UN-GGIM: making a difference nationally, regionally and globally

Dr Vanessa Lawrence CB
Co-Chair
UN-GGIM Committee of Experts
At its 47th plenary in July 2011, ECOSOC, recognised the importance of global geospatial information and established the Committee of Experts on Global Geospatial Information Management (UN-GGIM); and

- requested the Committee to present to ECOSOC in 2016 a comprehensive review of all aspects of its work and operations, in order to allow Member States to assess its effectiveness; and

- encouraged Member States to hold regular high-level, multi-stakeholder discussions on global geospatial information, including through the convening of global forums, with a view to promoting a comprehensive dialogue with all relevant actors and bodies.

Resolution

2011/24
Committee of Experts on Global Geospatial Information Management

The Economic and Social Council,

1. Takes note of the report of the Secretary-General on global geospatial information management and the recommendations contained therein;

2. Recognizes the need to promote international cooperation in the field of global geospatial information;

3. Decides, in this regard, to establish the Committee of Experts on Global Geospatial Information Management, in accordance with the terms of reference contained in the annex to the present resolution, to be established and administered within existing resources and organized accordingly, and requests the Committee to present to the Economic and Social Council in 2016 a comprehensive review of all aspects of its work and operations, in order to allow Member States to assess its effectiveness;

4. Encourages Member States to hold regular high-level, multi-stakeholder discussions on global geospatial information, including through the convening of global forums, with a view to promoting a comprehensive dialogue with all relevant actors and bodies;

5. Emphasizes the importance of promoting national, regional and global efforts to foster the exchange of knowledge and expertise, to assist developing countries in building and strengthening national capacities in this field.

47th plenary meeting
27 July 2011
UN-GGIM: our role as a formal inter-governmental Committee of Experts of the UN

- To be the apex organisation in the United Nations involved with geospatial information
- Make joint decisions and set directions on the use of geospatial information within national and global policy frameworks.
- Work with governments to improve policy, institutional arrangements, and legal frameworks.
- Address global issues and contribute collective knowledge as a community with shared interests and concerns.
- Develop effective strategies to build geospatial capacity in transitional and developing countries.
- To make accurate, reliable and authoritative geospatial information readily available to support national, regional and global development
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<tr>
<th>UN-GGIM: Asia-Pacific</th>
<th>UN-GGIM: Africa</th>
<th>UN-GGIM: Arab States</th>
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<tr>
<td>China Rep. of Korea Japan</td>
<td>Ethiopia Burkina Faso South Africa Tunisia</td>
<td>Saudi Arabia Jordan Algeria</td>
<td>Mexico Chile</td>
<td>Sweden Netherlands Spain</td>
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- **Working Group Geodetic Reference Frame for SD**
- **Working Group African Geodetic Reference Frame**
- **Working Group Institutional arrangements / Legal and policy**
- **Working Group Geospatial data collection and management**
- **Working Group Fundamental data**
- **Working Group Data integration**
- **Working Group Access and use of GI for disaster risk reduction**
- **Working Group Fundamental datasets**
- **Working Group Geodetic Reference Frame**
- **Working Group Standards and Technical specifications**
- **Working Group Promotion and evaluation of SDIs**
- **Working Group Institutional arrangements and legal frameworks**
- **Working Group Place-Based Information for Economic Growth**
- **Working Group Data Sharing & Integration for Disaster Mmnt.**
- **Working Group Institutional arrangements and legal frameworks**
- **Working Group Integration of geospatial & statistical info.**
- **Working Group Capacity and capability development.**

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**UN-GGIM Committee of Experts**

United Nations Committee of Experts on Global Geospatial Information Management

ggim.un.org
Geospatial information: Making a difference to national, regional and global prosperity

‘In Namibia a country in which water is a scarce resource…spatial data is only below water in significance’

Minister Alpheus G. !Naruseb, Minister of Lands and Resettlement, Namibia
## Existing Standards and the Inventory of Issues

<table>
<thead>
<tr>
<th>UN-GGIM issue</th>
<th>Number of standards</th>
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<td></td>
<td>ISO</td>
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<td>(a) Developing a national, regional and global strategic framework for</td>
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<td>geospatial information</td>
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<td>(b) Establishing institutional arrangements and legal and common frameworks</td>
<td>5</td>
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<td>(c) Building capability and capacity, especially in developing countries</td>
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<td>(d) Assuring the quality of geospatial information</td>
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<td>(e) Promoting data sharing, accessibility and dissemination</td>
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<td>(f) Embracing trends in information technology</td>
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<td>(g) Promoting geospatial advocacy and awareness</td>
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<td>(h) Working in partnership with civil society and the private sector</td>
<td>-</td>
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<tr>
<td>(i) Linking geospatial information to statistics</td>
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UN-GGIM and International Standards

“The Guide”

and

“The Companion Document”

Available to download from the UN-GGIM website
Sharing best practice

UN-GGIM website shares best practice models from around the world
Future trends in geospatial information management: the 5–10 year vision
Legal and Policy Frameworks

- UN-GGIM has:
  - Identified Legal and Policy Issues as one of the main challenges facing the geospatial community in the next ten years
  - Engaged with the Centre for Spatial Law and Policy and the International Bar Association to help identify issues
  - Conducted a survey of Member States to assess the impact on legal and policy issues on data collection, use and distribution
  - Formulated guidance on issues surrounding geospatial law
Smart Cities or is it Smart Services?

City Life
Live, work, Leisure, Learn

Smart Living
Smarter buildings/homes
Smart security

Smart Economy
Smart innovation programmes
Smart Economic hubs e.g. for logistics, business, tourism

Smart People
Smart Education

Smart Governance
Smart residents and visitors
Transparent governance

Smart Environment
Smart Utilities
Smart urban infrastructure

Smart Mobility
Smart transport
Smart urban infrastructure

Smart City Platform
connectivity, integration, collaboration

City Stakeholders
Government, Business, People

City Knowledge
Official data
Crowd sourced data

City Infrastructure
Internal location
- The number of small satellites is expected to treble over the next three years.
- The proposed usage for Earth Observation and Remote Sensing is expected to grow from 12% to 52% over the same period.

UAVs are now ubiquitous!
The World that Counts

- Published in November 2014
Sixty-sixth meeting of the UN Economic Commission for Europe

#UNGGIM Co-chair Dr Lawrence discusses the importance of #GI to the #datarevolution

UNECE @UN_ECE
V.Lawrence: Global Geospatial information is part of data revolution and helpful to #post2015 agenda #UNECE2015
Basic dGPS: 0.8-3m
RTK: 1-2cm
High Quality dGPS: 20-80cm
Standalone GPS: 10m
GGRF Applications
The Global Geodetic Reference Frame

Global Geodetic Reference System

Regional Reference System

Local application

National Reference System

UN-GGIM
United Nations Committee of Experts on Global Geospatial Information Management

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UN Resolution – Global Geodetic Reference Frame

• The United Nations Committee of Experts on Global Geospatial Information Management decided in July 2013 to formulate and facilitate a resolution for a global geodetic reference frame

• UN-GGIM recognises the growing demand for more precise positioning services, the economic importance of a global geodetic reference frame and the need to improve the global cooperation within geodesy
Global Geodetic Reference Frame for Sustainable Development

On Thursday 26th February 2015 the United Nations General Assembly adopted its first resolution recognizing the importance of a globally-coordinated approach to geodesy.

The resolution was introduced by Fiji, and was co-sponsored by 52 Member States.

More information can be found at: http://www.unggrf.org/ or by following @UNGGRF
Foundation Ceremony for the China International Forum on Geospatial Information in collaboration with UN-GGIM
Monitoring sustainable development: why location matters
The future we want: 19 June 2012

187. We recognize the importance of early warning systems as part of effective disaster risk reduction at all levels in order to reduce economic and social damages including the loss of human life, and in this regard encourage States to integrate such systems into their national disaster risk reduction strategies and plans. We encourage donors and the international community to enhance international cooperation in support of disaster risk reduction in developing countries as appropriate through technical assistance, technology transfer as mutually agreed, capacity building and training programmes. We further recognize the importance of comprehensive hazard and risk assessments, and knowledge and information sharing, including reliable geospatial information. We commit to undertake and strengthen in a timely manner risk assessment and disaster risk reduction instruments.

274. We recognize the importance of space-technology-based data, in situ monitoring, and reliable geospatial information for sustainable development policy-making, programming and project operations. In this context, we note the relevance of global mapping and recognize the efforts in developing global environmental observing systems, including by the Eye on Earth network and through the Global Earth Observation System of Systems. We recognize the need to support developing countries in their efforts to collect environmental data.
Rio+20 agreed that the new goals and targets need to finish the job that the Millennium Development Goals started post 2015.

Rio+20 Member States agreed to launch a process to develop a set of Sustainable Development Goals (SDGs) – these will be agreed by the General Assembly.

UN Secretary General published his report on the SDGs in Nov/Dec 2014.

UN General Assembly will agree the SDG’s in September 2015.
How can you evaluate, measure and monitor sustainable development...

...without location and geography?
GI and the post-2015 development agenda

“Geospatial information is fundamental to decision making, policy formulation, measuring and monitoring development elements, all critical to the post 2015 sustainable development agenda.”

Wu Hongbo, Under-Secretary-General for Economic and Social Affairs, 2014
The Post 2015 Agenda

- Proposed 17 Goals with 169 Targets
- The overall goal: By 2030 eradicate poverty in all its forms everywhere

https://sustainabledevelopment.un.org/sdgsproposal
Open Working Group goals that involve Geospatial Information

1. End poverty in all forms everywhere
2. End hunger, achieve food security and improved nutrition, and promote sustainable agriculture
3. Ensure healthy lives and promote well-being for all at all ages
4. Ensure inclusive and equitable quality education and promote life-long learning opportunities for all
5. Achieve gender equality and empower all women and girls
6. Ensure availability and sustainable management of water and sanitation for all
7. Ensure access to affordable, reliable, sustainable, and modern energy for all
8. Promote sustained, inclusive and sustainable economic growth
9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
10. Reduce inequality within and among countries
11. Make cities and human settlements inclusive, safe, resilient and sustainable
12. Ensure sustainable consumption and production patterns
13. Take urgent action to combat climate change and its impacts
14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development
15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
17. Strengthen the means of implementation and revitalize the global partnership for sustainable development
SDG Goals and Geospatial Data

- **Goal 1 | End Poverty**
  - Proposed indicator on losses from natural disasters
  - Poverty maps

- **Goal 2 | Hunger and Food Security**
  - Crop yield estimates, soil characteristics, crop water productivity, irrigation
  - Nutritional status maps

- **Goal 3 | Health and Well-being**
  - Health facility maps
  - Disease incidence and risk maps

- **Goal 4 | Education**
  - School facility maps
  - Literacy and educational achievement maps

- **Goal 6 | Water and Sanitation**
  - Water resources
  - Water and sanitation access maps

- **Goal 9 | Access to Infrastructure**
  - Roads, Public transportation
  - Mobility maps
  - Facilities inventories
• The General Assembly has decided that the OWG’s Outcome Document will be the main basis for integrating the SDGs into the future development agenda.
• 17 goals accompanied by 169 targets. Will be further elaborated through indicators focused on measurable outcomes.
• How many of these goals capture or include elements of geography, place, and location?
• As the apex global inter-governmental entity on geospatial information, how does UN-GGIM ensure geospatial information contributes more holistically to Sustainable Development?

http://sustainabledevelopment.un.org/focussdgs.html
Local to global framework geospatial datasets exist, but are they suitable and adaptable?

Positioning (Geodetic)
Address (Buildings)
Cadastre (Tenure)
Names (Gazetteer)
Water (Hydrology)
Administrative Boundaries
Transport
Bathymetry (Hydrography)
Land cover (Vegetation)
Elevation
Imagery (Satellite & Photo)
Need: Dynamic environmental information over space and time

... how much of it is readily able to be consumed by ecosystem models?

Source: European Environment Agency
**Target 11.5:**
By 2030 significantly reduce the number of deaths and the number of affected people and decrease by [x] percent the economic losses relative to GDP caused by disasters, including water-related disasters, with the focus on protecting the poor and people in vulnerable situations.

**Proposed Indicator 2:**
Number of housing units damaged and destroyed by disasters

Super Typhoon Haiyan Damage in Tacloban, Philippines
December 2013

Imaged with COSMO-SkyMed radar satellite constellation
Land Use and Land Cover Mapping

Borneo Island

Forest and land cover map featuring 18 classes
Fifth Session of the Committee and the final before the ECOSOC 2016 decision

Date: 5\textsuperscript{th} – 7\textsuperscript{th} August 2015; side events from 3\textsuperscript{rd} August 2015
Location: United Nations Headquarters, New York
More information: \url{http://ggim.un.org/ggim_committee.html}
UN-GGIM: making a difference nationally, regionally and globally