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Geospatial information services based on official statistics

United Nations initiative on Global Geospatial Information Management (UN-GGIM) – All about connections

Note by the United Nations initiative on Global Geospatial Information Management

Summary

The paper discusses the role of the United Nations initiative on Global Geospatial Information Management (UN-GGIM) in responding to the challenges of statistical and geospatial communities. The paper describes ways of rising to the challenges of bridging statistics and geospatial information by drawing on the national capacities and capabilities of Member States.

The paper is presented for discussion to the Conference of European Statisticians' seminar on "Geospatial information services based on official statistics".



I. Introduction

1. The United Nations initiative on Global Geospatial Information Management (UN-GGIM) strived towards playing a leading role in setting the agenda for the development of global geospatial information and to promote its use to address key global challenges. Mandated by ECOSOC in 2011, this formal inter-governmental UN Committee of Experts in GGIM provides a forum to liaise and coordinate among Member States, and between Member States and international organisations. By drawing on national capacities and capabilities and the involvement of all stakeholders at the highest level, UN-GGIM is able to ensure joint decisions and directions on the use of geospatial information within national and global policy frameworks. Through improved policy, institutional arrangements and frameworks the Committee helps to address global issues and contribute collective knowledge to developing effective strategies to build geospatial capacity in developing countries.

2. The challenge facing UN-GGIM is ensuring that geospatial information helps governments implement better decision making, improving the lives of citizens, society, the world and its environment. Yet, while it is important to improve the availability of and access to both geographic data and statistics, the potential of these data are only truly realized when they are combined together. UN-GGIM is the catalyst that can connect the geospatial and statistical communities together at regional and global levels, unleashing the power of where to make the world a better place. This paper provides an overview of the European UN-GGIM initiatives and the work currently underway within the regional committee in making these connections and raising the awareness of the potential of geospatial and statistical information.

II. Recognized challenges for statistical and geospatial communities

3. The geospatial community through the second edition of the “Future Trends in geospatial information management: the five to ten year vision”¹ document has endeavoured to identify the challenges which will impact the geospatial industry in the near future. Similarly the European statistical community has produced the “ESS Vision 2020”² a strategic document on the challenges that official statistics is facing. The challenges documented in both reports are, unsurprisingly, similar. In addition both communities make reference to the need to integrate geospatial information with statistical data. This demonstrates that neither community can survive in splendid isolation; current problems are too large for one community, nation, or region to tackle on their own. Global challenges need the best data and information for better informed decision making for better societal solutions.

4. The challenges that society is facing are increasingly regional and global; sustainable development, climate change, disaster management to mention a few, have to be considered within a global context. Trans-border problems require policies and solutions that extend across these borders, therefore policy and decision makers require data that meet these demands enabling them to implement evidence-based policies and solutions.

¹ Future Trends in geospatial information management: the five to ten year vision, 2015, <http://ggim.un.org/docs/meetings/GGIM5/Future%20Trends%20in%20Geospatial%20Information%20Management%20the%20five%20to%20ten%20year%20vision.pdf>

² ESS Vision 2020, 2014, http://ec.europa.eu/eurostat/documents/42577/6906243/ESS+vision+2020_V2/35911206-3968-4548-adcc-882c797d9ca4

5. In addition the means of acquiring and managing data are changing, the increasing availability and proliferation of information means that besides official statistics and geospatial data from authoritative sources users are able to make use a myriad of addition data sources, such as big data, volunteered information, and remotely sensed data. Since it is becoming increasingly more important to make all these data accessible to the user, integrating and harmonising the information in a standardised and interoperable manner is an issue that is becoming pressing.

6. The economic realities are such that resources in public information agencies, such as National Statistical Institutions (NSIs) and National Mapping and Cadastral Authorities (NMCAs), are becoming constrained with the increasing need to do more with less. These realities bring with them the challenge of having to maintain the quality and value of authoritative information in order for users to maintain the level of trust in data that are so critical for evidence-based policies. It follows that as resources diminish, it becomes increasingly more important that they are used effectively with a view of retaining public value.

7. When considered holistically these challenges are considerable. UN-GGIM can act as the driver that connects the statistical and geospatial communities, bringing them together to jointly face these challenges as opportunities for growth rather than threats.

III. Rising to the challenges

8. Succeeding the conclusion of the United Nations Millennium Development Goals following 15 years of effort, 2015 was the year that saw world leaders adopt a new global development agenda. “Transforming our world: the 2030 Agenda for Sustainable Development”³ is an ambitious and bold global policy document, “*a plan of action for people, planet and prosperity*”. The 2030 Agenda is underpinned by 17 Sustainable Development Goals (SDGs), 169 associated targets and a global indicator framework enabling policy makers to measure and monitor progress.

9. However the availability of high-quality, timely, reliable and disaggregated data is critical for tracking the progress, galvanising performance efforts and improving targeted interventions in achieving these SDGs. The data are required at national, regional and global levels and in addition these data need to be complete, harmonised and interoperable to be meaningful for policy and decision makers. This poses a challenge to providers of authoritative data that are the bases for measuring, monitoring and managing the indicators.

10. Traditionally policy makers have made use of statistical information, however many of the targets are thematically and location based. UN-GGIM has stepped up to this challenge and has put together a task-force that is representing the geospatial community on the Inter-agency and Expert Group on SDG Indicators (IAEG-SDGs) which is tasked to develop an indicator framework for the goals and targets of the post-2015 development agenda. Geospatially linking statistical, demographic, environmental and other data together provides a cost-effective and efficient way to measure, monitor and manage the global challenges facing society today.

11. There is a growing awareness that geospatial information is no longer simply for mapping and visualisation, but also for integrating with other data sources. When linked with other information these can be used for data modelling and analytics, forming a strong basis for evidence based policy and decision making. However a significant challenge is discovering and developing the means for integrating geospatial and statistical information.

³ Transforming our world: the 2030 Agenda for Sustainable Development , 2015, http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E

In practice it is not easy to join or integrate statistical and geospatial data and considerable time is spent on preparing and managing these data rather than analysing them. The statistical and geospatial communities use different standards and methods to georeference or geocode information. This causes difficulties in modelling and analysing information, limiting the potential and the power that can be gained from the integration of statistical information with geospatial information.

12. The 2021 round of censuses is an opportunity to address this issue by collecting statistical and geospatial data at the same time. Maximum data flexibility can be achieved by collecting and geocoding at detailed capture levels of geography, for example at dwelling or unit level, and aggregating to higher levels, keeping in mind the imperative of ensuring data anonymity and confidentiality, important principles in statistics. The United Nations Expert Group on the Integration of Statistical and Geospatial Information (UN EG-ISGI) is considering the development and proposal of an overarching global statistical framework which is based and adapted from different existing national frameworks. The establishment of such a framework would provide a basis for effective and efficient integration and connection of statistical and geospatial information. It must be stated that an issue to consider is that the preparation time leading up to any census is significant. If standardised approaches are to be implemented to geospatial enable the 2021 Census to obtain maximum data interoperability and integration, these need to be implemented sooner rather than later to meet the timescales for the censuses round.

13. Beside the technical issues of integrating geospatial and statistical information, there are also institutional challenges that can, in some ways, be more difficult to address. In the majority of countries, NSIs and NMCAs are independent authorities, which often do not have traditions and habits of working closely together. With the common challenges they face, coupled with the potential unleashed by linking the ‘where’ of geospatial information to the ‘what’ of statistical data, the two communities are strategic partners, best serving their own needs and those of their users by coming closer together.

14. The working groups of UN-GGIM: Europe are helping NSIs and NMCAs to work together. With active participation from both communities, the two working groups are striving to increase data interoperability and harmonisation by proposing core geospatial data which meets essential user needs in Europe, and enabling integration of core geospatial data with other data, such as statistics, in order to foster further usage. The working groups have identified the core data themes for Europe and have defined the priority user needs for combinations of data.

15. In addition the regional committee of UN-GGIM: Europe has actively engaged with bringing together European NSIs and NMCAs by organising collaborative meetings, such as the Joint UN-GGIM: Europe – ESS events in 2015 and again in 2016; participation in the European Forum for Geography and Statistics and increased engagement from NSIs in regional plenary meetings.

IV. Conclusions

16. NSIs and NMCAs have much in common, both provide authoritative public information which forms the basis of informed policy and decision making, both face costly acquisition and maintenance of large volumes of data which need to meet increasing user needs and demands, and finally both struggle with the challenge of diminishing resources and having to do more with less. These commonalities alone warrant a strategic partnership between the two communities which have a mandate and obligation to deliver trusted authoritative information and public value. However there is also the additional advantage: coupling statistical data with geographic data magnifies the power and the potential of the

information, the integrated whole is greater than the sum of its parts. UN-GGIM is striving to unleash this benefit by connecting and bringing together the geospatial and statistical communities. It is also why the UN-GGIM can drive and play a leading role in setting the agenda for the development of global geospatial information and to promote its use to address key global challenges.
