage international organisations and countries to contribute to these projects.

Session 2 – Overview of Expert Group efforts to promote awareness, capacity building and implementation of the GSGF

Chair: Ana de Lara (Mexico)
Purpose: Update on various projects relevant to promotion and implementation of the GSGF

Implementing the GSGF in Statistics Sweden
Statistics Sweden demonstrated how it was improving and increasing the use of geospatial information in statistics through an assessment of the implementation of the Global Statistical Geospatial Framework from a Swedish perspective. Each of the five principles of the Framework have been assessed from a capability point of view. The assessment shows where there are room for improvements and where there is a need for new tasks performed by Statistics Sweden. To understand the need for increased data integration the Framework is introduced as part of the solution for delivering new and integrated statistics as input for measuring the Sustainable Development Goals and other national initiatives.

The process included determining:
- Strengths and weaknesses from the national perspectives – and with the mapping agency.
- Implementation steps: Set goals for each principle, identify gaps, make annual action plans, and follow up.

- Capability assessment: What do we have to match and support the capability for each principle?

Implementation of the Statistical Spatial Framework in Australia

The Australian Bureau of Statistics (ABS) presented its experiences and future plans for the Statistical Spatial Framework (SSF) as a vision to ensure that "Informed decision making is enhanced by using location in a common framework to allow seamless integration of administrative, statistical and spatial information resources." Goals to help achieve this vision are that all statistical data is consistently spatially enabled, and that users can discover, access, integrate, analyze and visualize data seamlessly for regions of interest.

Benefits of a national framework: Formalized model – lobbying power; bilateral – partnerships and coherence; government forum – engagement and consistency. The SSF helps ABS communicate with statistical colleagues about the role geospatial plays in the statistical business processes and in engaging with the geospatial community. It has a critical role in the statistical leadership outside of the organisation, particularly with custodians of administrative data.

Discussion

The discussion raised the following points (captured in order of inputs):

- France is also using the GSGF to build geospatial capability and processes. Better integration saves money in surveys and the statistical process. An additional benefit is that it is easier to compute SDG indicators. But questions remain on how to be compliant with the 5 GSGF principles. It was suggested that a similar approach to Sweden be undertaken by other countries, with Australia planning to do so.
- Do national implementations need to be consistent or not? Agreed that consistency is very desirable but the main goal is being consistent with the framework principles and any guidance at the Global or Regional level.
- Make the connection to get buy in from leaders and upper management. How has this worked? Is the support there? Agreed that support could be generated by using consistent messaging around integration and the GSGF as global good practice.
- Is the GSGF making its way towards a standard? Agreed that at this time progress towards becoming an official standard was not a substantial priority, with further Framework detail needed as a first priority.
- More to do towards the 2020 Strategy in Statistics Sweden. Which of the principles of the GSGF have already, or need to have, standards? Now sit down with the mapping agencies.
- Do you also capture where things are difficult and/or where friction occurs with the GSGF? What are the gaps? What approaches have not worked? Agreed that this should be captured by the principle working groups.
- Contributing to national and international foundational spatial data frameworks is an additional benefit.
- We have all of the material and arguments – including gaps – to communicate the GSGF. We just need to get on and do it!

Update on GEOSTAT 3 Project - Presented by Statistics Sweden

This project is looking at specifying and implementation of Global Statistical Geospatial Framework for the European Statistical System (ESS). The GEOSTAT 3 Project moves from generic principles to concrete recommendations, and with specific regional conditions to build on, including: INSPIRE, the ESS, the EFGS, EuroGeographics and UN-GGIM: Europe. The aim is to harmonize methods for the integration of statistical and geospatial information within the ESS; to modernize the statistical system and increase efficiency and flexibility in terms of output; and to provide a better foundation for collaboration between national statistical and geospatial agencies in providing society with more and better data for evidence based decision-making. The goal is for a fully geocoded round of population census, and provision of data for the SDG global indicator framework. The principles of the GSGF are applied as follows:

- Principle 1: Point based geocoding infrastructure to the statistical unit level – a focus in GEOSTAT2 .

- Principle 2: Point of entry validation applied to all data collected. Geocoding quality declaration at object level.
- Principle 3: National versus European statistical geographies…and then statistical grids. Geographies should be provided as linked open data.
- Principle 4: Integrate geospatial workflows within statistical production (GSBPM). Publish data once and leave it at source.
- Principle 5: Map services for pan-European data. National portals and dissemination platforms.

A short document addressing the goal of each principle, requirements, recommendations, responsibilities, and backed up with good country practices, will be produced.

UNSD/ESRI Research Exercise to integrate statistical and geospatial information for the SDGs
UNSD provided an overview of a Research Exercise between UNSD, Esri, and select Member States to establish a Federated Information System for the SDGs. The research and learning exercise seeks to:

- Strengthen the ability for Member States, UNSD and SDG stakeholders to share data, knowledge, information management and best practices in monitoring the SDGs and their implementation in a more holistic and consolidated manner.
- Provide a modern platform for collaboration among data producers and users that facilitates data interoperability (within and outside National and Global Statistical Systems boundaries).
- Enable the overlaying of multiple national and global data sets (to understand data flows, address inconsistencies).
- A key driver for this research emanates from the professional statistical community's need, as reflected in the work of the EG-ISGI, to integrate geospatial and statistical information in order to support the 2020 Round of Censuses, to apply to other census-related initiatives, and to achieve the SDGs.

The research exercise is piloting an open, service-based, interoperable, scalable, and standards driven system-of-systems approach to measure and monitor, in an integrated and consistent manner, SDG policy initiatives (Goals, Targets, and Indicators), while allowing for protection at the country level for sensitive or confidential data. The SDG indicators used for this exercise have been identified by each Member State as being most relevant to their current international and national SDG priorities. The system explores new pathways for facilitating data flows and action around that data (Hubs), to bring together national/subnational data sets and link them to the global SDGs, as well as configurable and adaptable tools to use and promote engagement with existing data.

Session 3 – Progress reports from GSGF Principle Working Groups

Chair: Greg Scott (UNSD)
Purpose: Update on the plans and progress of each of the GSGF Principle Working Groups

This session considered the development of material to support, as well as examining issues specific to, each principle. The discussion also considered common issues such as: terminology, privacy and confidentiality, legal mandates, and technical standards and interoperability.

Principle 1: **Use of fundamental geospatial infrastructure and geocoding**
Germany, Mexico and Brazil
No consolidated paper at this time, as awaiting some feedback from Mexico and Brazil. Germany, Mexico and Brazil agreed to change the format of the current draft document, following the suggested Principle Working Group Template agreed to at the meeting. This GSGF Principle 1 document, reviewed by Expert Group members, will be available for inclusion in the Expert Group Report to the 49th Statistical Commission.

Output will be a paper 2-3 pages on how Principle 1 is interpreted.
The Expert Group agreed that:
Principle 1 is primarily an outcome of the geospatial community: data, tools, and standards. It focusses on geospatial infrastructure. Would also potentially rely on external services/partners.
We should state some recommendations as to what should be done with the principles.

Principle 2: Geocoded unit record data in a data management environment
Australia and Sweden
Linking the geocode for each statistical unit record to allow statistics to be applied to any geographic context, copes with future changes to geographies, and enables linkages using other data sources.
The Expert Group agreed that:
Principle 2 applies the Principle 1 elements to statistical and administrative data within a statistical infrastructure. Principle 2 is where the geocoding of unit level data occurs.
Objectives:
- Effective implementation of geospatial and geocoding infrastructure.
- Effective data management of statistical and geospatial data objectives.
- Requires protection of privacy.
- Storage of consistent and interpretable geocodes, preferably linked to point of truth.
- Simplified geographic aggregation of data.
- Flexible use of geocoded data.

Outputs:
- Agreed statistical and geospatial data management frameworks.
- Agreed geographic classifications and infrastructure.
- Global or regional/national geodetic reference frames.

Priority materials:
- Geocoding guidance material.
- Good practice data and metadata management.
- Guidance on protecting unit level record privacy.

Expert Group Discussion:
- India has offered to participate on the Principle Working Group.
- In the framework, where do partners come into it? Agreed that this should be addressed in each principle.
- Collecting country practices – how do we coordinate this? Agreed that this should be coordinated across the Expert Group.
- Guidance material and principle summaries – how and do we need a common format/template? Agreed that a template will be developed by Australia based on the points presented and discussed.

Principle 3: Common geographies for dissemination of statistics
Poland and Canada
Initial delay due to working group lead partnership difficulties, with Canada now contributing.
Principle 3 determines definitions of geographic regions and aggregation/disaggregation of data to regions.
Common set of geographies will ensure that statistical data is consistently geospatially enabled and that users discover, access, integrate, analyze and visualize statistical information seamlessly into geographies of interest.
Allows:
- Data from disparate sources can be integrated using common geographies.
- Visualization and analysis is simplified.
- Metadata supports data integration and use.
- Preparation of work, supporting field operation of data collection, dissemination of geostatistical phenomena and analysis.

Data can include: Administrative divisions, geographical names, cadastral data, orthophotomaps, road networks, topographic database, etc. Populations and distribution can be represented by grid (1km) data.

Expert Group Discussion:

- UNECA, Brazil, Australia and Japan wish to contribute to the Principle 3 Working Group.
- A 10 level model was discussed – geospatial is point line and polygon, while statistics is point and grid.
- What do we mean by disaggregation and what is our role within the GSGF and then the IAEG-SDGs WGGI? We see admin levels such as Level 3…and then detail such as "within 2km of an all-weather road". Then there is urban/rural! Agreed that Expert Group should provide guidance to be then taken up by IAEG-SDGs WGGI in determining mechanisms for SDG indicators.
- How do we apply the levels of administration across the different regions outside Europe? SALB for example. Agreed that this needs to be considered in Principle 3 Working Group.
- Make references to linkages with other areas of activity, such as UNGEGN, etc.
- Are we talking about principles at the national level only?? Or at the regional/global level as well?? This has implications for international boundaries and naming, etc. Agreed that this work principally applies to National level application.

Principle 4: Statistical and geospatial interoperability
UNECE and Eurostat

Purpose of Principle 4:

- Greater efficiency and simplification of the creation, discovery, integration and use of geospatially enabled statistics and geospatial data.
- Increases the potential application of a larger range of data and technologies.
- A wider range of data available and accessible for use in comparisons and analysis in decision making.

Interoperability of data is relevant during almost all stages of the statistical production process.
Interoperability barriers and enablers: Exchange and semantic interoperability; Technical – process temporal tool, spatial, projections, geocoding, and aggregation/disaggregation; Non-technical – legal, organizational, human. Standardization: GEOSTAT3, OGC, etc.
Next steps: All work needs to be synchronized, more detailed formulation of generic interoperability principles and a generic action plan covering all aspects. Select most relevant areas and start synthesizing recommendations.

Expert Group Discussion:

- What should the structure and scope of Principle 4 be?
- Define working methods for the terminology
- How to address standards across all principles? Agreed that each Principle Working Group needs to consider specific standards and this principal should focus on interoperability aspects.
- Could integration of geocoding into national statistical business process model be an example? Agreed that this was an example of interoperability.
- Formulate expectations towards addressing workshop outcomes and GEOSTAT3 initiatives. Assign tasks to possible contributors as these become clear: TC 211, OGC, SDMX, UNECE, UNSD, EU/Eurostat and UN-GGIM Member States.
- Need to look at technical and non-technical issues. How to do so and how deep do you go? Agreed that in-depth analysis is not required and if further detailed work is required this should be recommended and partners sought through the Expert Group.
- Technical (domain) standards are covered by other principles. Others, including the cross-cutting standards could be covered by Principle 4? A synthesis/mapping of existing standards? Agreed that this Principle Working Group should focus on interoperability aspects and a broad mapping would be appropriate, along with identification of relevant applicable standards.

Principle 5: Accessible and usable geospatially enabled statistics
USA and UK
The terms "accessible and useable" are quite vague and broad. Need to develop the policy standards and guidelines that support the release, access, analysis and visualization of geospatially enabled information. Some overlap with Principle 3.
Objectives:

- Data custodians can release data with confidence.
- Data users can discover and access geospatially enabled statistics.
- Data users can undertake analysis and evaluation.
- Web services enable machine to machine access as well as dynamic linkages to information.

Expert Group Discussion:

- Importance of open data now being emphasized. National portals being stood up – geospatial portals. The minute we start offering more detailed data, users will demand more integration. SDGs, targets, indicators will soon have questions regarding cross-referencing different aspects; such as water with people, land with economies, etc.
- Data science models should be considered.
- Management of privacy and confidentiality was discussed, with agreement that all principles need to address aspects of this topic. Agreed that Principle 5 & 3 should specifically address management of confidentiality of publicly released data.
- At the tip of the GSGF pyramid – something must be said of the quality of what is coming out. Some sort of quality measures need to be considered and solved.
- Data quality at the data instance level is being applied in USA – such as an address, line segments of a road, etc. Feature level quality indicators.
- In developing an NSDI the custodianship is important. Explain differences of custodianship versus ownership of data. Need also to explore broader community good and benefit. This is important when thinking about two professional communities.
- Data access – any given country has multiple data sets and sources. Is it a one stop shop or a distributed environment? Agreed that as a minimum a service-based access model is critical to modernization agendas regardless of where the data is sourced from.
- Encourage and leverage the enabling environment that provides the means for interoperable and standards-based data to be readily and authoritatively made available.
- The requirements of "access and use" needs to inform back down through the layers and the guidance for each principle.
- We need to focus on the specifics of statistics and geospatial. Make clarifications if needed, but don't address all issues for all communities! Look for and reference the good practice, but don't reinvent it. Leverage what already exists – don't duplicate.
- Principle 5 is important as a connection point between us and users.
- Open data is what we want to achieve and an optimum implementation.
- Concern with the last part of the process. It is very important. A lot of information is being made available but we must ensure that it is accessible and suitable for users, and encourage good practice in analysis and visualization.

Expert Group Discussion Summary:
We have discussed the Principles and Working Groups. Should there be a pro-forma for the Principles documents? Are we trying to be consistent? Can we decide on a template structure that would work?

A suggested Principle Working Group Template was discussed and includes the following aspects:

- Principle definition – summary (including benefits).

- Principle goals and objectives.
- Relationship to other principles – summary.
- Principle optimal implementation and other pathways – good practice.
- Principle inputs.
- External dependencies and gaps.
- Community and other stakeholder roles.
- Summary of required standards – existing and needed; inlcuding quality issues.
- Out of scope issues.
- Additional guidance material requirements – prioritization and work plan.

Action:

- The Expert Group will have drafts of each of the 5 Principle Working Group Templates available for discussion by an informal meeting of the Expert Group at the eighth session of UN-GGIM in August 2018.
- Final delivery of the documents will be tabled for adoption at the ninth session of UN-GGIM in August 2019.
- We also need to be cognizant of and consider the pace for the 2020 Round of Censuses. The Principle 1 Working Group will be the major contributor to this effort, and has agreed to accelerate their pace and reporting accordingly.

Session 4 – Consideration of plans to manage and prioritize the new coordination role for the Expert Group

Chair: Martin Brady (Australia)
Purpose: Consider the revised mandate agreed to by UNSC and endorsed by UN-GGIM for the Expert Group to "become the overall coordination group for all activities in the area of the integration of statistical and geospatial information"

This session provided an opportunity for a general discussion in order to reach an agreed model and mechanism for achieving coordination – and a better flow of information and communication.

- The United Kingdom had previously tried to pull together a mapping of the different groups in this space. It was a very difficult task and was not finalized.
- What should be the bounding box? On one hand there are the regional to global groupings of actors, while on the other hand there are the statistical-geospatial integration activities and capacity development, globally and regionally. Then, are we just talking about the UN system or more broadly? Agreed that the Expert Group members should focus on engaging with relevant international bodies connected with these efforts.
- There is a more formal coordination mechanism in Europe due to the various arrangements in place.
- We cannot be all things to all people. Our role should be to have our ear to the major activities. What are the means to elevate to the Expert Group? How do we take the role of overall coordination?
- Perhaps we can only participate where we can as representatives of the Expert Group.
- We can strengthen our presence by being much more visible on the web site. Check what is happening and what resources are available. Enhance the web presence. Have material available – get our website in better shape. Mexico offered to assist this process.
- UNECE faced this with statistical modernization. A review of what was happening and who was doing what was undertaken. Mapping the various stakeholders. Groups were then invited to the annual meetings and coherence began to merge.
- A standard 5-6 slide set should be developed on the Expert Group for everyone to use. Also possibly a brochure.

- Can we open a Wiki page for the Expert Group so that information is readily made available regarding events that are coming up? Agreed that the Co-chairs and UNSD will examine ways of enabling this type of activity.
- This approach will be reported back to the Statistical Commission.

Session 5 – Prioritization of other Expert Group work program items

Chair: Ian Coady (United Kingdom)
Purpose: Review and prioritize existing and emerging Expert Group work program items

Current priority areas for UN-GGIM and UNSC
UN-GGIM:
- Geospatial and statistical integration is key. Strengthen the topic.
- The GSGF is a major achievement – if we deliver on this, other things will fall into place with implementation of the Framework in national systems.
- Pay attention to Big Data – note that and move on.
- Support and promote the outcomes of the Workshop on Integrating Geospatial and Statistical Standards and encourage contributions to the proposed projects.
- Look at regional and sub-regional integration concepts.
- Contribute to the 2020 Round of Censuses.
- Knowledge management and transfer of information is a challenge.

UNSC:
- Acknowledged the contribution of the Expert Group.
- Geocoding and location services are important.
- Need to include aspects of environmental data. These environmental boundaries are different to those representing population data.
- Address fundamental and official data – this is underway with UN-GGIM.
- Open data – continuing and growing recognition of open data.
- Other needs will always be there, but should not be a focus.

Current EG-ISGI Work Program
- GSGF
    - Operationalize the principles of the GSGF to ensure that they are implemented and consolidated.
    - Build capability through the application of the Framework to 2020 Round of Population Censuses.
    - Support SDG indicator by providing the framework as a means of enabling small area data and facilitating disaggregation.
    - Consult users on requirements to assess usefulness and effectiveness of the GSGF.

- Principle 1: Promote favorable access and use conditions for geospatial data relevant for geocoding and use within the context of framework purposes.
- Principle 2: Develop and share methods for ensuring effective and authoritative geocoding.
- Principle 3: USA finalize the pros/cons of using grids v administrative boundaries as common dissemination boundary. Poland suggested a project for harmonizing the geographic and geospatial objects used by statistical and geospatial communities as their geographic reference framework (i.e. geodetic reference systems and statistical (geography) systems.
- Principle 4: Further consideration on common interests between statistical and geospatial communities in the area of data and metadata standards, the business process models, liked data, metadata interoperability, and the Discrete Global Grid System (DGGS). Expert Group needs to get more detail on the DGGS.

- Principle 5: Protect confidentiality within statistics released for small geographic areas and across different geographies. Identify best practices for guaranteeing confidentiality particularly when different sources and geospatial units are used for statistical data.

Communication:
- Members should represent the Expert Group at the various international meetings they attend or lead.
- UN World Data Forum, Dubai, 22-24 October 2018.
- World Geospatial Information Congress, Hangzhou, 27-29 November 2018.
- Extend the use of case studies in communication about the benefits of the Framework.
- The Expert Group would consider drafting an appendix to the UNSD Handbook on Population Censuses, if appropriate resources become available.

Others Program Items:
- A number of outstanding and "non-essential" items were discussed and considered, and agreement made to focus on those prioritized areas only.

Session 6 – Reports from Expert Group members in other key UN and International Groups

Chair: Ana de Lara (Mexico)
Purpose: Review and prioritize existing and Consider reports from other key groups and discuss coordination and contribution from the Expert Group

Task Team on Satellite Imagery and Geospatial Information – Eric Rancourt (Canada)
- Now Chair of the Task Team, taking over from ABS, Australia.
- Crop surveys in Canada is a feature of the Handbook produced. Final review at the moment.
- A Workshop to explain how satellite imagery can be used to support official statistics was delivered in Bogota this week by Canada and Australia.
- Call out for Expert Group members to participate in and contribute to the Task Team.

IAEG-SDGs WGGI – Marie Haldorson (Sweden)
- Marie provided an overview of the current activities of the WGGI, including its present report to the IAEG-SDGs in Bahrain.
- Need to consider the positioning of the GSGF in the discussion and SDGs process.

UNFPA Priorities for the 2020 Round of Censuses – Tapiwa Jhamba (UNFPA)
- GIS enables the integration of different data sources (remote sensing, census, surveys) for higher resolution information (data disaggregation) and census estimations.
- Allows comparability of data over time by providing data independent of administrative boundaries and EAs.
- Independent UNFPA evaluation in 2010 Census called for increased dissemination and use of census data geocoded for greater interoperability at sub-national level.
- Potential to use geocoded census data to generate estimates of population affected by humanitarian crises.
- Map census data at lower geographic levels for development planning, implementation, monitoring and reporting.
- Satellite imagery is valuable for settlement patterns to verify EAs.
- GRID Project – UNFPA involved: Goal is to support governments to improve production use and sharing of high-resolution population, settlement and infrastructure data.
- UNFPA supports Censuses in 135 countries. Guidelines, tools and standards.

2020 Round of Census of Population and Housing – Tim Trainor (USA) and Janusz Dygaszewicz (Poland)

- Provided a strategic and then tactical overview of the 2020 Census process.
- Requires planning, maps and geography.
- High turnover of staff.
- Most are statisticians, not geographers and cartographers.

Session 7 – Outcomes

Chair: UN EG-ISGI Co-Chairs
Purpose: Agree on outcomes and directions, and wrap up.

Next face to face meeting: Margins of the UN World Data Forum, 22-24 October 2018
Next WebEx: Before the next Stat Com.