Positioning geospatial information to address global challenges

Cities of the Future: Smart, Resilient and Sustainable

Visioning an Integrative Data Ecosystem for the Future

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Cities of the Future...

Since 2007 more than half the world’s population live in cities, where 80% of global GDP is now generated. By 2050, 2 out of 3 people will live in cities, with 90% of that growth in Asia and Africa.
World Bank data show that 500 million people were lifted out of poverty in China between 1981 (then 81%) and 2012, when the number of people living on less than $1.90 a day fell to 6.5%.

Extrapolation of World Bank data estimates 4.1% of population of China below poverty line in 2014, compared to 13.5% of US citizens from the US Census Bureau.

“look for the basic reasons for China’s success in poverty reduction. Its improvements were achieved by urban migration, better transportation infrastructure and the subsequent relocation of poor people from certain regions to more developed urban areas, where employment and improved access to education is available. An economy on the move has triggered employment opportunities for millions”
Cities of the Future...

Urbanization is not only an outcome of development, but a formidable engine to achieve development. Cities are key to tackling global challenges, such as poverty, social inequalities, and climate change. With more than 80% of global GDP generated in cities, urbanization, if managed well can contribute to sustainable and inclusive growth, in harmony with nature, by addressing inequalities, increasing productivity, and promoting job creation, social well-being, citizen participation, innovation and emerging ideas.

The battle for sustainable development will be won or lost in cities. By 2050, 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. There is a need for a radical paradigm shift in the way cities and human settlements are planned, developed, governed and managed. The decisions we make today will shape our common urban future.

A bit of history... rewinding the clock...

“I believe we need a ‘Digital Earth’ - a multi-resolution three-dimensional representation of the planet, into which we can embed vast quantities of geo-referenced data.

Imagine a young child going to a Digital Earth exhibit at a local museum. After donning a head-mounted display, she sees Earth as it appears from space. Using a data glove, she zooms in, using higher and higher levels of resolution, to see continents, then regions, countries, cities, and finally individual houses, trees, and other natural and man-made objects.

We have an unparalleled opportunity to turn a flood of raw data into understandable information about our society and our planet. This data will include not only high-resolution satellite imagery of the planet, digital maps, and economic, social, and demographic information. If we are successful, it will have broad societal and commercial benefits in areas such as education, decision-making for a sustainable future, land-use planning, agricultural, and crisis management; and to collaborate on the long-term environmental challenges we face.”

Positioning geospatial information to address global challenges

Technology and society are driving digital transformation, and targeted towards smart cities, but are we yet leveraging this new ‘data ecosystem’ effectively?

Cities of the future will be integrative data ecosystems

- generating and consuming massive amounts of data related to people, their place, and their environment.
Global development policy framework

Cities: Smart, Resilient, Sustainable
People to Place Relationships
Do we really understand the scale of the problems, where they are, whom they impact, what are the causes, and how they can be remedied?

## GLOBAL DEVELOPMENT POLICY FRAMEWORK

<table>
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<th>The 2030 Agenda for Sustainable Development</th>
<th>Sendai Framework for Disaster Risk Reduction 2015-2030</th>
<th>SIDS Accelerated Modalities of Action (SAMOA) Pathway</th>
<th>Paris Agreement on Climate Change</th>
<th>HABITAT III Urban Agenda</th>
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How does Digital Transformation Achieve Sustainable Development?

How do we bridge the Digital Divide?
Follow up and review:

**76.** We will support developing countries, particularly African countries, LDCs, SIDS and LLDCs, in strengthening the capacity of national statistical offices and data systems to ensure access to high quality, timely, reliable and disaggregated data. We will promote transparent and accountable scaling-up of appropriate public-private cooperation to exploit the contribution to be made by a wide range of data, including Earth observations and geospatial information, while ensuring national ownership in supporting and tracking progress.

Data, monitoring and accountability:

**17.18** 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.
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156. The use of digital platforms and tools, including geospatial information systems, will be encouraged to improve long-term integrated urban and territorial planning and design, land administration and management, and access to urban and metropolitan services.

159. We will support 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.
UN-GGIM: Integration of policy needs and activities

Needs
- Significant gap among countries
- Lack of global decision-making
- Mandate of Governments
- High level coordination
- National to global policy frameworks
- Geospatial capacity building
- Address global issues as a community
- Develop norms, standards and guides

Activities
- Global geodetic reference frame
- Global fundamental data themes
- Institutional arrangements, legal and policy frameworks
- Standards and technical specifications
- Statistical and technical specifications
- Land administration and management
- Sustainable development and disaster risk reduction
- National geospatial data and information systems

Technical integration
- Human interoperability

UN-GGIM: Global geospatial policy framework

2017-2021 Strategic Framework

Vision
- Positioning geospatial information to address global challenges

Mission
- Operating within agreed policies and institutional arrangements, and as an interconnected global community of practice, the Committee of Experts will ensure that geospatial information and resources are coordinated, maintained, accessible, and able to be used effectively and efficiently by Member States and society to address key global challenges in a timely manner.

Context
- Provide leadership in setting the agenda for the development of global geospatial information and to promote its use to address key global challenges
- Provide a forum for coordination and dialogue with and among Member States and relevant international organizations on enhanced cooperation
- Provide a platform for the development of effective strategies to build and strengthen national capacity and capability concerning geospatial information, especially in developing countries
- Propose work plans, frameworks and guidelines to promote common principles, policies, methods, standards and mechanisms for the interoperability and use of geospatial data and services
- Make joint decisions and set the direction for the production and use of geospatial information within and across national, regional and global policy frameworks
Do we have the data for development??
Can we make it ‘production ready’ information for all?
An integrative data ecosystem
The fact is that no species has ever had such wholesale control over everything on earth, living or dead, as we now have. That lays upon us, whether we like it or not, an awesome responsibility. In our hands now lies not only our own future, but that of all other living creatures with whom we share the earth.

David Attenborough