UN-GGIM-AP Forum on Geospatial and GNSS Infrastructure

16th October 2016,
Kuala Lumpur, Malaysia

Positioning geospatial information to address global challenges

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Global Geospatial Information Management

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SUSTAINABLE DEVELOPMENT GOALS

"Improved security of tenure for land and property can make a critical contribution to ensuring social and economic progress in rural and urban settings, supporting poverty reduction and furthering gender equality and peace and security. Land tenure, including a range of tenure types appropriate to local conditions and needs, such as community property rights and the protection of resource commons, creates certainty about what can be done with land or property and its use and can increase economic opportunities and benefits through investment, improving health, financial stability and personal safety"

(Statement by Ban Ki Moon,
Secretary General, United Nations, 2015)

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ACCESS Spatially enabled Data and Information FOR Knowledgeable Choices; Decisions and Actions

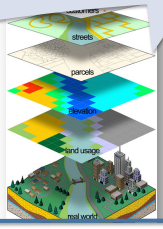
ACCESS Land and water, basic services FOR Adequate sustenance, shelter and safe spaces

ACCESS Opportunities (education, employment, etc..) FOR Dignity, Wellbeing, and Responsible inhabitants

Curate

Collate

Collect



Data and information consistently available and accessible over space and time

Land administration

Process

Data acquisition

Distribution

Processing

"Land administration is the process of determining, recording and disseminating of information about ownership, value and use of land when implementing land management policies".

Rights

Purposes

Assessment

Inventory

Land

(LADM: ISO 19152)

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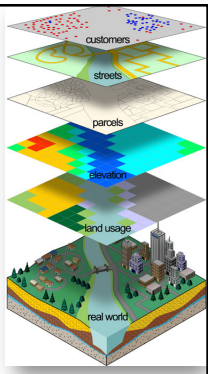
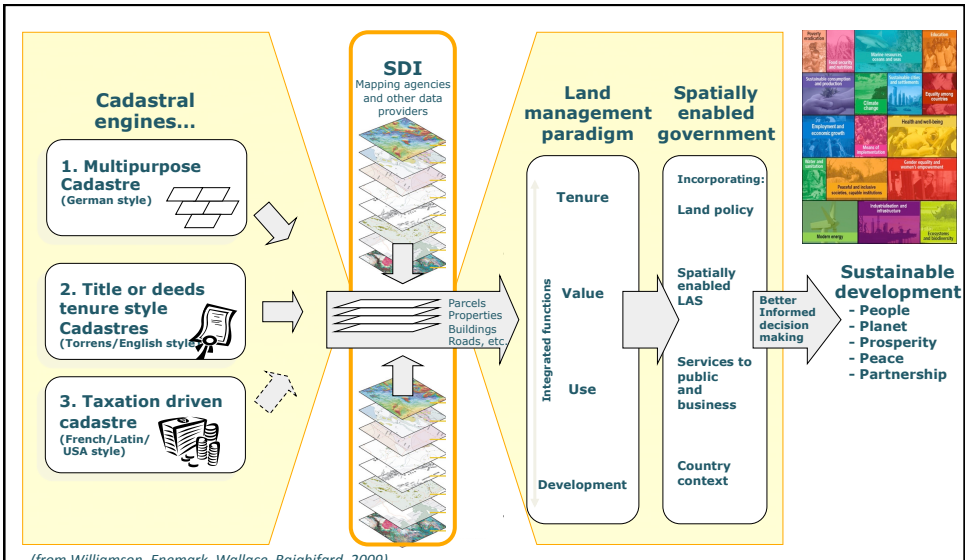
In this recent past, the convergence of sciences and technologies, of sensors and mobile computing, of world wide web and the cloud are stimulating greater demands for the integration of different data sets, of differing purposes, sources and scales. This has transformed the availability and accessibility, possibilities and potentials of information and knowledge derived from these integrated data sets, both in daily usage and decisions, as well as at the policy, decision-making and implementation levels, contributing to improved governance, leading to sustainable development.



The infrastructure to enable all these has to be considered critical infrastructure for any jurisdictions.

"Land information, together with a jurisdiction's spatial data infrastructure, now has the potential to transform the way a modern society functions"

(Ian Williamson, Uni. Of Melbourne, 2007)



(from Williamson, Enemark, Wallace, Rajabifard, 2009)

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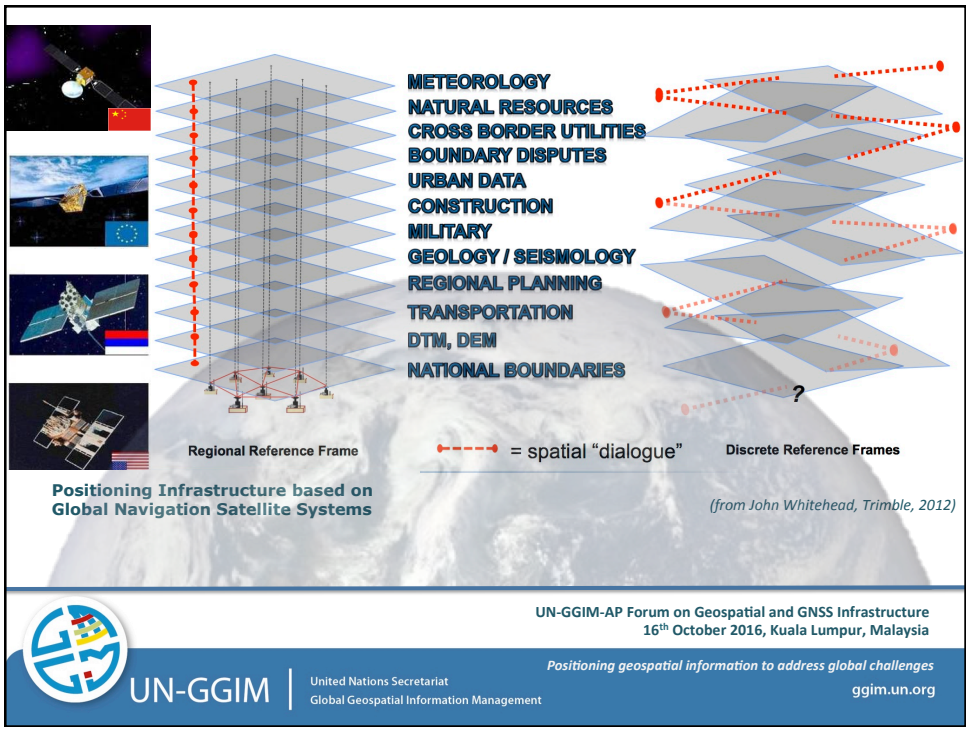
METEOROLOGY
NATURAL RESOURCES
CROSS BORDER UTILITIES
BOUNDARY DISPUTES
URBAN DATA
CONSTRUCTION
MILITARY
GEOLOGY / SEISMOLOGY
REGIONAL PLANNING
TRANSPORTATION
DTM, DEM
NATIONAL BOUNDARIES
?
Regional Reference Frame
= spatial "dialogue"
Discrete Reference Frames
Positioning Infrastructure based on Global Navigation Satellite Systems
(from John Whitehead, Trimble, 2012)
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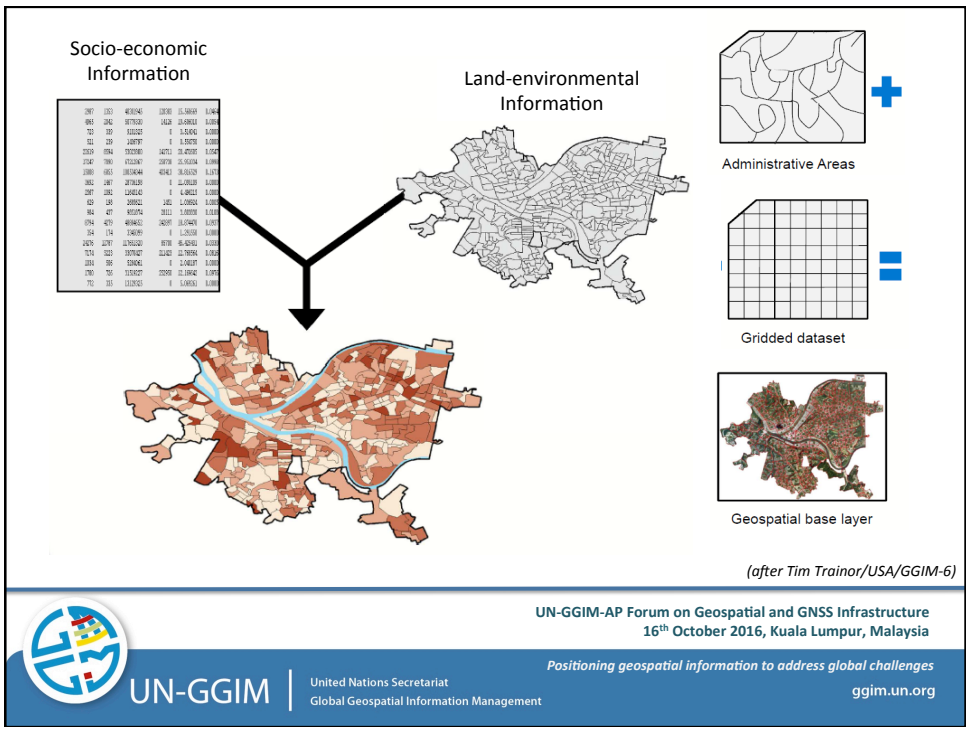
Socio-economic Information
Land-environmental Information
Administrative Areas
Gridded dataset
Geospatial base layer
(after Tim Trainor/USA/GGIM-6)
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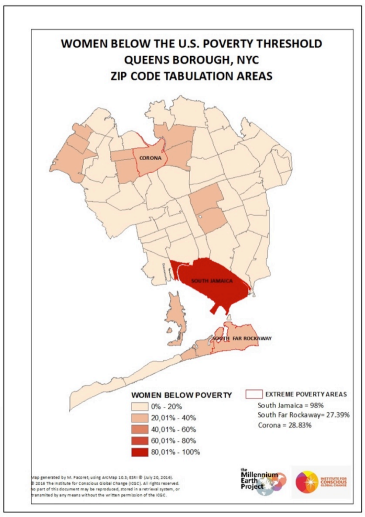
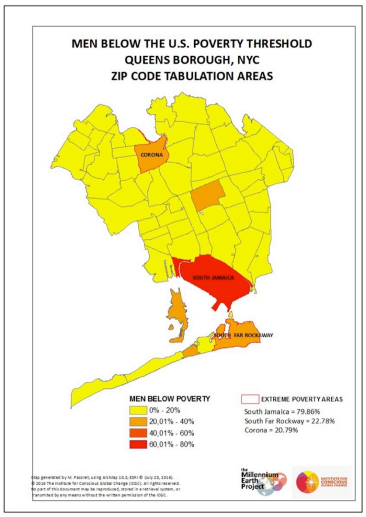
MAP 2

Source: U.S. Census Bureau.
POVERTY STATUS IN THE PAST 12 MONTHS 2010-2014
American Community Survey 5-Year Estimates. Table S1701

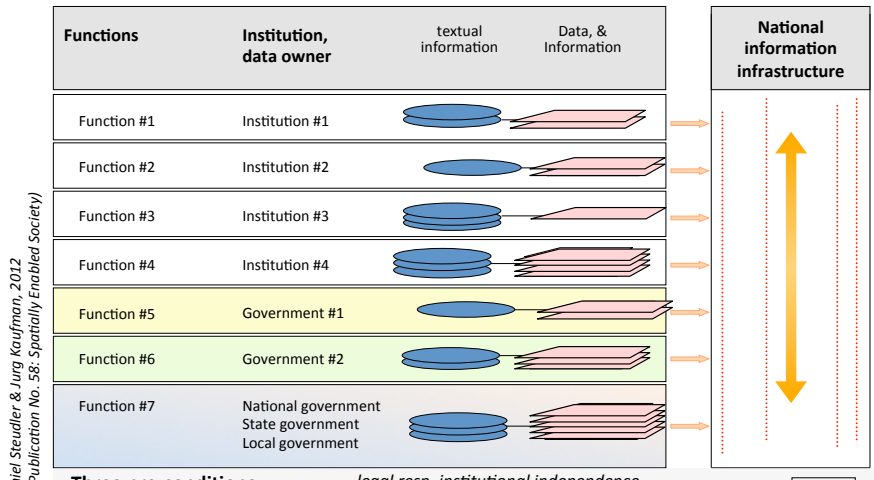
a project by INSTITUTE FOR CONSCIOUS GLOBAL CHANGE





(Source: Institute For Conscious Global Change)

Data & Information Collaboration Concept



(Daniel Steudler & Jurg Kaufman, 2012 FIG Publication No. 58: Spatially Enabled Society)

Three pre-conditions:

- *legal resp. institutional independence*
- ***common geodetic reference framework***
- *standardized data modelling concept*

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Global Land Challenges:

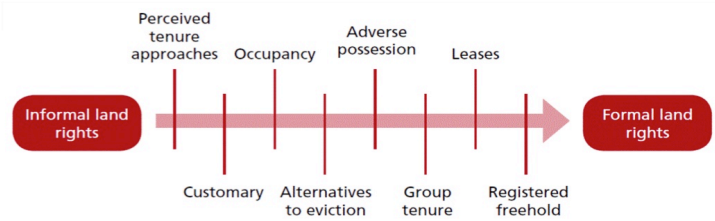
- Limited coverage (estimated only 30% globally, some countries as low as 3%)
- Complexity of land rights, claims and records (e.g. customary, statutory, informal)
- 70% - 75% of global population's relationship to land not recorded and recognized

Conventional systems cannot deliver tenure security at scale!

(UN-Habitat/Global Land Tool Network)

Landmark resolution on "Sustainable urbanization through equitable access to land, housing, basic services and infrastructure" adopted. (April 2011)

include rights that are documented as well as undocumented, from individuals and groups, from pastoralist and informal settlers, that are legal as well as extra-legal and informal



Continuum of Land Rights
a key concept to advance tenure security

The continuum ranges between the two extremes of highly informal and highly formal land rights. In between these extremes lie a wide and complex range of rights

- affording alternatives
- providing feasible path forward to make tenure systems work for all
- serving sustainable development

GLTN
GLOBAL LAND TOOL NETWORK

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VOLUNTARY GUIDELINES ON THE

Responsible Governance of Tenure

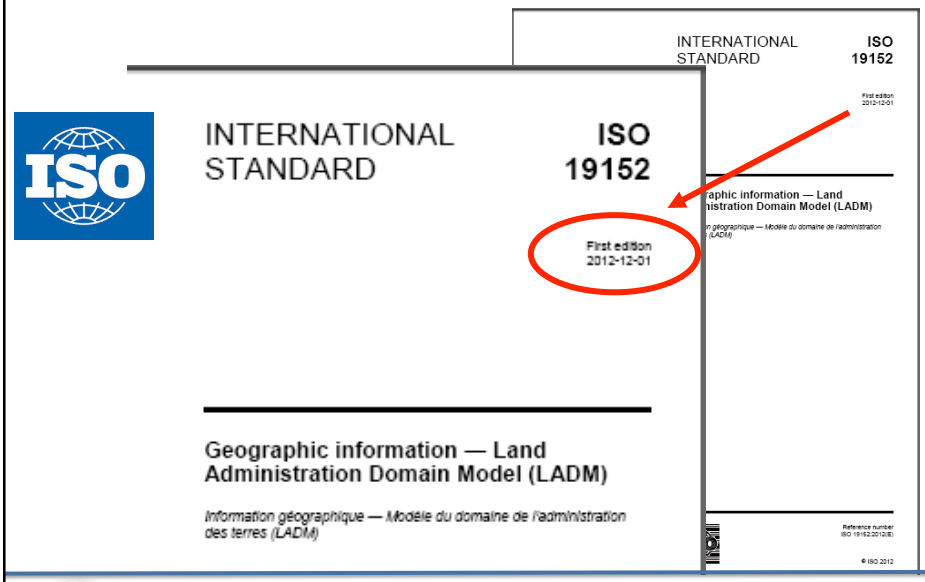
OF LAND, FISHERIES AND FORESTS IN THE CONTEXT OF NATIONAL FOOD SECURITY

Endorsed on 11th May 2012 by the United Nations Committee on World Food Security

HISTORIC INTERNATIONAL AGREEMENT ON THE GOVERNANCE OF TENURE

The Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security promote secure tenure rights and equitable access to land, fisheries and forests as a means of eradicating hunger and poverty, supporting sustainable development and enhancing the environment.

(Since then implementation has been encouraged by G20, Rio+ 20, United Nations General Assembly and Francophone Assembly of Parliamentarians.)



People-centric, purpose-driven approaches that include –

- **Flexible** in the spatial data capture
- **Inclusive** in scope to cover all
- **Participatory** to ensure community support
- **Affordable** for the government to establish and operate, and for society to use.
- **Reliable** in terms of information that is authoritative and current.
- **Attainable** within a short timeframe and with available resources.
- **Upgradeable,** improving over time in response to social and legal needs and emerging economic opportunities.

FIG-World Bank Declaration
on
Fit-for-Purpose Land Administration

There is an urgent need to build cost-effective and sustainable systems that identify the way land is occupied and used and accordingly provide for secure land rights. When considering the resources and capacities required for building such systems in less developed countries, the concepts of mature, sophisticated systems as predominantly used in developed countries may well be seen as the end target, but not as the point of entry. When assessing technology and investment choices, the focus should be on a "fit-for-purpose approach" that will meet the needs of society today and that can be incrementally improved over time.

A fit-for-purpose approach includes the following elements:

- ✓ ***Flexible*** in the spatial data capture approaches to provide for varying use and occupation.
- ✓ ***Inclusive*** in scope to cover all tenure and all land.
- ✓ ***Participatory*** in approach to data capture and use to ensure community support.
- ✓ ***Affordable*** for the government to establish and operate, and for society to use.
- ✓ ***Reliable*** in terms of information that is authoritative and up-to-date.
- ✓ ***Attainable*** to establish the system within a short timeframe and within available resources.
- ✓ ***Upgradeable*** with regard to incremental improvement over time in response to social and legal needs and emerging economic opportunities.

A country's legal and institutional framework must be revised to apply the elements of the fit-for-purpose approach. This means that the fit-for-purpose approach must be enshrined in law and that the information be made accessible to all users.

A fit-for-purpose approach will ensure that appropriate land administration systems are built within a relatively short time frame and affordable costs. The systems allow for incremental updating and upgrading. This approach will facilitate economic growth, social equity and environmental sustainability to be better supported, pursued and achieved.

March 2014
World Bank, Washington DC

The World Bank
1818 H Street NW,
Washington, DC 20433,
United States of America
url: www.worldbank.org

International Federation of Surveyors
Kalvebod Brygge 31-33
DK-1780, Copenhagen V,
Denmark
url: www.fig.net

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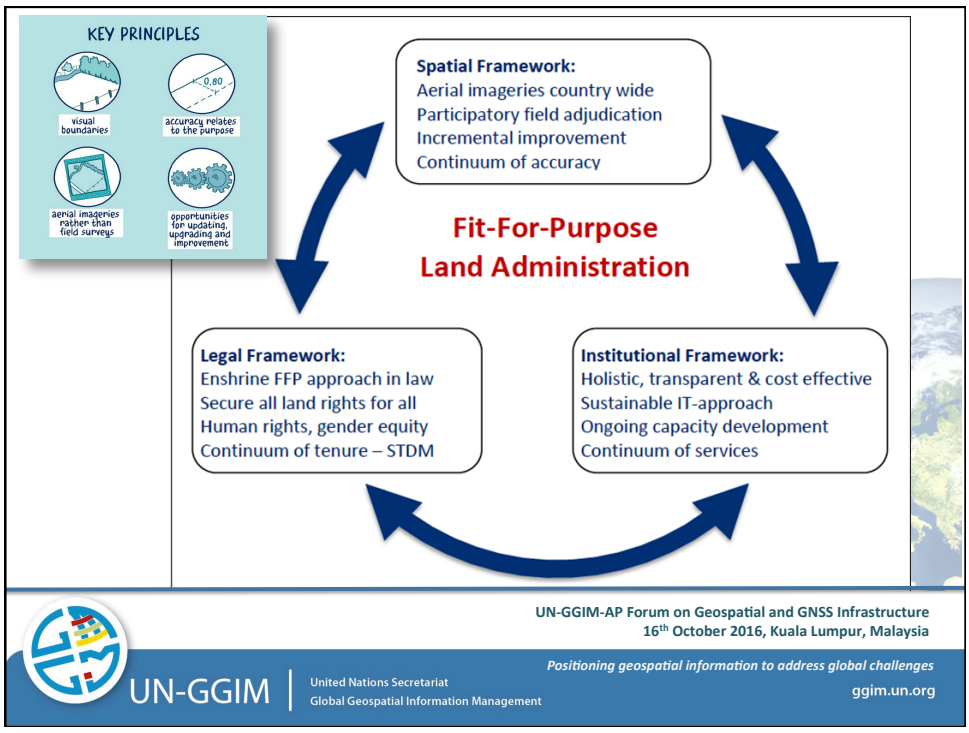

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NEW URBAN AGENDA

156. We will promote the development of national information and communications technology policies and e-government strategies as well as citizen-centric digital governance tools, tapping into technological innovations, including capacity development programmes, in order to make information and communications technologies available to the public, including women and girls, children and youth, persons with disabilities, older persons and persons in vulnerable situations, to enable them to develop and exercise civic responsibility, boradening participation and fostering responsible governance, as well as increasing efficiency. **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.**

11 SUSTAINABLE CITIES AND COMMUNITIES

HABITAT III 2016

H III HABITATIII QUITO - OCTOBER 2016

SDG Indicators –

1.4.2 Proportion of total adult population with secure tenure rights to land, with legally recognized documentation and who perceive their rights to land as secure, by sex and by type of tenure

2.4.1 Proportion of agricultural area under productive and sustainable agriculture

5.a.1 (a) Proportion of total agricultural population with ownership or secure rights over agricultural land, by sex; and (b) share of women among owners or rights-bearers of agricultural land, by type of tenure

5.b.1 Proportion of countries where the legal framework (including customary law) guarantees women's equal rights to land ownership and/or control

15.1.1 Forest area as a proportion of total land area

(source: UN-ECOSOC E/CN.3/2016/2/Rev.1)

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As the peak inter-governmental mechanism to make joint decisions and set directions on the production and use of geospatial information within national and global policy frameworks, UN-GGIM also provides a forum for Member States to strengthen the geospatial information management capacities of developing countries for better policy making at national, regional and global levels.

Sub-committee

1. Geodesy

Expert Groups

1. Integration of Statistical and Geospatial Information
2. **Land Administration and Management (UN-GGIM: EG-LAM)**

Working Groups

1. Statement of Shared Principles for the Management of Geospatial Info
2. Trends in National Institutional Arrangements in Geospatial Information Management
3. Fundamental Geospatial Data Themes
4. Geospatial Information and Services for Disasters (WG-Disasters)

IAEG-SDGs

1. Working Group on Geospatial Information

Objectives of UN-GGIM: EG-LAM

- Play a leading role at the policy level by **raising political awareness** and highlighting the importance to decision makers of the need for timely and fit for purpose land administration and management and;
- **Encourage** the use of **geospatial information** tools and systems to improve the legal certainty of all citizens in the world with respect to the registration of the relation between people and land.

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Membership of UN-GGIM: EG-LAM

Lesotho (co-Chair)		Netherlands (co-Chair)	
Belgium	Burkina Faso	Canada	Chile
China	Finland	Guyana	Korea (Republic of)
Mexico	Norway	Singapore	Spain
Sri Lanka	Suriname	Sweden	United Kingdom
IHO	UN-Habitat/GLTN	FAO	World Bank
UNECE/WPLA	FIG	GSDI	OGC
ESRI			

Currently 27 members; 18 member states, 5 from UN System; international organisations and 1 from industry

Thank You

http://ggim.un.org
Global Geospatial Information Management
United Nations Statistics Division
Department of Economic and Social Affairs

The 7th session of the United Nations Committee of Experts on Global Geospatial Information Management, is scheduled to be held from 2 – 4 August 2017

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