Session 1B: Future Geospatial Information Ecosystem

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Moderated by Dr. Greg Scott, Inter-regional Advisor, UN-GGIM



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Session Outline

- Welcome and opening remarks Dr. Greg Scott
- Geospatial ecosystems and how they differ from SDI's Dr. Zaffar Sadiq Mohamed Ghouse
- Drivers for change and technologies enabling change Ms. Ananya Narain
- Bridging the digital divide with knowledge on-demand Dr. Lesley Arnold
- Discussion Are we moving in the right direction?
 Ms. Barbara Ryan, Ms. Meizyanne Hicks, Ms. Ingrid Vanden Berghe, Mr. David Henderson and Mr. Sanjay Kumar



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Drivers for change and the technologies enabling change

Ms. Ananya Narain

Director, Consulting, Geospatial World



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Macro Drivers for Change

Unified solutions to global problems

- Harness geospatial intelligence from a local to global level
- Integrated solutions to address common challenges
- Benefit of ripple effect
- Leverage global Innovation

Equitable access to knowledge on-demand

 Societal expectations for knowledge on-demand

- Designed for general users
- Innovation will require data to can be processed and contextualised for the individuals in real time.

Bridge the geospatial digital divide

- An ecosystem accessible and usable to all
- Knowledge' available to everyone
- Design the future ecosystem with a priority on putting developing nations at the centre of everything we do

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Mega Drivers of Change



Digital Technology Advancements



New Geospatial Data Sources and Geospatial Technology Innovations



Emphasis on Geospatial Data and its Dynamics



Advancing User Demand and Expectations



Progressing to Become a Multi-Stakeholder Ecosystem



Realignment of Business Models



Focus on Strategic National Priorities and SDGs



Evolving Role of Federal Geospatial Data Providers



Analysis and Automation



Unearthing the 'Economics' of Geospatial



Source: UN-GGIM Discussion Paper on Future National Geospatial Ecosystem

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The Changing Geospatial Ecosystem

Knowledge Based

Real-time generation and integration of data

Future Generation

Integration of data from private (geospatial and other digital/data economy generated data), citizen and academia

Data

1st Generation

Data/Product Based

Linkages of existing and future database

Data producers (NMA) - focusing on data production, database creation and centralization

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2nd Generation

Process Based

Creation of an Infrastructure to facilitate the management of info assets

Driven by data sharing and re-using data collected by wide range of agencies for a diversity of purpose

Changing geospatial landscape

- New geospatial data sources and services
- Technological advances
- (Digital Twin/Metaverse)
- More automation, analytics, and intelligence
- Changing user expectations
- Transforming Organizations vision and mission

Role

Profound impact of Technology (Moving towards 4th Industrial Revolution and Way Forward)

National Government

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The Knowledge Paradigm

The Knowledge Management Cognitive Pyramid demonstrates the relationship between data and knowledge. 4IR technology increasingly enable knowledge to be generated 'automatically', improving decision making and adding value.

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Value

Spatial Data Infrastructure (SDI)

Data Centric

Centralized System

Desktop/Web portal

2D representation

Technologiesenabling Change-

Developing a

complex, and

interconnected

ecosystem -

taking into

consideration

IGIF

Supply-centric

Limited Data Range

Professional users only

Linear and Independent

No analysis/No modelling

Government

Web 1.0-Web 2.0 Information and Commerce

GEOSPATIAL KNOWLEDGE INFRASTRUCTURE (GKI)

Analytics-centric (fit for analysis data)

Distributed System

Distributed cloud-based

4D/5D representation

Demand-centric (user centric)

Dynamic data with wide range of data (crowdsourced, mobile, IoT)

Including non-spatial users

Intelligent Search

On-the fly data analysis / Predictive Modelling

Government, industry and citizens

Web 3.0 – Semantic Web

Need of ecosystem thinking and behaviour

Technologies, Market and Value-Impact Drivers Considering the Realities beyond the 2030 SDGs Future Geospatial Ecosystem

Decision-centric (decision-based outcomes)

Distributed System / Data Mesh Architecture

Distributed Cloud-based (Ubiquitous / Pervasive Computing)

5D/6D representation

Value-impact centric

Bidirectional flow of data; synthetic data, and new data collection tools

Includes Machines

Cognitive Search to Neural Lace

Advanced Augmented Analytics / Prescriptive Analytics

Broader Stakeholder Group (including economists, statisticians)

Web-4.0, The Meta Intelligent Web

Network of Integrated Ecosystems of Ecosystems

DATA AND INFORMATION

KNOWLEDGE

WISDOM

Discussion - Are we moving in the right direction?

Moderator Dr. Greg Scott Inter-regional Advisor, UN-GGIM, United Nations

Panellists

Ms. Barbara Ryan, Executive Director, World Geospatial Industry Council
Ms. Meizyanne Hicks, Director Geospatial Information Division, L&S Dept, Fiji
Ms. Ingrid Vanden Berghe, Administrator General, National Geographic Institute, Belgium, Co-Chair, UN-GGIM

Mr. David Henderson, Chief Geospatial Officer, Ordnance Survey, UK

Mr. Sanjay Kumar, CEO, Geospatial World

