



**FIG WORKING WEEK 2023**

28 May - 1 June, 2023, Orlando, Florida, USA

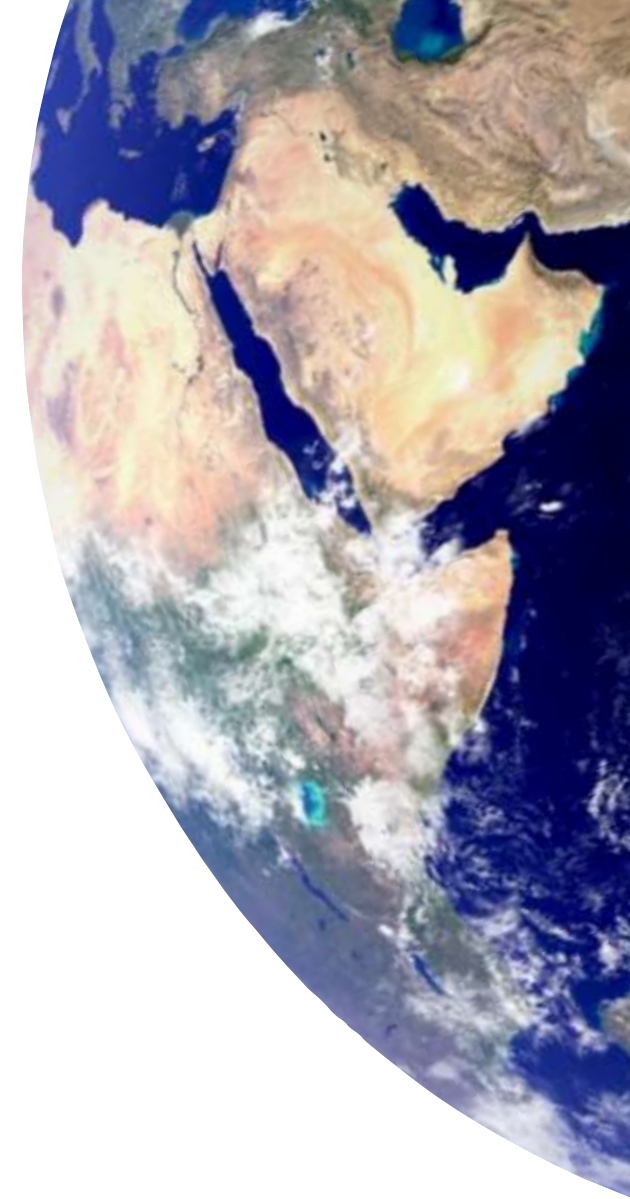


Protecting Our World, Conquering New Frontiers

Presented at the FIG Working Week 2023,  
28 May - 1 June 2023 in Orlando, Florida, USA

# Implementing the Framework for Effective Land Administration (FELA): New Workplan and Developments

**Kean Huat SOON** and Victor KHOO  
*Singapore Land Authority*



UN-GGIM

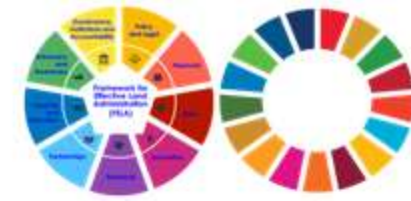
United Nations Committee of Experts on  
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EXPERT GROUP ON  
LAND ADMINISTRATION AND MANAGEMENT

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# Expert Group on Land Administration and Management (EG-LAM)



## UN-GGIM's Functional Groups

### High-level Group

1. High-level Group of the Integrated Geospatial Information Framework

### Subcommittee

1. Subcommittee on Geodesy (formerly WG on Global Geodetic Reference Frame)

### Expert Groups

1. Expert Group on the Integration of Statistical and Geospatial Information
2. Expert Group on Land Administration and Management

### Working Groups

1. Working Group on Geospatial Information and Services for Disasters
2. Working Group on Policy and Legal Frameworks for Geospatial Information Management
3. Working Group on Marine Geospatial Information

Current members (17 -> 28)

Member States (28)	Professional Bodies (9)
Barbados	IHO
Belgium	FAO
Burkina Faso	UNECE-WPLA
Canada	UN-Habitat/GLTN
Chile	World Bank
China	Standards Development Organisation
Egypt	
Finland	UN-GGIM: Geospatial Societies
Germany	UN-GGIM: Academic Network
Guyana	UN-GGIM: Private Sector Network
India	
Korea (Republic of)	
Kuwait	
Lesotho	
Mexico	
Morocco	
Netherlands	
Norway	
Philippines	
Saudi Arabia (Kingdom of)	
Singapore	
Spain	
Sri Lanka	
Suriname	
Sweden	
Tonga (Kingdom of)	
United Arab Emirates	
United Kingdom	

- was endorsed in August 2015
- Current Co-chair: Mr Victor Khoo (Singapore)

## Objectives

- Play a leading role at the policy level;
- Encourage the use of geospatial information tools and systems.

## Functions

- Provide a forum for global experts;
- Propose work plans to address main areas of focus
- Address governance, data management, institutional and technology adoption and sustainability issues;
- Undertake work that contributes to the Sustainable Development Goals;

<https://ggim.un.org/UN-EG-LAM/>

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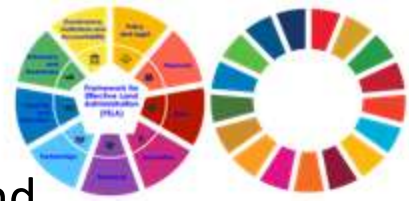


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# Framework for Effective Land Administration (FELA)



A reference for developing, renewing, reforming, strengthening, modernizing, or monitoring land administration, cognizant of national priorities and circumstances.

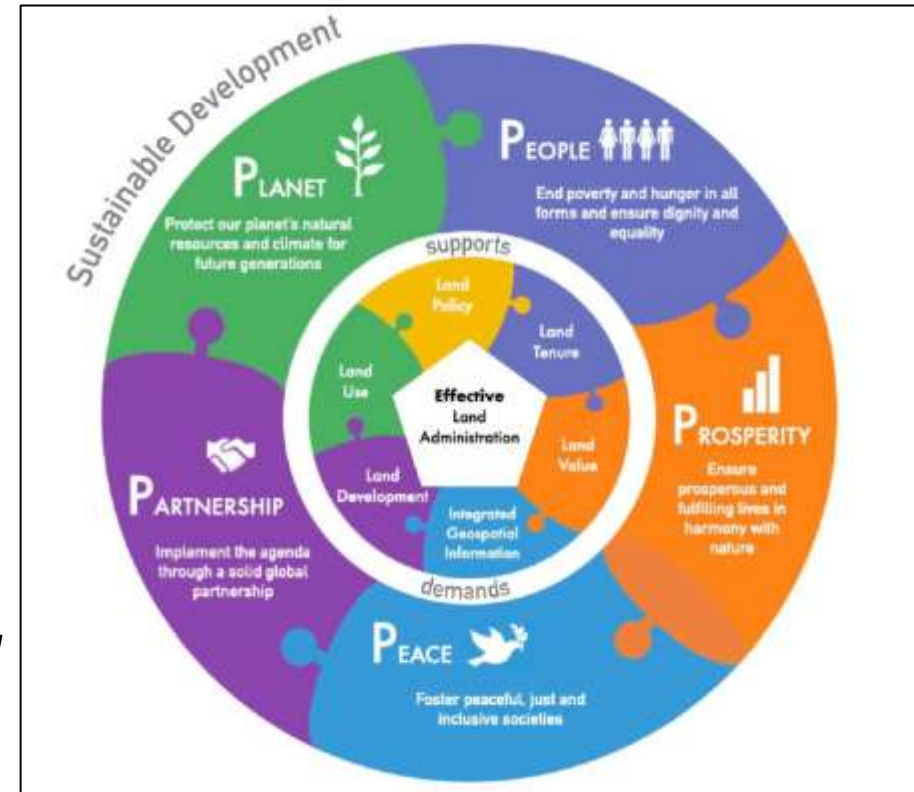
Endorsed in August 2020 and now it is at Implementation phase

## Vision

*Secured people to land relationships in all forms for the wellbeing of partnerships, planet, prosperity and peace.*

## Mission

*To provide leadership, coordination and internationally recognized standards, and support responsible innovation and partnerships, for effective land administration to realise sustainable social, environmental and economic development.*



[https://ggim.un.org/meetings/GGIM-committee/10th-Session/documents/E-C.20-2020-29-Add\\_2-Framework-for-Effective-Land-Administration.pdf](https://ggim.un.org/meetings/GGIM-committee/10th-Session/documents/E-C.20-2020-29-Add_2-Framework-for-Effective-Land-Administration.pdf)



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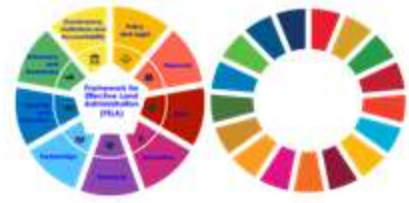
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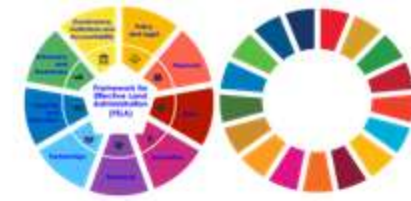
# 9 Strategic Pathways of FELA (aligned with UN Integrated Geospatial Information Framework (UN-IGIF))



- To guide the implementation of FELA,
- To support the IGIF implementation for land sector,
- To achieve the SDGs and sustainable development.



# Workplan 2023 – 2025: Overview

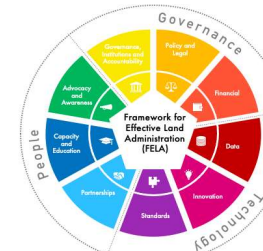


## 1. Leadership and Advocacy in Effective Land Administration

- 1. Promote and raise awareness of the merits and benefits of **effective land administration**;
- 2. Encourage, promote and develop **guidance** for Member States to implement FELA at country level.

## 5. Engagement and collaboration including to further anchor the FELA in the UNGGIM programme of Work

- 11. Identify, agree and **work on cooperative projects** including with UN-GGIM regional committees, functional groups, thematic networks and relevant stakeholders.



## 2. Promote and encourage the implementation of the FELA at the country level

- 3. Review, elaborate and adapt the **UN-IGIF Implementation Guide** and related implementation resources to further guide and support the implementation of FELA according to national circumstances and needs;
- 4. Encourage volunteered **translation** of the FELA into languages other than English to support raising of awareness and promote better understanding;
- 5. Facilitate sharing and exchange of knowledge, information, experiences, and practices, including relevant **use cases** and implementation examples.

## 4. Innovation in land administration and management to strengthen resilience and sustainability



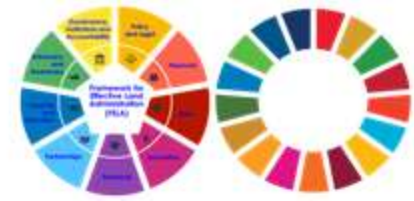
## 3. Integration of terrestrial, maritime, built and cadastral domains

- 6. **Gain better understanding** through cooperative project and activities.

- 7. Promote effective land administration **within an 'ecosystem'** or **'interconnected domains'**;
- 8. Address **rights, restrictions and responsibilities** associated with land;
- 9. Address **digital and mobile access** to land information including cybersecurity and data security mechanisms to protect vital land information;
- 10. Address the integration of information related to **land tenure, land value, land development, land use and land use change**.

<https://ggim.un.org/documents/EG-LAM Work plan 2023-2025 Final.pdf>

# Focus Area 1: Leadership and Advocacy



## Plans/Activities

### Scope 1

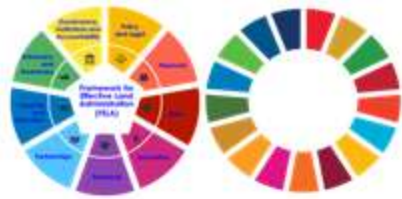
Promote and raise awareness of the merits and benefits of **effective land administration**;

### Scope 2

Encourage, promote and develop **guidance** for Member States to implement FELA at country level.

- Report to the annual sessions of UN-GGIM in 2023, 2024 and 2025
- Convene side events on effective land administration on the margins of the annual sessions of UN-GGIM in 2023, 2024 and 2025
- Convene virtual and in-person meetings of the Expert Group to advance the objectives, functions and workplan of the Expert Group
- Convene a third and fourth edition of the International Seminar on Effective Land Administration alongside in-person meetings of the Expert Group





# Organizing International Seminar on “Geo-Enabled Effective Land Administration” – March 14, 2023 in Singapore

**Focus Area 1:** Leadership and Advocacy

**Focus Area 5:** Engagement and collaboration including to further anchor the FELA in the UNGGIM programme of Work

Supported By:



 Dr. Rohan Bennett Chair International Federation of Surveyors (FIG) Commission 7	 Prof. Chen Jun Chief Scientist National Geomatics Center, China	 Dr. Tang Hui Assistant Professor National University of Singapore	 Dr. Nadine Alameh Chief Executive Officer Open Geospatial Consortium	 Mr. Shi Lye Chong Assistant Chief Executive Singapore Land Authority
 Ms. Theng Wei Lin Deputy Chief Executive Singapore Land Authority	 Mr. Cheong Wei Keat Deputy Director Singapore Land Authority	 Mr. Antonius Wijanarto President UN-GGIM-AP	 Dr. Victor Khoo Co-Chair of EG-LAM Vice-President of UN-GGIM-AP	 Mr. Sheehi Oki Vice-President UN-GGIM-AP
 Mr. Sukit Kumar Vice-President UN-GGIM-AP	 Mr. Kim Mumsang Assistant to Chair of WSG UN-GGIM-AP	 Dr. Zaffar Sadiq Mohamed Ghousse Chair UN-GGIM Private Sector Network Board	 Dr. Alias Abdul Rahman Professor Universiti Teknologi Malaysia	 Prof. Abbas Rajabfar Professor University of Melbourne
 Mr. Mika-Petteri Törhönen Lead Land Administration Specialist Worldbank				

## GEO-ENABLED EFFECTIVE LAND ADMINISTRATION

AN INTERNATIONAL SEMINAR SUPPORTED BY EG-LAM, FIG AND UN-GGIM-AP

8.15am - 9am	Arrival and Registration
9 am - 9.45am	<b>Opening Session</b> Introduction: Mr. Evert MULDER, Singapore Land Authority Welcome Address by Host: Ms. Theng Wei Lin, Deputy Chief Executive, Singapore Land Authority, Singapore Welcome Remarks: • Dr. Victor KHOO, Co-Chair, United Nations Expert Group on Land Administration and Management, Singapore • Mr. Antonius WIJANARTO, President, UN-GGIM Asia Pacific, Indonesia • Dr. Zaffar Sadiq MOHAMED GHOUSE, Chair, UN-GGIM-PSN, Australia • Dr. Rohan BENNETT, Chair, FIG Commission 7, Australia
9.45 am - 10.15am	Coffee Break
10.15 am - 12pm	<b>Plenary Session 1 - Effective Land Administration</b> Facilitator: Prof. Abbas RAJABFAR Presentations: • Mr. Cheong Wei Keat, Singapore Land Authority, Singapore • Prof. Abbas RAJABFAR, University of Melbourne, Australia • Mr. Mikko-Petteri TÖRHÖNEN, World Bank • Mr. Suresh KUMAR, Survey of India, India • Mr. Muthuling KOKK, IC, the Republic of Korea
12pm - 1.30pm	Lunch
1.30pm - 3.15pm	<b>Plenary Session 2 - Interoperability and Innovation in Land Administration and Management to Strengthen Resilience and Sustainability</b> Facilitator: Dr. Nadine ALAMEH Presentations: • Mr. Shi Lye Chong, Singapore Land Authority, Singapore • Dr. Nadine ALAMEH, Open Geospatial Consortium • Dr. Rohan BENNETT, FIG Commission 7 • Dr. TANG HUI, National University of Singapore
3.15pm - 3.45pm	Coffee Break
3.45pm - 5.30pm	<b>Plenary Session 3 - Availability and Accessibility of Reliable Geospatial Information</b> Facilitator: Dr. Zaffar Sadiq MOHAMED GHOUSE Presentations: • Prof. CHEN Jun, National Geomatics Center, China • Mr. Antonius WIJANARTO, Geospatial Information Agency, Indonesia • Dr. Alias ABDUL RAHMAN, Universiti Teknologi Malaysia, Malaysia • Dr. Zaffar Sadiq MOHAMED GHOUSE, UN-GGIM-PSN • Mr. Sheehi Oki, Geospatial Information Authority of Japan, Japan
5.30pm - 6pm	<b>Closing Session</b> Facilitator: Mr. Evert MULDER Summary Remarks by Facilitators: • Prof. Abbas RAJABFAR • Dr. Nadine ALAMEH • Dr. Zaffar Sadiq MOHAMED GHOUSE

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<https://bit.ly/38wvwt>



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# Focus Area 2: Promote and encourage the implementation of the FELA at the country level



## Scope 3

Review, elaborate and adapt the UN-IGIF Implementation Guide and related implementation resources to further guide and support the implementation of FELA according to national circumstances and needs;

## Scope 4

Encourage volunteered translation of the FELA into languages other than English to support raising of awareness and promote better understanding;

## Scope 5

Facilitate sharing and exchange of knowledge, information, experiences, and practices, including relevant use cases and implementation examples.

## Plans/Activities

- Joint activities with EuroSDR and FIG Commission 7
- Joint outcome reports
- Joint publications with FIG Commission 7





# Working with International Federation of Surveyors



## 1) A session at FIG Working Week 2023 on FELA



### FRAMEWORK FOR EFFECTIVE LAND ADMINISTRATION (FELA) (T501110520)

Commission 7 & UN-GGIM EG-LAM  
Chair: Mr. Victor Khoo, Singapore  
Rapporteur: Mr. Kean Huat Soon, Singapore

FELA was endorsed by UN-GGIM in August 2020. It seeks to demonstrate, in tangible ways, how land administration systems can directly support the 2030 Agenda and achievement of the SDGs. This session unpacks what has happened since 2020, in terms of FELA translations, country-level programs, and implementation tools.

Guiding Questions for discussions:

- Is the global agenda on track?
- What is the role of FELA?
- What is the role of FIG and UN-GGIM?

**Kean Huat Soon** and **Victor Khoo** (Singapore)

Implementing the Framework for Effective Land Administration (FELA): New Workplan and Developments (12061)

[\[abstract\]](#) [\[paper\]](#) [\[handouts\]](#) [\[video\]](#)

**Mikael Ljå** (Sweden)

The UN-GGIM Integrated Geospatial Information Framework and the status of the High-Level Group of the IGF (11937)

[\[abstract\]](#) [\[paper\]](#) [\[handouts\]](#) [\[video\]](#)

**Jean-Philippe Lestang** (France)

Improved Land Management, a Key Factor for a Stable and Protective Social Economic Development (12041)

[\[abstract\]](#) [\[paper\]](#) [\[handouts\]](#) [\[video\]](#)

**Charisee Griffith-Charles** (Trinidad And Tobago)

Land Registration for Conquering New SDG Frontiers (12099)

[\[abstract\]](#) [\[paper\]](#) [\[handouts\]](#) [\[video\]](#)

**Brandon Tourtelotte**, **Katie Pickett** (USA) and **Kees de Zeeuw** (Netherlands)

FELA-based Geospatial Knowledge Infrastructure (12127)

[\[abstract\]](#) [\[paper\]](#) [\[handouts\]](#) [\[video\]](#)

**Eva-Maria Unger**, **Rohan Bennett** (Netherlands), **Mahamat Abdoulaye Maloum**

(Chad), **Christelle van den Berg** (Netherlands), **Claudia Stöcker** (Germany), **Kasper**

**Kondevrt** (Rwanda), **Dina Naguib** (Egypt), **Markus Koper** (Germany), **Divyani Kohli**

and **Mila Koeva** (Netherlands)

Fit-For-Purpose Land Administration and the Framework for Effective Land Administration in Chad (12242)

[\[abstract\]](#) [\[paper\]](#) [\[handouts\]](#) [\[video\]](#)

**Focus Area 2:** Promote and encourage the implementation of the FELA at the country level

**Focus Area 5:** Engagement and collaboration including to further anchor the FELA in the UNGGIM programme of Work

## 2) A new Working Group is formed under Commission 7

### Working Group 7.1 – Framework for Effective Land Administration (FELA)

Chair(s)

Amalia Velasco, in collaboration with Eva María Unger and Carmen Femenia

- Develop a FIG guide on FELA implementation at national level.
- Study of the main problems encountered by national land administration organizations in implementing FELA principles.
- Examples and analysis of national cases:
- Develop a recommendations list for FIG members in application of FELA principles



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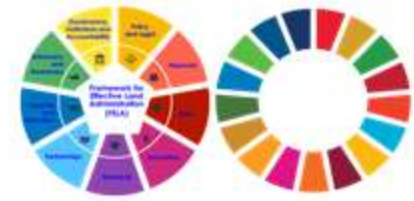
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# Focus Area 3: Integration of terrestrial, maritime, built and cadastral domains



## Plans/Activities

### Scope 6

**Gain better understanding**  
through cooperative project  
and activities.

- The integration of height and chart datums (with the Working Group on Marine Geospatial Information and the IHO-Singapore Innovation and Technology Laboratory)
- Authoritative data, data sharing and integration (with the Working Group on Policy and Legal Frameworks for Geospatial Information Management)
- Understand the role of open standards, keep abreast with and support the development of ISO 19152 LADM and relevant IHO and OGC standards
- Develop a brief or paper to elaborate key considerations in the integration of terrestrial, maritime, built and cadastral domains



# Working Group on Policy and Legal Frameworks for Geospatial Information Management



## Focus Area 3: Integration of terrestrial, maritime, built and cadastral domains



### 2.1.4 Effective land administration<sup>13</sup> to achieve authoritativeness

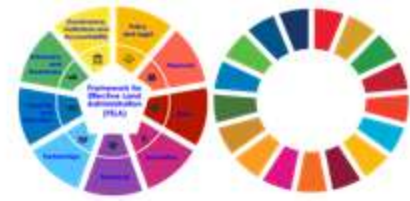
Land administration is a societal activity both shaping and shaped by governance, institutions, and associated with accountability and authority. Conventionally, land administration is mandated through national or state land laws, and underpinning land policy frameworks. Systems have developed with supportive policies, legislation, safeguards, accountability mechanisms, and protections around data and privacy. This strong legal backing often differentiates land data from other types of geospatial information. Effective land administration is crucial to ensure the authoritativeness of the land data to be used for the people and by the people. The nine pathways, in particular, Pathway II: Policy and Legal and Pathway IV: Data, of the [Framework for Effective Land Administration \(FELA\)](#) affirmed the data relating to land tenure, land use, land value, and land development are fundamental geospatial data themes within any jurisdiction. This data informs on the 'how', the 'what', the 'who', the 'when' and the 'where' of land tenure, land use, land value, and land development.

Land data laws and directives may have prescribed collection, ordering, and storage methods. However, it is important to recognize the dualist and pluralist inherent to some land administration systems, particularly in developing contexts. Parallel systems may have evolved over time and parts may be closely linked to the cultural and customary ways of life, which may not always be catered for by statutory law. The customs, traditions and land tenure systems of indigenous peoples are equally to be recognized alongside statutory law. Similarly, in coastal zones, multiple legal regimes may coexist.

Data relating to land tenure, land use, land value, and land development are fundamental geospatial data themes within any jurisdiction, underpins the processes and transactions that enable changes to the status of land tenure, land use and land value. Defining requirements of land data are the need for appropriate spatial accuracy, the requirement to be temporally up-to-date, and to be backed up, assured and potentially insured by an authority. Without these elements, the data is quickly undermined in terms of societal use and relevance. Availability, accessibility, and interoperability of the land data are also necessities for effective land administration. ISO 19152 (Land Administration Domain Model) and IHO S-121 (Maritime Limits and Boundaries) provide starting points for creating these qualities.



# Focus Area 4: Innovation in land administration and management to strengthen resilience and sustainability

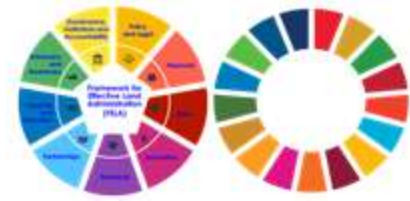


## Plans/Activities

- Scope 7** Promote effective land administration within an 'ecosystem' or 'interconnected domains';
- Scope 8** Address rights, restrictions and responsibilities associated with land;
- Scope 9** Address digital and mobile access to land information including cybersecurity and data security mechanisms to protect vital land information;
- Scope 10** Address the integration of information related to land tenure, land value, land development, land use and land use change.

- Discuss and consider Scope #7- #10 during virtual and in-person meetings of the Expert Group
- Report on outcomes of considerations to UN-GGIM at its annual sessions in 2023, 2024 and 2025 (an issue at a time)

# Focus Area 5: Engagement and collaboration including to further anchor the FELA in the UNGGIM programme of Work



## Scope 11

Identify, agree and work on cooperative projects including with UN-GGIM regional committees, functional groups, thematic networks and relevant stakeholders.

## Plans/Activities

- To continue on-going research project with EuroSDR
- To organize a seminar on FELA with UN-GGIM-AP at GeoConnect 2023 (14 March 2023)
- Cooperation with the International Federation of Surveyors (FIG) Commission 7 including to organize joint sessions/workshops/seminars at FIG Working Weeks<sup>1</sup> and Commission 7 Annual Meetings<sup>2</sup> aiming at effective land administration and the implementation of FELA at the country-level
- To organize two (2) in-person expert meetings and international seminar – (4Q2023/1Q2024, host to be decided), and 2Q2025, SLA, Singapore).

<sup>1</sup>: 28 May – 1 June 2023 (Orlando, United States of America); 19 – 24 May 2024 (Accra, Ghana); 01 – 05 June 2025 (Brisbane, Australia)  
<sup>2</sup>: 02-04 October 2023 (Deventer, the Netherlands)



# Collaboration with OGC and other NMAs



**Focus Area 3:** Integration of terrestrial, maritime, built and cadastral domains

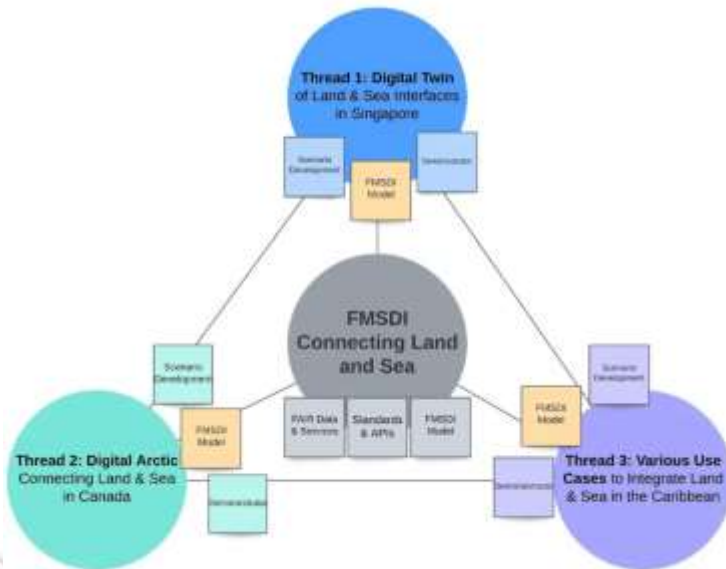
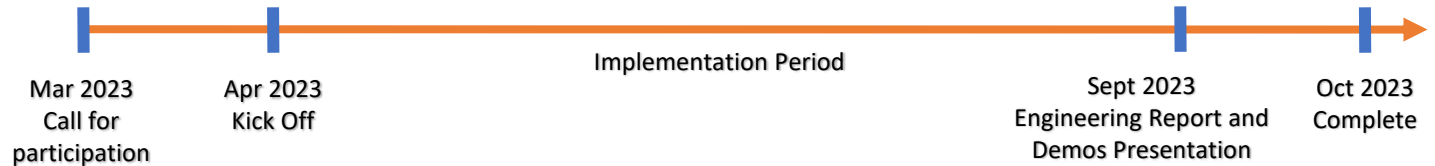
**Focus Area 4:** Innovation in land administration and management to strengthen resilience and sustainability

**Focus Area 5:** Engagement and collaboration including to further anchor the FELA in the UNGGIM programme of Work

## Main Objective:

Demonstrating interoperability between land and marine data that is necessary to understand coastal environments and land-sea interactions.

## Timeline:



Technical Architecture of the FMSDI Pilot 2023 (three threads and their cross relationships)

## Sponsors:

- Maritime and Port Authority of Singapore (MPA)
- National Oceanic and Atmospheric Administration (NOAA)
- Natural Resources Canada (NRCan)
- Singapore Land Authority (SLA)
- UK Hydrographic Office (UKHO)

<https://www.ogc.org/initiatives/fmsdi4/>



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