Current and future land administration ecosystems

- Report on the keynote segment of the 13th session -

FIG

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FIG Task Force on the Role of FIG in International Trends and Future Geospatial Information Ecosystem

84th session of the UNECE Committee on Urban Development, Housing and Land Management
Palais des Nations, Geneva, Switzerland, 04-06 October 2023

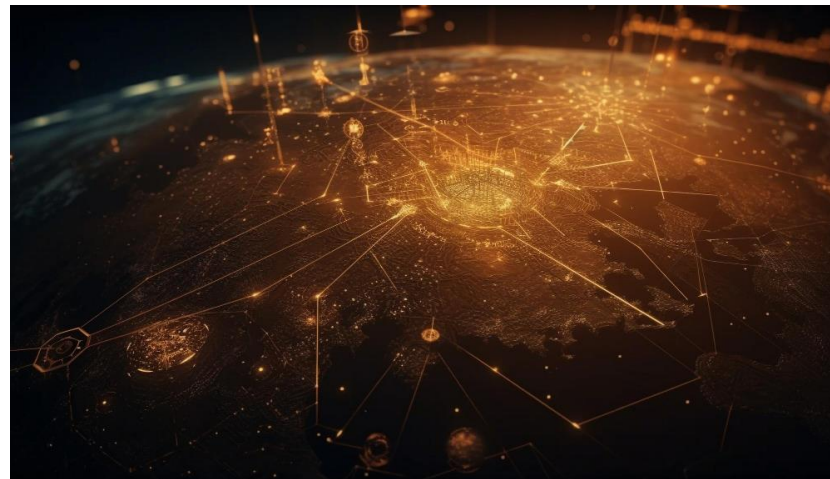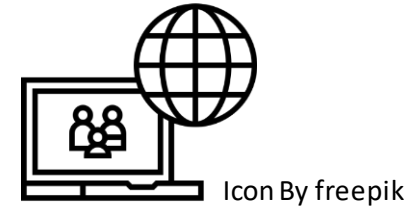Item 6 (g) Land administration and land management, 05 October 2023, Thursday, 16:00-17:00

Image By vecstock

What is a digital ecosystem?

What is a geospatial ecosystem?

Icon By freepik

➤ *Drawing on knowledge about natural ecosystems, we define a geospatial ecosystem as a system in which a community of actors (individuals or organizations and increasingly 'intelligent' machines) interacts via the geospatial information and technologies in their environment.*

➤ *The geospatial ecosystem is coordinated and shaped by a multitude of stakeholders and self-organises through both competition and collaboration.*

➤ *In this regard the diversity of actors is important: if they do not differ and add value in some fundamental way, they will competitively exclude each other.*

➤ *The geospatial ecosystem provides a variety of goods and services on which people depend.*

https://ggim.un.org/meetings/GGIM-committee/11th-Session/documents/~
Towards_a_Sustainable_Geospatial_Ecosystem_Beyond_SDIs_Draft_3Aug2021.pdf
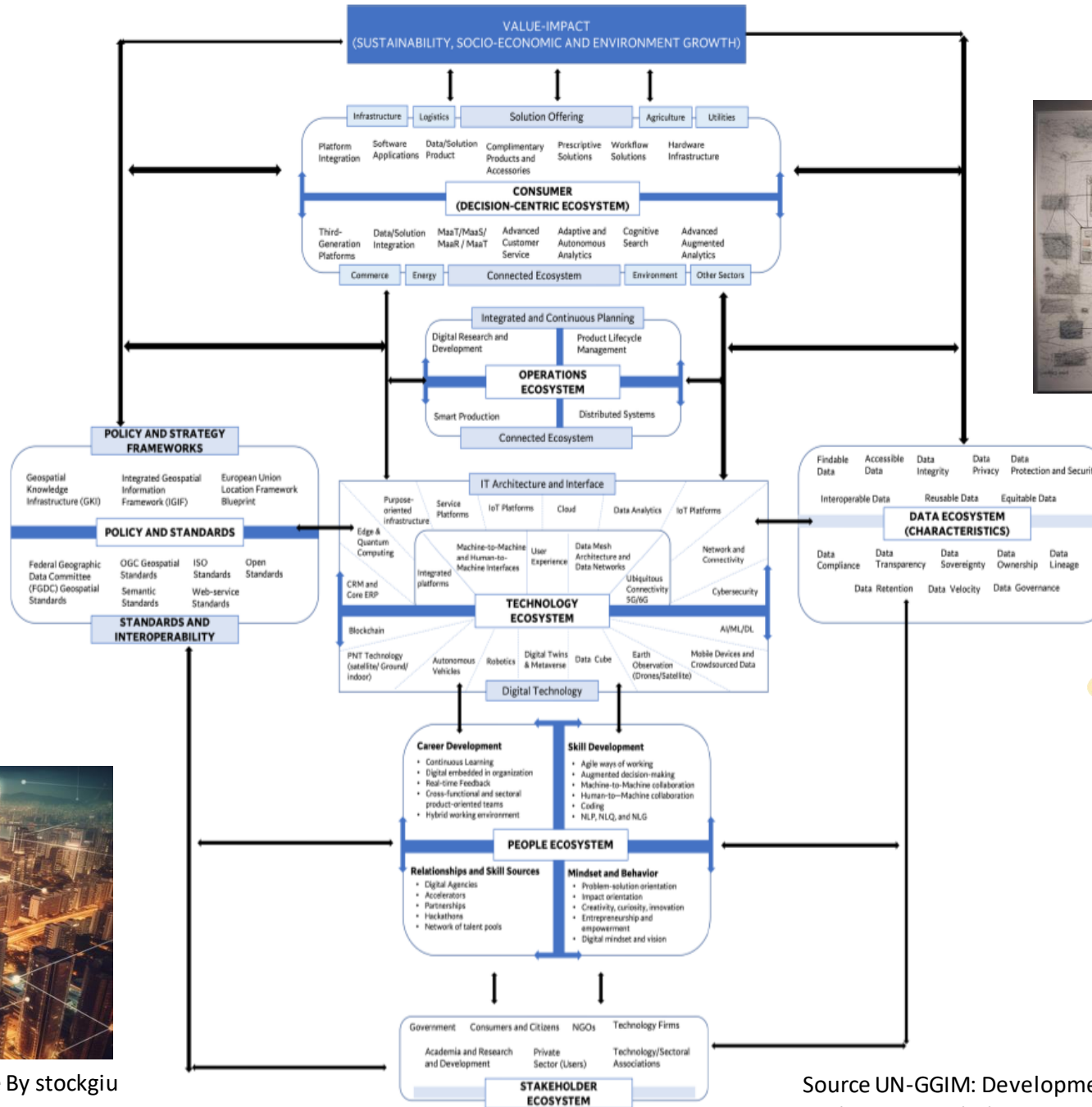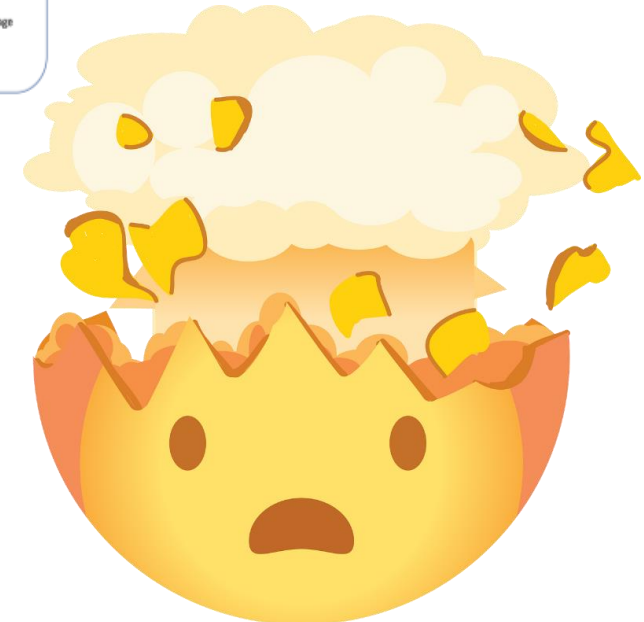
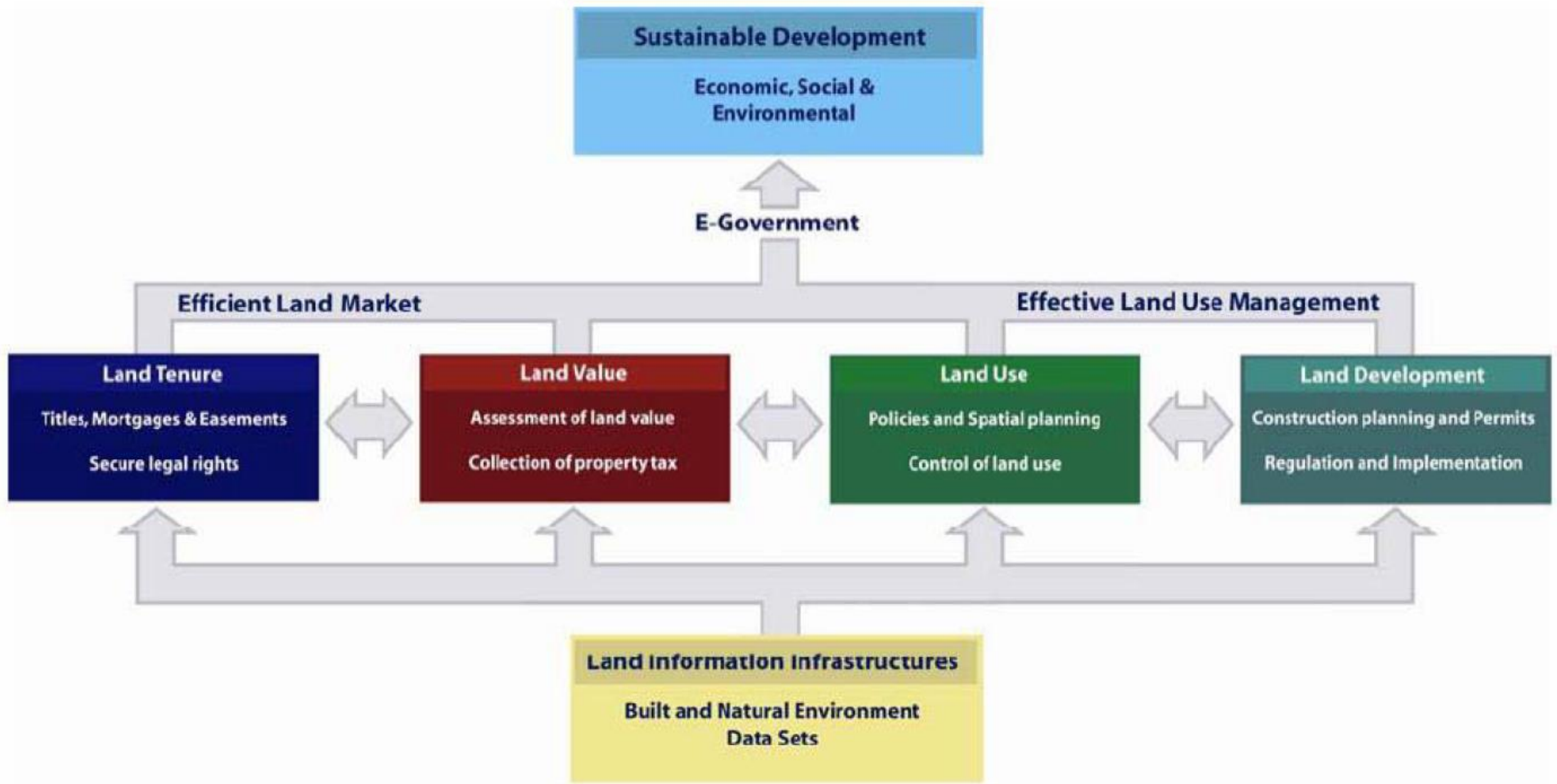# What is a geospatial ecosystem?
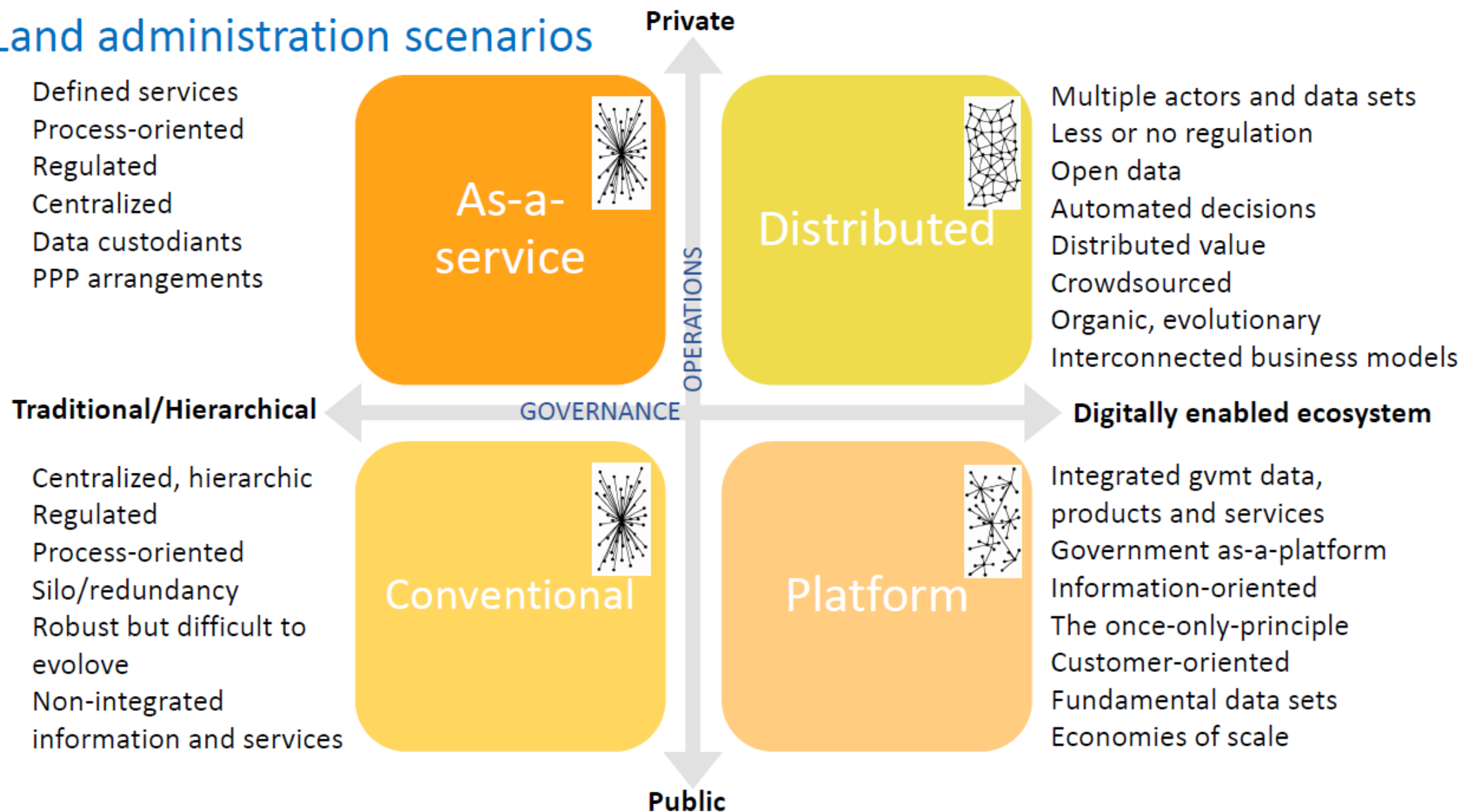

Image By vecstock

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Source UN-GGIM: Development of contextual understanding, information, and analytics towards determining the national geospatial information ecosystem, discussion paper, July 2022

Enemark, S., Williamson, I. P., & Wallace, J. (2005). Building modern land administration systems in developed economies. Journal of Spatial Science, 50(2), 51-68.

Land administration scenarios

Defined services
Process-oriented
Regulated
Centralized
Data custodiants
PPP arrangements

As-a-service

Multiple actors and data sets
Less or no regulation
Open data
Automated decisions
Distributed value
Crowdsourced
Organic, evolutionary
Interconnected business models

Distributed

OPERATIONS

Traditional/Hierarchical GOVERNANCE **Digitally enabled ecosystem**

Centralized, hierarchic
Regulated
Process-oriented
Silo/redundancy
Robust but difficult to evolove
Non-integrated information and services

Conventional

Integrated gvmt data, products and services
Government as-a-platform
Information-oriented
The once-only-principle
Customer-oriented
Fundamental data sets
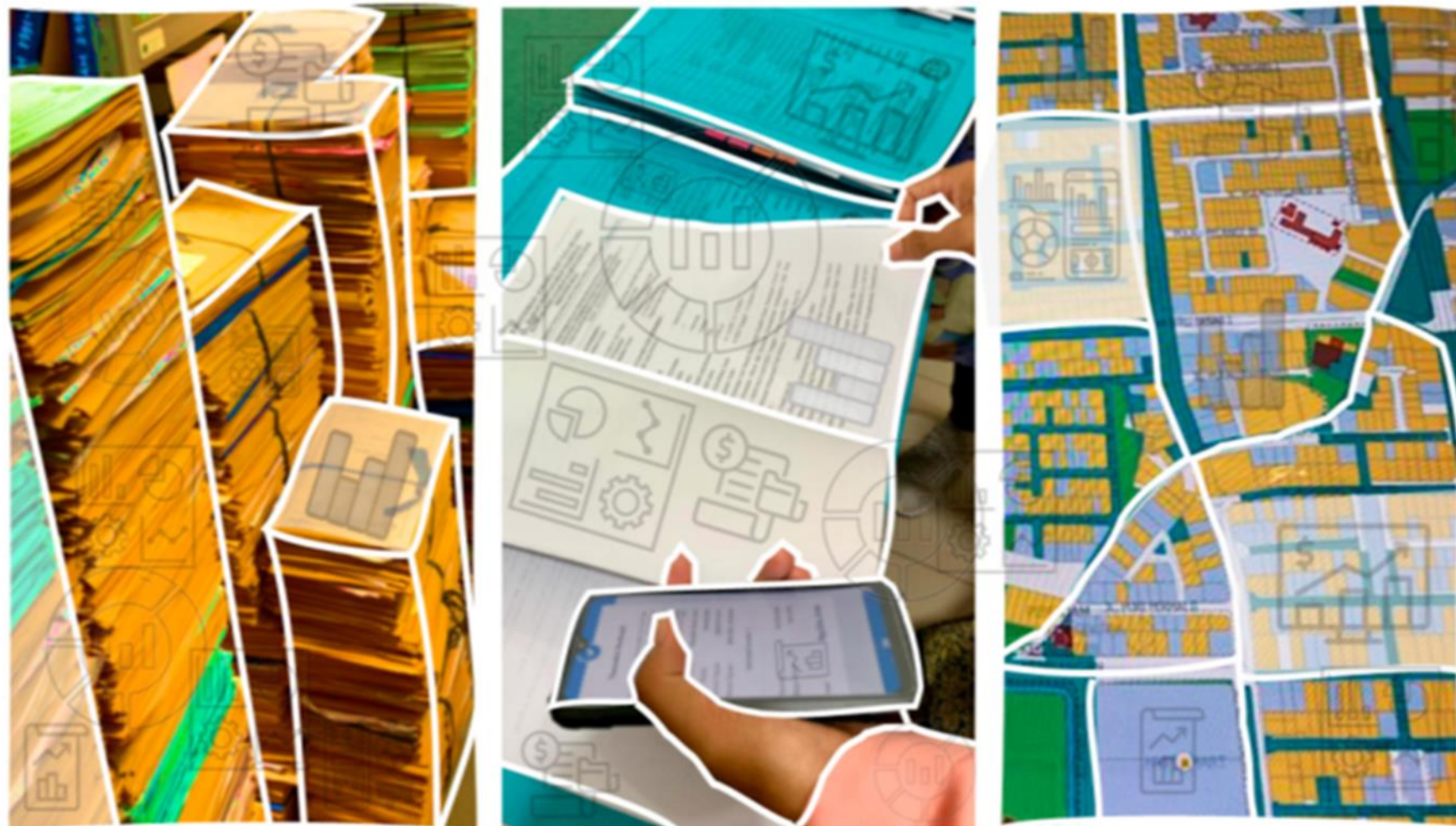Economies of scale

Platform

Public

4 April 2023
13th Session UNECE WPLA, Geneva, Switzerland

Digital Transformation and Land Administration

Sustainable Practices from UNECE Region and Beyond

Presenter:

Hartmut Müller, Prof. Dr.-Ing., FIG
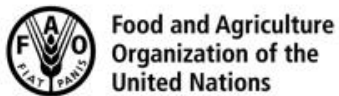
Digital Transformation and Land Administration

Digital Transformation and Land Administration
Sustainable Practices from UNECE Region and Beyond, FAO-UNECE-FIG Guide

Funding Digital Transformation in Land Administration, *FAO-FIG Knowledge for Investment Brief*

Take away and recommendations

Land Administration Systems must move from focusing on conventional key performance indicators (KPIs) (e.g. numbers of transactions), **to a broader perspective on outcomes and social impact.**

LAS have to demonstrate contributions to the country priorities (for example, agriculture development, climate change, disaster risks management. Health crises, economic development, etc.) and to the land-related SDGs:

- **No poverty** (Target 1.4);

- **Zero hunger** (Target 2.3 and 2.4);

- **Gender equality** (Target 5.a);

- **Sustainable cities and communities** (Target 11.1, 11.3, 11.7);

- **Life on land** (Target 15.1, 15.2, and 15.3)

Interactive poll (1 June 2021)

TODAY

EXPECTED 2030

DESIRED 2030
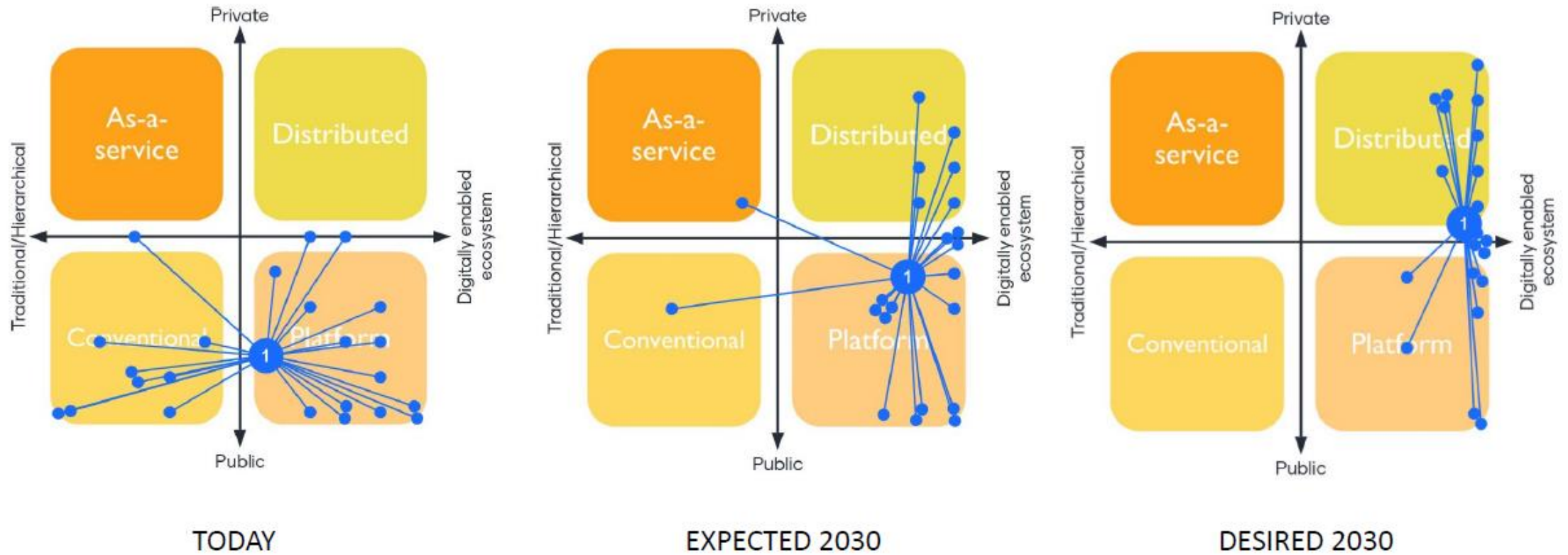
Mentimeter results WPLA Digital transformation

How well are the following LA functions in your country embracing digital transformation?

Not at all — Very well

- Cadaster and land registration services — 8.2
- Land use planning and urban development processes — 6.5
- Spatial data infrastructure arrangements — 7.4

To what extent are the following aspects aligned/ready to fully benefit digital disruption within LA arrangments in your country?

To a very low degree — To a very high degree

- Technology uptake — 7.4
- Competence and skills — 6.9
- Legal adaptations — 6.7
- Digital collaboration ecosystems among actors — 6.4
- Leadership adaptation to the new environment — 6.7

How well is digital transformation in the land/geospatial sector coordinated with overall national digital transformation policies and initiatives?
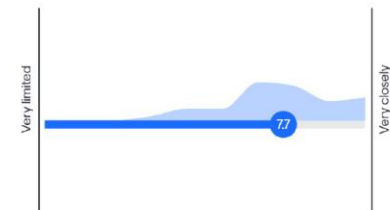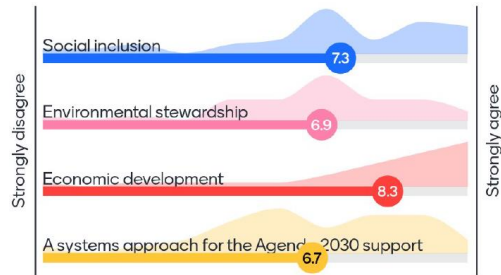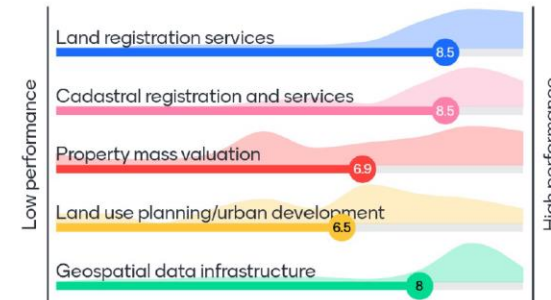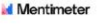
Very limited — Very closely — 7.7

Image By vecstock

Mentimeter results WPLA ecosystems and security for LA arrangements
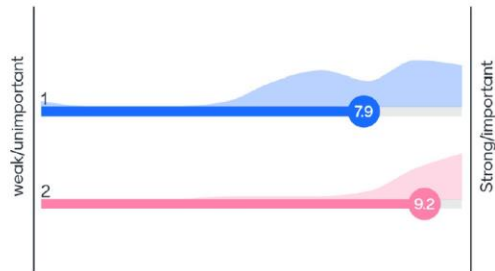
FIG WORKING WEEK 2023
28 May - 1 June 2023 Orlando Florida USA
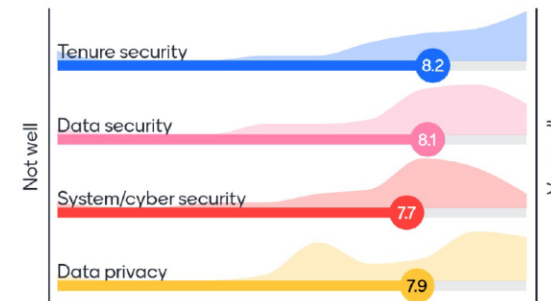
Protecting
Our World,
Conquering
New Frontiers

FIG Task Force on

Trends and Future Geospatial
Information Ecosystem

FIG Director Generals' Forum 2023

Daniel Steudler, FIG Vice President, DG Forum, Tuesday, 30 May 2023

FIG WORKING WEEK 2023
28 May - 1 June 2023 Orlando Florida USA
Protecting Our World, Conquering New Frontiers

Panel, chaired by Daniel Steudler, FIG Vice-President

Greg Scott	Inter-Regional Advisor, UN-GGIM Secretariat
Victor Khoo	Director, Survey & Geomatics, SLA | Vice-President, UN-GGIM Asia Pacific
Pekka Halme	Senior Advisor, National Land Survey of Finland
Frank Tierolff	Chair of the Executive Board, Kadaster Netherlands
Abdul Hanan Iddrissu Abu	Deputy Director of Surveys, Ghana Lands Commission

Daniel Steudler, FIG Vice President, DG Forum, Tuesday, 30 May 2023

Take-away messages

Surveying Profession
- to adapt its mind set from technology-driven to outcome-focussed
- need to understand and speak terminology of decision-makers
- to break up the data silos and establish and populate the digital geospatial ecosystem with information

FIG
- to take a pro-active role in offering input and services to international bodies such as UN and the World Bank
- to seek strategic collaboration for promoting and implementing of the IGIF at a country level

Daniel Steudler, FIG Vice President, DG Forum, Tuesday, 30 May 2023

Take-away messages

Task Force

- interrelationships between different technological trends as well as their impacts on abilities of member states to respond to major global challenges.

- new technological advancements such as AI, ML, IoT, 3D scanning, etc. in capturing, using, analyzing geospatial data, as well as innovative platforms such as Digital Twins, in visualization, modelling, forecasting, etc. in delivery new services to wider communities

- new skill requirements by members and the plan of providing such skills

Some Conclusions

➢ Land administration systems are part of the geospatial ecosystem

➢ The lack of open, harmonised and interoperable information models and datasets across land, built environment and natural environments limits achieving sustainability

➢ Land Administration Systems must move from focusing on conventional key performance indicators to a broader perspective on outcomes and social impact

➢ In many countries, digital transformation of LAS is on its way towards implementation

➢ UN GGIM's IGIF Integrated Geospatial Information Framework provides a methodology for country level action plans

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