



Kunming Forum on UN-GGIM Kunming, China, 10-12 May 2017

Cities of the Future: Smart, Resilient and Sustainable Summary Statement

The Kunming Forum on United Nations Global Geospatial Information Management (UN-GGIM), with the theme “Cities of the Future: Smart, Resilient and Sustainable” was convened in Kunming, China, from 10-12 May 2017. More than 160 experts from 30 countries met to share experiences and methodologies on a number of contemporary topics to emphasize and explore the role and contribution of geospatial information in shaping and building smart, resilient and sustainable cities of the future. The Third Meeting of the IAEG-SDGs Working Group on Geospatial Information was convened from 8-10 May 2017 on the margins of the Kunming Forum. The following reflects the main conclusions of the participants of the Kunming Forum.

Context

United Nations General Assembly Resolution, A/RES/70/1, of 25 September 2015, ‘Transforming our World: The 2030 Agenda for Sustainable Development’, is a universal and transformative Agenda that will, when realized across its full extent, profoundly improve the lives of all and transform our world for the better. The inclusive and integrated nature of the 2030 Agenda for Sustainable Development, with its 17 Sustainable Development Goals (SDGs) and 169 Targets is ambitious. Measuring, monitoring, follow-up and review of the SDGs will be facilitated through a global indicator framework, presently comprising 232 specific indicators.

The United Nations Committee of Experts on Global Geospatial Information Management (UN-GGIM) provides an inter-governmental mechanism to make joint decisions and set directions on the production and use of geospatial information within national and global policy frameworks, and plays a leading role in setting the agenda for the development of global geospatial information, infrastructure and its management. In July 2016, the Economic and Social Council (ECOSOC) adopted a resolution on ‘Strengthening institutional arrangements on geospatial information management’. This resolution strengthens and broadens the mandate of the Committee on all matters relating to geography, geospatial information and related topics, and stresses the need to strengthen the coordination and coherence of global geospatial information management, capacity-development and norm-setting. These are critical needs for our Member States.

Since 2007 more than half of the world’s population live in cities, where 80% of global GDP is now generated. The outcome document of the United Nations Conference on Housing and Sustainable Urban Development (Habitat III) acknowledges that the battle for sustainable development will be won or lost in cities. By 2050, where two out of three people will live in cities, the urban population alone will be larger than the current total world population, posing massive sustainability challenges in terms of housing, infrastructure, basic services, and jobs among others.

The New Urban Agenda, the outcome of Habitat III, recognizes the importance of the use of digital platforms and tools, including geospatial information systems, to improve long-term integrated urban and territorial planning and design, land administration and management, and access to urban and metropolitan services. The urban agenda supports the role and enhanced capacity of national, sub-national, and local-governments in data collection, mapping, analysis,

and dissemination, as well as in promoting evidence-based governance, building on a shared knowledge base using both globally comparable as well as locally generated data, including through censuses, household surveys, population registers, community-based monitoring processes and other relevant sources, disaggregated by income, sex, age, race, ethnicity, migration status, disability, geographic location, and other characteristics relevant in national, sub-national, and local contexts.

Cities are evolving quickly. For example, 90% of the urban growth to 2050 will occur in Asia and Africa. The composition and makeup of cities of the future will be critical for how we address global challenges, such as poverty, social inequalities, and climate change. There is a need for a radical paradigm shift in the way cities and human settlements are planned, developed, governed and managed.

Urbanization is not only an outcome of development, but a formidable engine to achieve development. In many countries, significant improvements are being achieved through urban migration, including better transportation and related infrastructure, improved access to health services, education and social well-being, and opportunities for employment, innovation, emerging ideas and citizen participation.

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Noting the rapidly evolving challenges, needs and opportunities for cities to ensure the wellbeing of urban dwellers in the future, the Kunming Forum was convened to address a number of contemporary topics to emphasize and explore the role and contribution of geospatial information in shaping and building smart, resilient and sustainable cities of the future. As stated by the President of the 71st Session of the UN General Assembly “Building inclusive, safe, resilient and sustainable cities is fundamental to achieving the sustainable way of life we have set out to provide for future generations.”

The Kunming Forum was opened with forward-looking welcome statements by: Dr. Liu Huiyan, Vice Governor, Government of Yunnan Province; Mr. Wu Hongbo, Under-Secretary-General for Economic and Social Affairs, United Nations; and Mr. Kurexi Maihesuti, Vice Minister, Ministry of Land and Resources and Director-General, National Administration of Surveying, Mapping and Geoinformation of China. All invited officials agreed that the theme of the Kunming Forum was most appropriate and timely, providing all stakeholders a platform to address both challenges and opportunities to proactively shape cities of the future that will be smarter, more resilient and sustainable.

Prof. Zhou Chenghu, Vice President, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, then provided a thought-provoking keynote presentation that challenged the audience to evaluate and consider what cities of the future could be like in terms of their design and subsequent growth implications and dynamics so that they are able to improve the quality of life for urban inhabitants.

The technical thematic sessions of the Kunming Forum provided leading, innovative and encouraging ideas, and comprised topics that included: visioning the cities of the future; leveraging innovation and technology; emerging approaches and methods in data collection, mapping and modelling; integrative information systems and their growing analytical needs; geospatial information and services for disasters; cooperation and partnerships; capability and capacity development; and the geographic dimensions of the 2030 Agenda for Sustainable Development.

Kunming Forum Summary

The world's cities and urban settlements are growing rapidly; are dynamic, complex, and multidimensional and interconnected in their construct and with their surrounding environments. Cities form the stage in which more than half the world's population live, work and play. In all countries of the world, cities represent people's lives, their identity, their culture and their place.

The Asia-Pacific region, home to almost half of the global urban population, is urbanizing faster than any other region, resulting in an unprecedented growth in densely populated megacities, and increasing consumption and development challenges.

Cities form an ideal 'spatial location'. Cities of the future will be integrative data ecosystems generating and consuming massive amounts of data related to people, their place, their activities and their environment. Our global geospatial community will need to play an increasing and proactive role in shaping and building smarter, more resilient and sustainable cities. Long term planning is essential.

In order to achieve sustainable development, cities, as urban interconnected hubs, have a crosscutting role among and across the 17 goals and 169 targets of the Sustainable Development Goals (SDGs). All cities will have a direct impact on the SDGs in the effort to measure development progress. Geospatial analysis and dashboards are needed for understanding these conditions and monitoring change. To support planning decisions and actions taken, cities will need to exploit geospatial information, statistics, Earth observations, Big Data and other new sources of information, and will need to combine these with sustainable and innovative technologies.

Different perspectives were shared on what constitutes a smart city, with many similar components. Examples included concepts such as: easy and quick, automated, sophisticated, informed, self-activated, etc; and implementations such as: smart cleaning, lighting, parking, bicycles, telecoms, transport, recharging stations, energy solutions, etc.

Generally, a city can be defined as 'smart' when investments in human and social capital and traditional (transport, etc.) and modern (ICT, etc.) communication infrastructure fuel sustainable economic development and a high quality of life, with wise management of natural resources, through participatory governance.

However, we also need to be cognizant of what 'smart cities' may mean for developing countries, and those least developed countries, whom often face unique and emerging urbanization challenges, which include urban slums and squatter settlements. How can 'smart' apply? How can we bring benefits to the developing world in an accelerated way? For the least developed countries, 'smart' may just mean having access to the internet, or better access to improved data and associated geospatial technologies.

With smart cities we need to do the data basics well. Cities of the future require a 'smart' data driven and 'location' approach to enable their effective and efficient planning, development and management – from land use planning and consumption rates; urban migration; housing and approvals and administration; urban expansion and monitoring; transport, utilities and related infrastructure; health, education and other social services; employment; and protecting the poor and people in vulnerable situations, including slums.

Cities of the future also require a 'smart' data driven geo-statistical approach – population growth, censuses, household surveys, registers, administrative data, addresses, postcodes, etc. This enables integrated population and economic data to be combined with location-based geospatial information to understand city and urban dynamics.

Modernizing national statistical and geospatial organizations, and leveraging the technological value chain, will provide new and innovative opportunities to influence many aspects of cities. Therefore, the integration of statistics and geospatial information are key considerations in the data flow and knowledge for cities. The Global Statistical Geospatial Framework (GSGF) and 2020 Round of Population Census will provide valuable frameworks for us to better measure and understand the population of cities and urban dwellers.

There are many rich sources of data that are used in a variety of interesting and practical applications. Cities have spatial diversity and dynamics, including scale, dimension, granularity and temporality. In each case, from a human geography perspective, fundamental geospatial data layers are required. How do we determine these? What are the guidelines? What is the ideal state of coverage that is current, available, maintained, standardized and interoperable?

The new and emerging 'data ecosystem', a system of integrated data inputs and subsequent output analytics, provides context for how we may organize and deliver our social, economic and environmental data for the cities of the future. The need for collaboration, partnerships and synergies within and among agencies to support planning decisions and actions taken is an important part of the process. The data ecosystem is a more integrated and crosscutting information system that builds upon and elevates the traditional national spatial data infrastructure (NSDI) concepts, and enables aggregations and disaggregation's of data (big and small data) according to required geographies.

The need to leverage technology and geospatial information to build resilience and reduce the threats to urban life from unsustainable production and resource consumption, pollution levels, disaster risk, and climate change is recognized. The fast and dynamic nature of disaster response requires pre-agreed frameworks and principles to be in place, especially when we consider where to get data from, understanding the required data flows and processes, and the fusion of authoritative and dynamic informal data. The Strategic Framework on Geospatial Information and Services for Disasters provides a global to national mechanism to manage these needs, including in cities.

The Kunming Forum informed the global geospatial information management community of the unique challenges and opportunities vis-à-vis to proactively shape and build smart, resilient and sustainable cities of the future. The demand and need for quality, reliable and timely data to inform good policy and decision making in urban contexts must not be under-estimated. Concerted and collaborative efforts are needed to bring together and integrate data and information from multiple sources and with differing scales and temporality, leveraging geospatial information management as a technological and critical enabler for all countries.

12 May 2017