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National geospatial data and information systems

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Note by the Secretariat

Summary

The present paper contains the report of the Secretariat, prepared with the assistance of the World Bank Group, on new developments with regard to national geospatial data and information systems for consideration by the Committee of Experts on Global Geospatial Information Management.

In this report, prepared with the assistance of the World Bank Group, the Secretariat informs the Committee of Experts on the joint efforts by the United Nations Statistics Division and the World Bank to explore and develop possible mechanisms for geospatial data, infrastructure and policies to be embedded more holistically within concessional financing, technical assistance and knowledge-sharing services and their subsequent implementation in developing countries. In the report, the Secretariat informs the Committee of the need for collaboration in developing an overarching geospatial framework that countries could reference when using geospatial information to develop national systems tailored to their own situations. The framework would include an action plan and road map on means for implementation, as well as elements such as the economic impact and value of geospatial information systems, investment needs and associated tools, guides and good practices.

* E/C.20/2017/1

I. Introduction

1. In December 2015, the UN-GGIM Expanded Bureau convened its second annual meeting in New York at UN Headquarters¹. At the time a key activity for the Expanded Bureau was to review and provide final inputs into the Programme Review of the Committee of Experts for submission to the Economic and Social Council (ECOSOC) in early 2016. However, an item of business included a briefing by the Senior Director of Social, Urban, Rural and Resilience, and other staff, from the World Bank Group. The briefing outlined the World Bank's goals, which include ending extreme poverty and promoting shared prosperity by contributing to the global development agenda, delivering customized development solutions backed by finance, knowledge, and convening services, and helping to advance knowledge. A new objective for the Bank was to look at development through the lens of spatial location, including to provide high level guidance to develop a geospatial information management engagement note that addresses: 1) the World Bank's internal use of geospatial resources and data; and 2) assessing how the World Bank could assist client countries to optimize the use of geospatial information.

2. The Expanded Bureau and the World Bank discussed the possible mechanisms and modalities for creating an enabling environment for geospatial data, infrastructure and policies to be embedded more holistically within the financial process, and subsequent implementation in specific countries. It was a very initial exploratory, but productive, discussion on how to build capacity to build the geospatial information topic with greater potential reach and benefit to countries. This complemented the Bank's goal to ensure that, in each country in which the World Bank operates, geospatial information is able to underpin future development decision-making in a transparent way, and assists in many aspects of the country's work including their measuring and monitoring processes. There was agreement that the discussion will continue among the group, and facilitated by the Secretariat.

3. As a practical means to progress the topic, a number of presentations and discussions were convened between the Secretariat and the World Bank during the Annual World Bank Land and Poverty Conference, held at the World Bank Headquarters in Washington DC from 14-17 March 2016. Topics included possible joint work going forward regarding the global geodetic reference frame investment needs, and the fundamental geospatial datasets required to measure the new Sustainable Development Goals (SDGs); and to explore opportunities of national benefit for the developing and least-developed countries, which help to improve equality with the developed world by removing poverty and improving prosperity. In the intervening period, discussions between the Secretariat and the World Bank continued informally.

4. During the 2017 iteration of the Annual World Bank Land and Poverty Conference, again held in Washington DC from 20-24 March 2017, and at which the Secretariat and co-chair of UN-GGIM attended, further high-level meetings were facilitated with the World Bank to explore a formal collaboration, through an Agreement, to develop possible mechanisms for geospatial data, infrastructure and

¹ Report of the UN-GGIM Expanded Bureau meeting:
<http://ggim.un.org/docs/meetings/UN%20GGIM%20Expanded%20Bureau%20meetings/Report%20UN-GGIM%20Extended%20Bureau%20Dec2015.pdf>

policies to be embedded more holistically within concessional financing, technical assistance and knowledge-sharing services and their subsequent implementation in developing countries. A first draft of an Agreement was prepared in April 2017 and presented informally to the Bureau of the Committee of Experts for discussion in May 2017 on the margins of the Kunming Forum in Kunming, China. The Bureau agreed with and supported the Statistics Division's collaborative partnership with the World Bank, and reiterated its importance in contributing to the implementation of the second phase of the Committee of Experts in the coming five years.

5. The present report informs the Committee of Experts of the collaboration between the Statistics Division and the World Bank, including the signing of a joint UNSD and World Bank Agreement at this seventh session of the Committee of Experts. The Committee of Experts is invited to take note of the report and to express its views on the way forward on new developments with regard to national geospatial data and information systems, and to assist countries to bridge the geospatial digital divide. Points for discussion and decision are provided in paragraph 20.

II. Context and motivation to develop an overarching geospatial framework to develop national systems

6. There is a consensus that high quality and timely geospatial and statistical information and analyses are a prerequisite for good policy making. Recent advances in technology have seen the emergence of geospatial information as a major contributor to better policy formulation and responses to many of the current social, economic and environmental challenges facing the world, given its ability to integrate both quantitative and qualitative information across sectors and present this to decision-makers in innovative formats. However, and despite significant advances in the availability of geospatial information and technologies, there is still a lack of awareness, understanding and uptake, particular at the policy and decision-making levels, of the vital and integrative role of geospatial information and related enabling architectures such as National Spatial Data Infrastructures (NSDIs) in contributing to national development. This lack of awareness and uptake is most prevalent in developing countries where national policies and technical capacities and capabilities need to be better aligned and considerably strengthened.²

7. The 2030 Agenda for Sustainable Development demands the need for new data acquisition and integration approaches, including supporting developing countries in strengthening the capacity of national data systems to ensure access to high quality, timely, reliable and disaggregated data. This includes exploiting the contribution to be made by earth observations and geospatial information, while ensuring national ownership in supporting and tracking progress. As described in Goal 17 in the area of data, monitoring and accountability, there is a need to: "By 2020, enhance capacity-building support to developing countries, including for least developed countries and small island developing States, to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts." Data disaggregated by income, gender, age, race, ethnicity, migratory status, and

² Sustainable development and geospatial information: A strategic framework for integrating a global policy agenda into national geospatial capabilities: <http://www.tandfonline.com/doi/full/10.1080/10095020.2017.1325594>

disability are ‘people centric’ while geographic location refers to ‘place’. As the basis for evidence-based decision-making and accountability, and for determining and measuring the relationship between ‘people and place’ within national contexts, data will be crucial to the success of the 2030 Agenda.

8. While the 2030 Agenda itself is global, it takes different national realities and circumstances into consideration and is intended to guide governments to incorporate the 17 SDGs into their national planning processes and strategies as per their individual priorities. However, within the confines of national government structures there needs to be more integration across the various national data information systems and platforms, particularly statistical (socio-economic) and geospatial (environmental), in order to institutionalize inclusive mechanisms and leverage the best and most effective data and analysis so that a wider range of stakeholders have the capacity to be involved in implementing the 2030 Agenda and subsequent evidence-based policy and decision-making. These capacities are currently very limited. There is a need to significantly support developing countries and regions to achieve this in a timely manner through the formulation of appropriate frameworks, methods, guidelines and standards which are able to be piloted and delivered within and across countries and regions.

9. In its Programme Review³ submitted to ECOSOC in January 2016, the Committee of Experts noted that the paradigm shift of geospatial information from a visualisation and mapping tool to an integrated evidence-based decision-making solution provides challenges for countries unless there are legal, policy and institutional frameworks in place which allow effective and efficient interoperability of data and information across the different national institutions which leverage geospatial information. While the situation and level of maturity is often nationally specific, the over-riding lack of the awareness needs to be addressed at the highest level for both strategic and operational contexts in national development. It will also take transformative change and collaborative approaches to link different data – demographic, statistical, earth observations, environmental and other societal geospatial data together with the one thing they have in common – geographic location. As witnessed by the exponential growth in location-based services in industry and the private sector, the location element of data, including statistical data, is going to be critical in the future. Although the recognised maturity of these frameworks is cornerstone for any successful national geospatial information strategy, sustainable implementation needs to cater for institutional, financial, methodological and technical supporting mechanisms to ensure appropriate delivery of services by the respective national geospatial information authorities.

10. In most instances, and more so with developing countries, there is presently no evident national policy or framework for governments to determine how geospatial information can be implemented and integrated into their development agendas. This lack of policy and guidance, with commensurate critical gaps and connection points with national geospatial methods and frameworks, is a visible impediment to developing countries and those most affected by the challenges and need to achieve national development. One part of the solution to this problem lies in policy-making that takes into account the social and economic value of geospatial information. Another part lies in the regular and sustainable production and dissemination of geospatial data that reflects the physical world we must

³ Programme review of the work of the Committee of Experts on Global Geospatial Information Management: http://ggim.un.org/docs/Programme%20review_E-2016-47_en.pdf

measure and monitor. Both of these strategies are vital and complement each other if we are to support, invest in, and advance the knowledge agenda for developing countries, and bridge the digital divide with digital transformation.

III. Developing a collaborative partnership to assist countries to bridge the geospatial digital divide

11. Many global actors, including the Committee of Experts and the World Bank, understand that to be able to measure and monitor sustainable development progress for those most in need, the most vulnerable and least developed countries, is going to take not only transformational change in our combined thinking, but also transformational change in how we leverage existing and new sources of data and emerging technologies – in essence a digital transformation. Through the interactions and working activities of the Committee of Experts, it can be seen that the most developed countries are presently grappling with an abundance and oversupply of data and technology, while in many parts of the world data scarcity prevails. When applied to sustainable development there is a greater concern. Those countries that are experiencing significant data scarcity are also those that tend to be most vulnerable and at greatest risk of being left behind. A vast ‘digital divide’ remains. With the enabling global mechanism of the 2030 Agenda, the challenge is how to most effectively transfer this technology and data richness, availability and connectivity to the technology and data poor. We are on the threshold of immense opportunity with digital transformation and being able to bridge the digital divide that exists among countries, but realizing this opportunity is complex in many dimensions, not the least being the lack of robust national information systems and associated geospatial frameworks. Achieving sustainable development will require digital transformation, but at the moment those countries that need it most do not yet know what it means, as we must first bridge the digital divide.

12. The United Nations Statistics Division is committed to the advancement of the global statistical and geospatial systems. It compiles and disseminates global statistical information, develops standards and norms for statistical and geospatial activities, and supports countries' efforts to strengthen their national statistical and geospatial information systems. The Statistics Division facilitates the coordination of international statistical and geospatial activities and supports the functioning of the United Nations Statistical Commission (UNSC), the United Nations Committee of Experts on Global Geospatial Information Management (UN-GGIM), and the United Nations Group of Experts on Geographic Names (UNGEGN) as the apex entity of the global statistical and geospatial systems.

13. In adopting resolution (2016/27) entitled “Strengthening institutional arrangements on geospatial information management”, ECOSOC acknowledged the considerable achievements of UN-GGIM and its role in the implementation of the 2030 Agenda for Sustainable Development, and stressed the continued need to strengthen the coordination and coherence of global geospatial information management in capacity-building, norm-setting, data collection, data dissemination and data sharing, among others, through appropriate coordination mechanisms.

14. The World Bank Group’s overarching mission is to reduce poverty, improve living conditions, and promote sustainable and comprehensive development in its developing member countries. It has established two ambitious goals to anchor its mission: end extreme poverty within a generation and boost shared prosperity. The

World Bank achieves these goals by providing loans, concessional financing, technical assistance, and knowledge sharing services to its developing member countries and through partnerships with other organizations.

15. Consistent with these respective mandates, the Statistics Division and the World Bank have decided to collaborate in carrying out common objectives and activities related to assisting lower and middle income countries to ‘bridge the geospatial digital divide’ to move towards e-economies, improve services to citizens, build capacity for using geospatial technology, and enhance informed government decision making processes. This collaboration will be formalised with the signing of an Agreement at this seventh session of the Committee of Experts.

16. Against this backdrop, the proposed collaborative partnership will focus on building and strengthening the national geospatial information management capacities of developing countries towards implementing the 2030 Agenda for Sustainable Development and evidence-based policy and decision-making. It is anticipated that the collaboration will focus on a number of specific substantive areas which will include, but not be limited to:

(a) Developing an **overarching Geospatial Framework** for countries to reference when developing their national and sub-national spatial data infrastructures (SDIs). The Framework will consist of principles, reference guides and good practices for topics such as geospatial policy, law, institutional arrangements, standards, technical systems and geodetic infrastructure, fundamental datasets, capacity, and use/applications of geospatial data, as well methods to calculate the economic impact and value of SDIs. The Framework would include an action plan and road map on means for implementation, as well as elements such as the economic impact and value of geospatial information systems, investment needs and associated tools, guides and good practices. The aim is to develop and implement mechanisms to establish the Geospatial Framework holistically in countries in such a way that transformational change is enabled, visible and sustainable

(b) Assisting countries to **prepare and implement country level Action Plans** to operationalize the Geospatial Framework taking into consideration national circumstances and priorities. The country level Action Plans will include identification of investment needs, priorities, analysis of socio-economic benefits and potential funding sources.

(c) Preparing a proposal and seek contributors for the **establishment of a World Bank – UNSD Trust Fund** to support countries to test and implement the Geospatial Framework and country level Action Plans.

17. Beyond some of these common objectives, the collaboration between the Statistics Division and the World Bank will consider ways to:

(a) Share knowledge, ideas and lessons learned:

(b) Plan joint capacity building programs in areas of common interest;

(c) Collaborate on the promotion, preparation and organization of joint workshops/conferences/training seminars;

(d) Collaborate on the organization and execution of high-level joint research projects on subjects of primary interest;

(e) Collaborate on ways to join with other entities such as the private sector, academia, and other International Finance Institutions and development partners which could bring further support to the activities pursued under the Memorandum;

(f) Collaborate on the dissemination of the lessons learned/results of projects/research to the public through publications, the Internet, seminars, workshops, conferences and other easily accessible and inexpensive means; and

(g) Periodically evaluate the effectiveness of working in collaboration with reference to their respective organizational mandates and priorities.

18. Through the support and guidance provided by the Bureau and Expanded Bureau, the Statistics Division and the World Bank have progressed a collaborative partnership to assist countries to bridge the geospatial digital divide. However, it is well recognised that such a collaborative partnership will not be sustainable and achievable without the support and subsequent ongoing engagement by the Committee of Experts, as the apex global intergovernmental geospatial entity, and the broader global geospatial professional community.

19. The Committee of Experts is invited to take note of the report, to support the implementation of the Agreement between the Statistics Division and the World Bank, and to express its views on the way forward on new developments with regard to national geospatial data and information systems, and to assist countries to bridge the geospatial digital divide.

IV. Points for discussion

20. The Committee is invited to:

(a) Take note of the present report on the progress made by the Bureau, the Secretariat and the World Bank in formulating a joint vision to assist countries to bridge the geospatial digital divide;

(b) Support the implementation of the Agreement between the Statistics Division and the World Bank; and

(c) Express its views on the way forward on new developments with regard to national geospatial data and information systems, and to assist countries to bridge the geospatial digital divide.