Expert Consultation and Meeting on Enhancing Geospatial Information Management Arrangements and Accelerating Implementation of the Sustainable Development Goals, and the Sub-regional Workshop on the United Nations Integrated Geospatial Information Framework (UN-IGIF) for Central Asia, South Asia, and neighboring countries

Introduction to UN-IGIF and Its Implementation

Astana, Kazakhstan
15-19 September 2025

GLOBAL DEVELOPMENT FRAMEWORKS

GLOBAL GEOSPATIAL FRAMEWORKS

2030 AGENDA FOR SUSTAINABLE DEVELPMENT

INTEGRATED GEOSPATIAL INFORMATION FRAMEWORK (UN-IGIF)

- Paris Agreement on Climate Change
- Sendai Framework for Disaster Risk Reduction 2015-2030
- Strategic Framework on Geospatial Information & Services for Disasters
- Global Statistical Geospatial Framework
- Framework for Effective Land Administration
- Operational Framework for Integrated Marine Geospatial Information Management

ABAS Declaration for Resilient Prosperity

Addis Ababa Action Agenda

Habitat III New Urban Agenda

Our Ocean, Our Future: Call for Action

Global Fundamental Geospatial Data Themes

Global Geodetic Reference Frame

National Institutional Arrangements in Geospatial Information Management

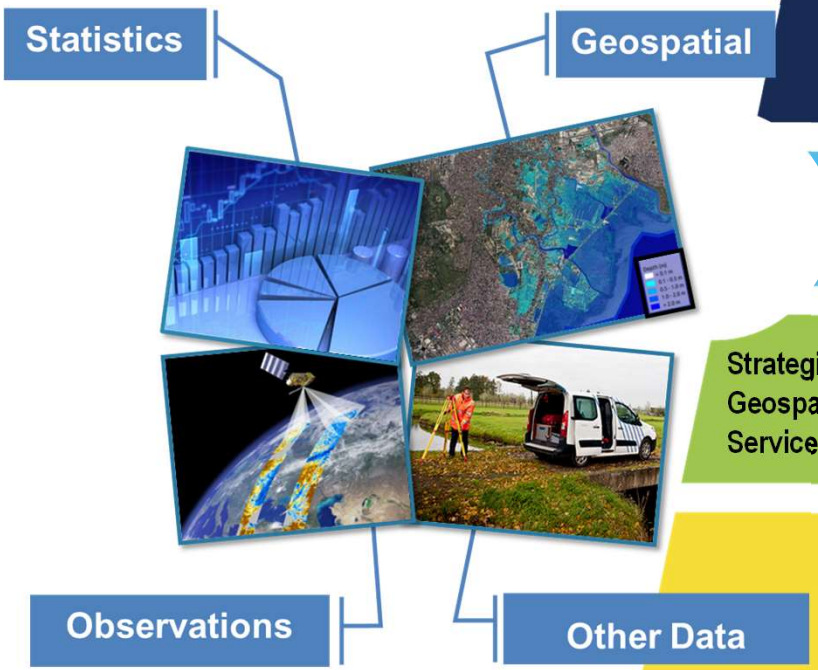
Compendium on Licensing of Geospatial Information

Statement of Shared Guiding Principles for Geospatial Information Management

Future trends in Geospatial Information Management

Geospatial information for sustainable development

Interoperability and Integration



GLOBAL GEOSPATIAL FRAMEWORKS

INTEGRATED GEOSPATIAL INFORMATION FRAMEWORK (UN-IGIF)

- Strategic Framework on Geospatial Information & Services for Disasters
- Global Statistical Geospatial Framework
- Framework for Effective Land Administration
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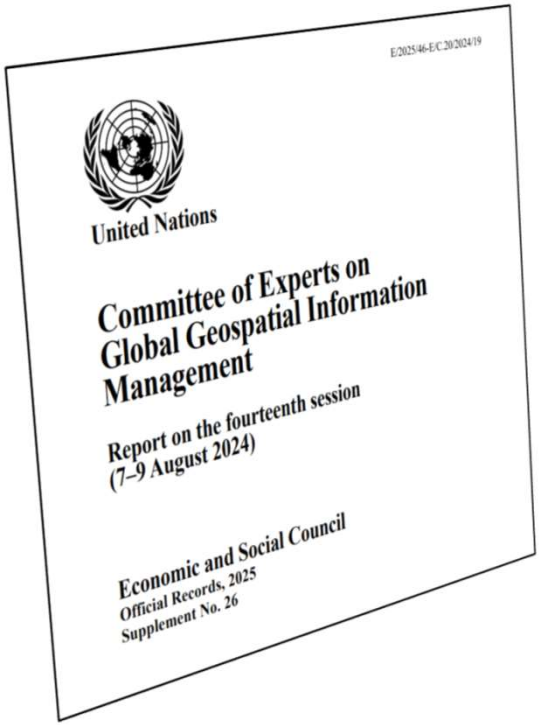
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United Nations

Committee of Experts on Global Geospatial Information Management

Report on the fourteenth session (7–9 August 2024)

Economic and Social Council
Official Records, 2025
Supplement No. 26

Decision 14/105
United Nations Integrated Geospatial Information Framework

The Committee of Experts on Global Geospatial Information Management:

(f) Welcomed offers from some Member States to **support the adoption and operationalization of the Framework** across Member States, noting that the Framework was a broad work item within the programme of work of the Committee of Experts and that **strategic and effective implementing partnerships and collaboration arrangements** would be beneficial, affirmed the benefits of partnership and collaboration, and welcomed and appreciated the tangible contributions of the SDG Data Alliance and its donors for their active support and involvement with a number of Member States to implement the Framework and to share their implementation experiences, and urged **the United Nations Global Geospatial Knowledge and Innovation Centre to intensify its support to Member States** to ensure the sustained adoption of geospatial information management capabilities and the operationalization of the Framework **in accordance with national circumstances**;

17 PARTNERSHIPS FOR THE GOALS

What is UN-IGIF?

A comprehensive guide that enables countries to develop, strengthen, and promote efficient use of geospatial information for policy formulation, decision-making, and innovation.

VISION

The efficient use of geospatial information by all countries to **effectively measure, monitor and achieve** sustainable social, economic and environmental development – leaving no one behind.

MISSION

To promote and support **innovation** and provide the **leadership, coordination and standards** necessary to deliver integrated geospatial information that can be leveraged to find sustainable solutions for social, economic and environmental development

Developed under UN-GGIM, collaboration between UNSD & World Bank

2018 – adopted UN-IGIF → **2020 – finalized Implementation Guide** → **Implementation –** continue through High-Level Group

7 Underlying Principles
Fundamental values guiding implementation

8 Strategic Goals
High-level objectives for geo-information management

9 Strategic Pathways
Specific areas of focus for implementation

UN-IGIF

- Provides a comprehensive and adaptable guide for **enhancing geospatial capabilities**, which is crucial for addressing national sustainable development priorities.
- Built upon and implemented through nine strategic pathways across three key areas: **Governance, Technology, and People**.

Benefits

- **Government: (Spatial Enabler)** Enhance Informed decision making, spatial related development planning, innovation, service delivery, emergency response, and efficiencies across multiple agencies.
- **Economy**: Boosts productivity, fosters innovative new products and services, improves transport and logistics, enables efficient resource management …
- **Society**: Improves access to public services, standards of living, community development, environmental conservation, public safety, education, disaster preparedness…

The nine strategic pathways of the UN-IGIF

United Nations Integrated Geospatial Information Framework (UN-IGIF)

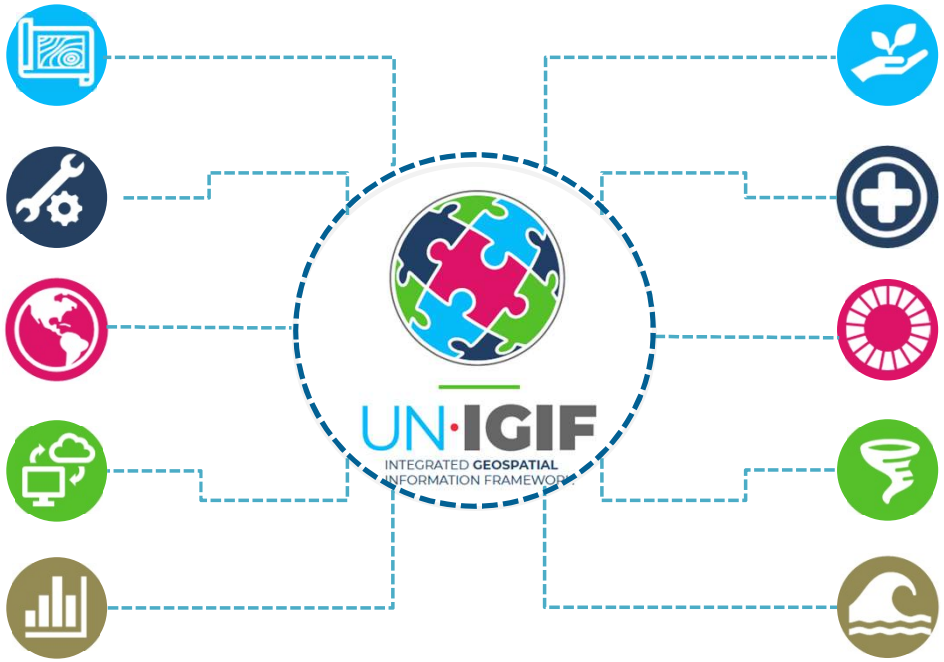
Support Effective Administration of **Land (UN-FELA), Coasts, Seas and Oceans** (UN-IGIF-Hydro)

Advance **National Development** Priorities

Modernize National **Geospatial Capacities**

Advance Integrated Geospatial Information in Broader **Digital Information Ecosystem**

Support **SDGs Global Indicator** Framework and the Integration of Statistical and Geospatial Information (GSGF)



Manage Impacts **of Climate Change** and Improve Resilience

Improve **Health Care Delivery** and Response

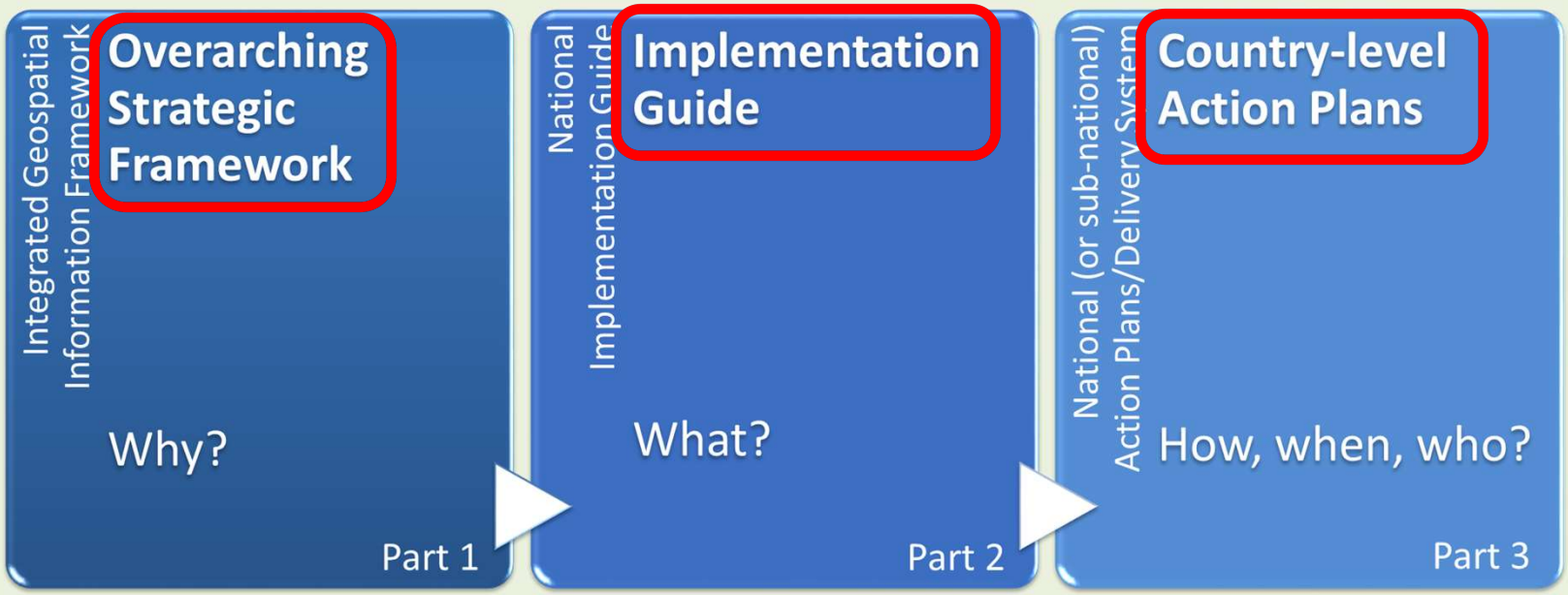
Advance the **2030 Agenda** for Sustainable Development

Facilitate Disaster Risk Reduction and Management (SFGIS4D)

Basis for Integrating the **Terrestrial, Maritime and Cadastral** Domains (UN-FELA/UN-IGIF-Hydro)

UN-IGIF provides an overarching paradigm to **further strengthen** nationally integrated geospatial information management, not only for Member States that were in the **early stages of adopting** spatial data infrastructures but also for those that had **already successfully implemented** spatial data infrastructure capabilities.

Integrated Geospatial Information Framework



UN·IGIF
INTEGRATED GEOSPATIAL INFORMATION FRAMEWORK

Part 1: **WHY** geospatial information is a critical element of national social and economic development and needs to be strengthened.

Part 2: **WHAT** actions (roadmap) can be taken to strengthen geospatial information management.

Part 3: **HOW** the actions will be carried out, **WHEN** and by **WHOM**.

https://ggim.un.org/UN-IGIF/

UN-IGIF **Overarching Strategy**

Why?

Part 1

- *Adopted by UN-GGIM in August 2018, the Overarching Strategic Framework sets the context of 'why' geospatial information management is a critical element of national social and economic development, and 'why' it needs to be strengthened.*
- *This is the strategic policy guide to reference when developing and strengthening national and sub-national geospatial information management systems and capabilities. It presents a forward-looking and aspirational geospatial framework built on national needs and circumstances.*
- *As a 'strategic' introduction to the UN-IGIF, the intended audience includes national leaders, political leaders, organizational managers, the business community and academia, and defined benefits that take account of national priorities.*

UN-IGIF **Implementation Guide**

What?

Part 2

- *Adopted by UN-GGIM in September 2020, the Implementation Guide explains 'what' specific guidance and options can be taken by countries in implementing the UN-IGIF.*
- *Expanding on each of the nine Strategic Pathways, the Guide captures strategic to operational needs with references, good practices, guiding principles, actions, deliverables, outcomes and resources for countries to establish 'nationally' integrated geospatial information frameworks in such a way that transformational change is enabled, visible and sustainable.*
- *Recognizing that every country is at different levels of maturity in their geospatial development journey, the guidance is comprehensive, but general enough to be applicable to all countries, and sufficiently flexible so that each country can develop their own Action Plans to meet their national priorities and circumstances.*

UN-IGIF **Country-level Action Plans**

How, when, who?

Part 3

- *Includes elements such as the economic impact and value of geospatial information systems, investment needs and priorities, identification of short, medium and long-term activities, and potential funding sources.*
- Countries prepare and implement the UN-IGIF with their own country-level Action Plans (CAPs) that align with the country's priorities and circumstances. A CAP references the specific guidance, options and actions provided in the Implementation Guide and addresses each of the Strategic Pathways, while taking into account the strategic and operational needs of a country when implementing the UN-IGIF.

UN-IGIF Part 1 – Overarching Framework

7 Principles, 8 Goals, 9 Strategic Pathways

VISION

The efficient use of geospatial information by all countries to effectively measure, monitor and achieve sustainable social, economic and environmental development – leaving no one behind

MISSION

To promote and support innovation and provide the leadership, coordination and standards necessary to deliver integrated geospatial information that can be leveraged to find sustainable solutions for social, economic and environmental development.

STRATEGIC DRIVERS

National Development Agenda ● National Strategic Priorities ● National Transformation Programme ● Community Expectations ● Multilateral trade agreements ● Transforming our World: 2030 Agenda for Sustainable Development ● New Urban Agenda ● Sendai Framework for Disaster Risk Reduction 2015–2030 ● Addis Ababa Action Agenda ● Small Island Developing States Accelerated Modalities of Action (SAMOA Pathway) ● United Nations Framework Convention on Climate Change (Paris Agreement) ● United Nations Ocean Conference: Call for Action

UNDERPINNING PRINCIPLES

Strategic Enablement	Transparent and Accountable	Reliable, Accessible and Easily Used	Collaboration and Cooperation	Integrative Solution	Sustainable and Valued	Leadership and Commitment

GOALS

Effective Geospatial Information Management	Increased Capacity, Capability and Knowledge Transfer	Integrated Geospatial Information Systems and Services	Economic Return on Investment
Sustainable Education and Training Programs	International Cooperation and Partnerships Leveraged	Enhanced National Engagement and Communication	Enriched Societal Value and Benefits

GOALS

Effective Geospatial Information Management	Increased Capacity, Capability and Knowledge Transfer	Integrated Geospatial Information Systems and Services	Economic Return on Investment
Sustainable Education and Training Programs	International Cooperation and Partnerships Leveraged	Enhanced National Engagement and Communication	Enriched Societal Value and Benefits

STRATEGIC PATHWAYS

Governance and Institutions	Policy and Legal	Financial	Data	Innovation	Standards	Partnerships	Capacity and Education	Communication and Engagement
Governance model	Legislation	Business model	Data themes	Technological advances	Standards governance and policy	Cross-sector and interdisciplinary cooperation	Awareness	Stakeholder and user engagement
Leadership	Policies, norms and guides	Opportunities	Custodianship, acquisition and management	Process improvement	Technology and data interoperability	Private sector and academia collaboration	Formal education	Strategic messaging
Value proposition	Data protection, licensing and sharing	Investment	Data supply chains	Innovation and creativity	Compliance testing and certification	International collaboration	Professional training	Strategy, plans and methods
Institutional arrangements	Governance and accountability	Benefits realization	Data curation and delivery	Bridging the geospatial digital divide	Community of practice	Community participation	Entrepreneurship	Monitoring and evaluation

BENEFITS

Knowledge | Decisions | Development | Society | Economy | Environment | Users | Citizens | Access | Technology | Applications | Value

Water | Health | Food | Education | Urbanization | Population | Climate | Disasters | Security | Infrastructure | Oceans | Industry

UN-IGIF: 9 Strategic pathways

Strategic Pathway 1

Governance and Institutions

Establishes the leadership, governance model, institutional arrangements and a clear value proposition as a means to strengthen multi-disciplinary and multi-sectoral participation and a commitment to achieving an Integrated Geospatial Information Framework.

Objective is to attain political endorsement, strengthen institutional mandates and build a cooperative data sharing environment through a shared understanding of the value of an Integrated Geospatial Information Framework, and the roles and responsibilities to achieve the vision.

- Governance Model
- Leadership
- Institutional Structures
- Value Proposition

Strategic Pathway 2

Legal and Policy

Establishes a robust legal and policy framework that is essential to institute appropriate national geospatial information legislation and policy that enables the availability, accessibility, exchange, application and management of geospatial information.

Objective is to address current legal and policy issues by improving the laws and policies associated with, and impact on, geospatial information management; proactively monitoring the legal and policy environment, particularly with regard to designating official responsibility for the production of data, and with respect to issues raised by emerging technologies and innovative and creative use of geospatial information.

- Legislation
- Norms, Policies and Guides
- Implementation and Accountability
- Data Protection and Licensing

Strategic Pathway 3

Financial

Establishes the business model, develops financial partnerships, and identifies the investment needs and funding sources for delivering integrated geospatial information management, as well as recognizing the benefits realization milestones that will achieve and maintain momentum.

Objective is to achieve an understanding of the implementation costs and ongoing financial commitment necessary to deliver integrated geospatial information management that can be sustained and maintained in the longer term.

- Business Model
- Partnerships and Opportunities
- Investment
- Benefits Realization

Strategic Pathway 4

Data

Establishes a geospatial data framework and custodianship guidelines for best practice collection and management of integrated geospatial information that is appropriate to cross sector and multidisciplinary collaboration.

Objective is to enable data custodians to meet their data management, sharing and reuse obligations to government and the user community through the execution of well-defined data supply chains for organizing, planning, acquiring, integrating, managing, maintaining, curating, publishing and archiving geospatial information.

- Fundamental Data Themes
- Custodianship, Acquisition and Management
- Data Supply Chain Interlinkages
- Data Curation and Delivery

Strategic Pathway 5

Innovation

Recognizes that technology and processes are continuously evolving; creating enhanced opportunities for innovation and creativity that enable governments to quickly bridge the digital divide.

Objective is to stimulate the use of the latest cost-effective technologies, process improvements and innovations so that governments, no matter what their current situation is, may leapfrog to state-of-the-art geospatial information management systems and practices.

- Technological Advances
- Process Improvement
- Promoting Innovation and Creativity
- Bridging the Digital Divide

Strategic Pathway 6

Standards

Establishes, and ensures the adoption of, best practice standards and compliance mechanisms that enable legal, data, semantic and technical interoperability, which are fundamental to delivering integrated geospatial information and knowledge creation.

Objective is to enable different information systems to communicate and exchange data, enable knowledge discovery and inferencing between systems using unambiguous meaning, and provide users with lawful access to and reuse of geospatial information.

- Legal Interoperability
- Data Interoperability
- Semantic Interoperability
- Technical Interoperability

Strategic Pathway 7

Partnerships

Establishes effective cross-sector and interdisciplinary cooperation, industry and private sector partnerships, and international cooperation as an important premise to developing a sustainable Integrated Geospatial Information Framework.

Objective is to create and sustain the value of geospatial information through a culture based on trusted partnerships and strategic alliances that recognize common needs and aspirations, and national priorities.

- Cross-sector and Interdisciplinary Cooperation
- Industry Partnerships and Joint Ventures
- Community Participation
- International Collaboration

Strategic Pathway 8

Capacity and Education

Establishes enduring capacity building programs and education systems so that geospatial information management and entrepreneurship can be sustained in the longer term.

Objective is to increase the awareness and level of understanding of geospatial information science. This includes developing and strengthening the skills, instincts, abilities, processes and resources that organizations and communities require to utilize geospatial information for decision-making.

- Awareness Raising
- Formal Education
- Entrepreneurship
- Professional Workplace Training

Strategic Pathway 9

Communication and Engagement

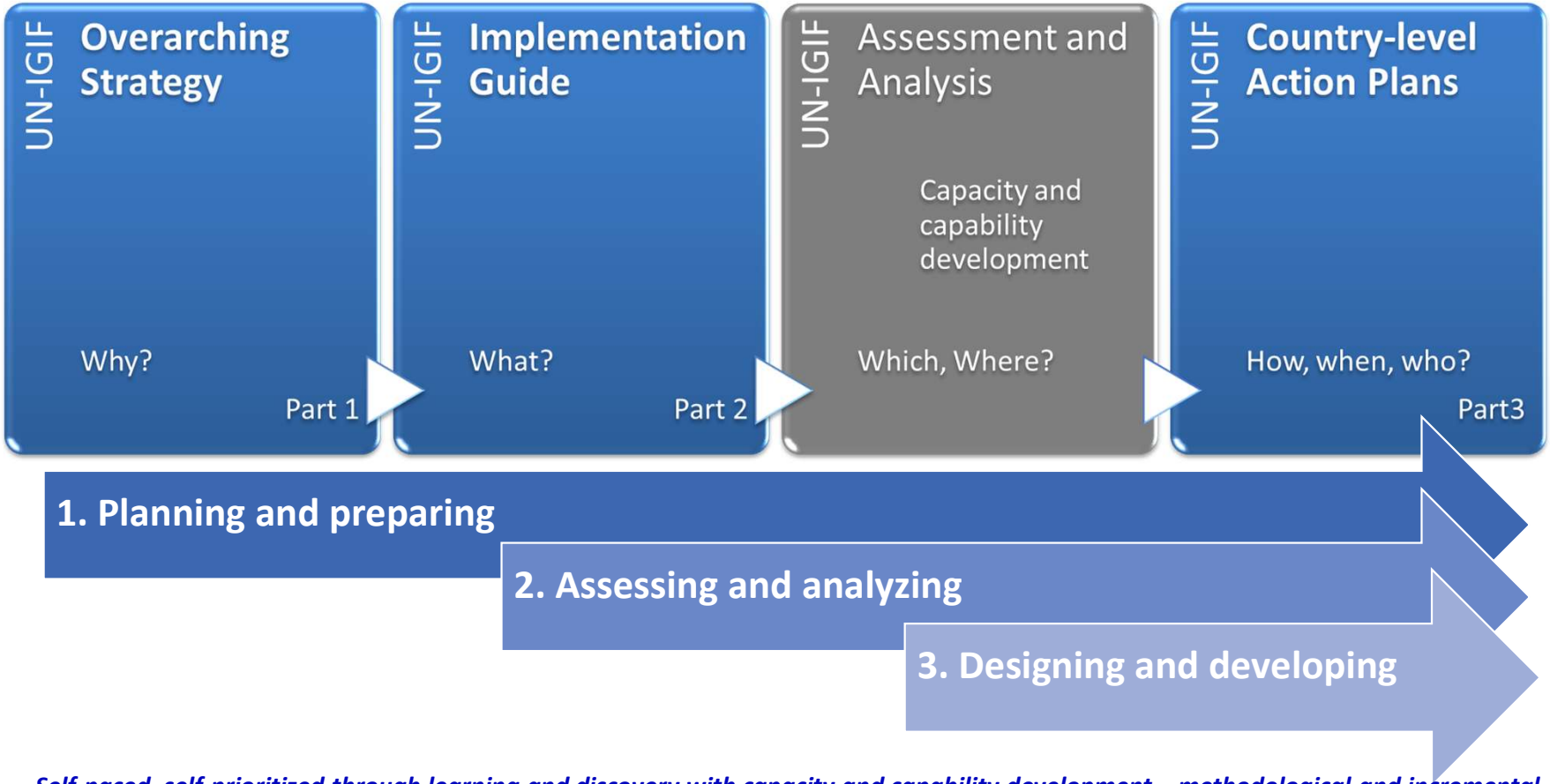
Recognizes that stakeholders (including the general community) are integral to the implementation of integrated geospatial information management systems and that their buy-in and commitment is critical to success.

Objective is to deliver effective and efficient communication and engagement processes to encourage greater input from stakeholders to achieve transparent decision-making processes when implementing the Geospatial Information Management Framework.

- Stakeholder Identification
- Integrated Engagement Strategies
- Planning and Execution
- Monitoring and Evaluation

A COUNTRY-LED APPROACH TOWARDS A COUNTRY-LEVEL ACTION PLAN

A country-led approach presently has **three components** with a set of activities and tasks complemented by a suite of resource materials for countries to reference. These materials are meant to support countries when assessing and analyzing their national circumstances **before designing and developing their Country-level Action Plans.**



Self-paced, self-prioritized through learning and discovery with capacity and capability development – methodological and incremental

THREE SUGGESTED COMPONENTS IN A COUNTRY-LED APPROACH

The three components comprise a number of suggested activities and tasks. These are all supported by a comprehensive suite of resource materials for countries to reference, consider and **adapt to their national situation** and include some templates and forms for ease of use.

1. Planning and preparing

A shared understanding of the UN-IGIF and collective commitment **to identify and engage stakeholders, plan and prepare for tasks ahead** - gather information, assess and analyze, consult and review, design and develop country-level Action Plan

2. Assessing and analyzing

Collective efforts towards shared understanding of current situation (including limitations, issues, challenges and opportunities) and a collective understanding of what the desired and **future nationally integrated geospatial information management arrangement should be**

3. Designing and developing

Identifying and agreeing what needs to be done (or happen) where, when, by whom and how including **sound and realistic estimation of resources** required to strengthen nationally integrated geospatial information management towards evidence-based implementation of national development priorities and the 2030 Agenda for Sustainable Development

Plan of Work

National Needs Assessment and Gap Analysis Report

Country-level Action Plan

OPERATIONALIZING THE UN-IGIF AT THE COUNTRY-LEVEL

Self-paced, self-prioritized through a process that allows **'self' discover** and learning of national situations, together with capacity and capability development, collectively design and develop a country-level Action Plan. The approach is methodological and incremental, recognize and build-upon the existing arrangements, infrastructures and systems

Planning and preparing

Awareness and Initial Assessment
Stakeholder Identification and Analysis
Project Initiation

PLAN OF WORK

Assessing and analyzing

Current and Desired Situation Assessment
Baseline Survey
Understanding National Situation and Analysis
Stakeholder Engagement Activities
Strategic Alignment Exercise
Developing Vision, Mission and Goals
Gap Analysis

NEEDS ASSESSMENT AND GAP ANALYSIS REPORT

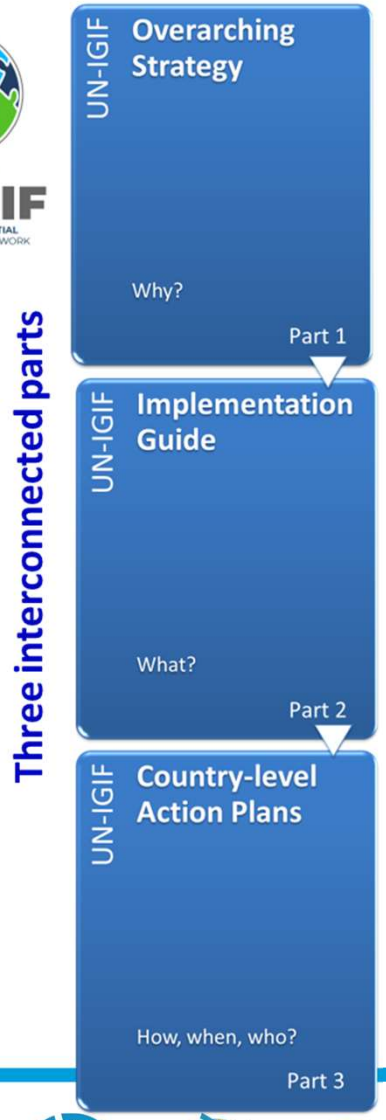
Designing and developing

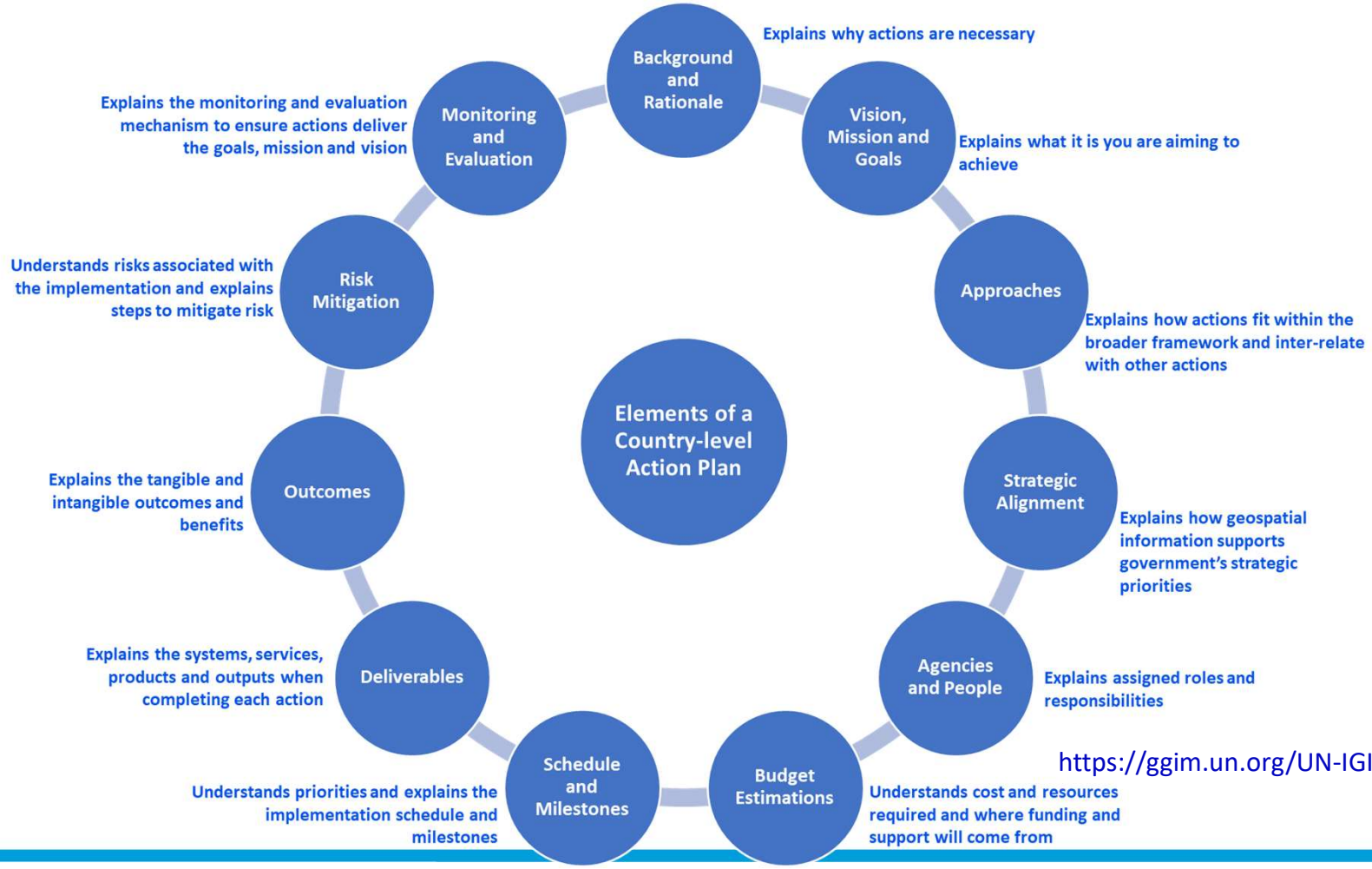
Developing **strategic actions** (*aligning the nine strategic pathways with national priorities*)
Estimating resources including budgetary and funding requirements
Developing an implementation schedule
Developing success indicators

COUNTRY-LEVEL ACTION PLAN

Plan of Work | **National Needs Assessment and Gap Analysis Report** | **Country-level Action Plan**

ELEMENTS OF A COUNTRY-LEVEL ACTION PLAN





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DIGITAL & SPACE MINISTRY

Enhancing Geospatial Information Management arrangements Accelerating the Implementation of the SDGs

Sub-regional Workshop on UN-IGIF for the Central Asia, South Asia and Neighboring Countries

UN-IGIF in Action

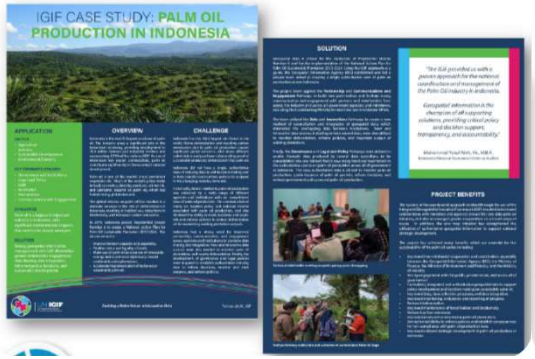
Challenges and Future perspectives

Common Implementation Challenges

- **Funding Constraints:** Limited budgets for technology and capacity building
- **Institutional Silos:** Lack of coordination between agencies
- **Technical Capacity:** Shortage of skilled geospatial professionals
- **Data Quality:** Inconsistent or outdated spatial data
- **Political Will:** Need for sustained leadership commitment

Outlook and Emerging Trends

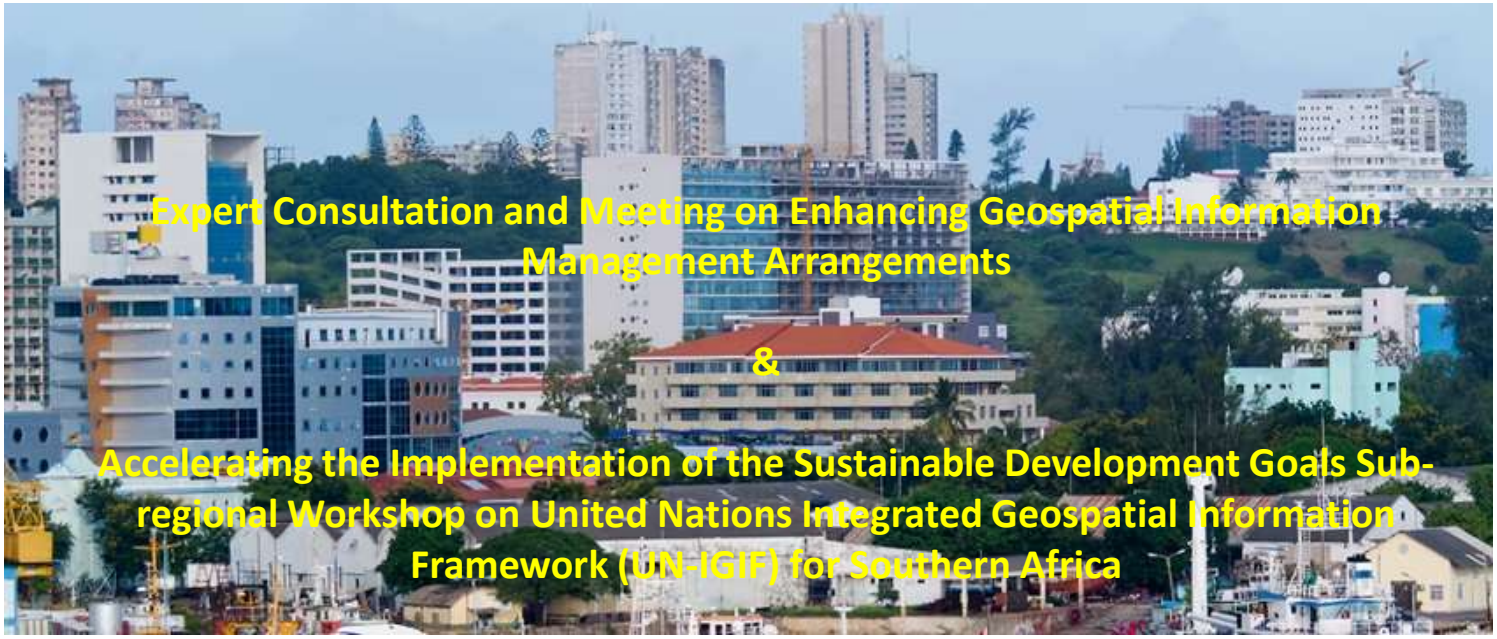
- **Artificial Intelligence:** Automated feature extraction and analysis
- **Earth Observation:** Increased satellite data availability
- **Cloud Computing:** Scalable geospatial processing
- **Internet of Things:** Real-time sensor integration
- **Digital Twins:** Comprehensive city and regional modeling



Possible Challenges

1. Lack of (or insufficient) **governance** - legal/policy frameworks for interagency collaboration
2. Unconvinced **buy-in** from highest-level decision makers (cabinet)
3. Lack of qualified GIS professionals, enhancing **geospatial skillset** (#1 for BDI)
4. Lack of data **standard and infrastructure**
5. Sustaining **financial** investment either from national or private sectors in geospatial programs
6. Limited global and regional **coordination** and participation for policy alignment
7. Sustaining **institutional memory** – free from political changes in the country (related to #1)

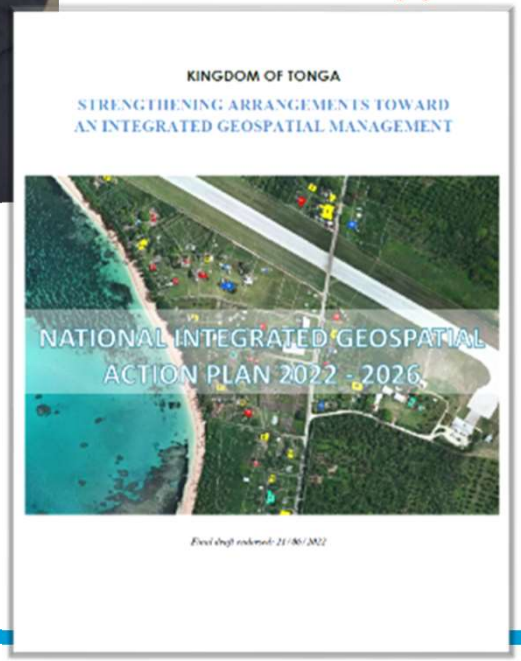
Mr. Chinguane Marcos Mabote
Secretary of State for Transport
Ministry of Transport and Logistics
Government of Mozambique



"[**Geospatial information**] plays crucial role in **understanding and addressing recent impact of cyclones** faced by Mozambique. The ability to collect, analyse and apply geospatial data is crucial to save lives, protect critical infrastructure and improve the resilience of communities. It is essential that solutions generated through geospatial data are developed in an **inclusive manner**, ensuring that local communities and governments at provincial, district and municipal levels have **access to tools** that can directly benefit their population."

"Today is a digital era; **geospatial information** is a digital fuel for government and services. Data from many sources. We need to **act with knowledge and evidence**."

Hon. Samiu Vaipulu
Deputy Prime Minister
Kingdom of Tonga
September 2023



"The implementation of this **Action Plan** will provide Tonga with a truly **national** collaborative approach to improving the management and **use of this valuable digital asset**. Strengthen government at all levels and strengthen industry."

"[**Geospatial information**] is crucial for planning, decision-making, and implementation across various sectors—health, education, agriculture, urban planning, and environmental management."

Steadroy Benjamin
Deputy Prime Minister, Attorney General
Antigua and Barbuda, October 2024

SIDS countries workshop on the UN Integrated Geospatial Information Framework in Antigua and Barbuda

UN-IGIF in Action

Key takeaways

Scalable Solutions: It works for countries of all sizes and development levels
Measurable Impact: Quantifiable improvements in governance and service delivery (significant return for investment)
Sustainable Development: Direct contribution to SDG achievement
Global Collaboration: Shared learning accelerates progress

For Policymakers: Proven pathway to harness geospatial information for **evidence-based governance** and achieving national development goals

For Implementers: Practical guidance, standards, and tools to build robust, interoperable geospatial systems

For Partners: Strategic investment opportunity in fundamental digital infrastructure with lasting impact

The evidence is clear

UN-IGIF implementation **delivers tangible benefits for countries and their citizens**. The framework provides a proven pathway for leveraging geospatial information to address complex challenges and build more resilient, sustainable societies.

Let's continue and support the UN-IGIF journey today.

Building the Foundation for Sustainable Development

Leave No One Behind!

Three interconnected parts

UN-IGIF **Overarching Strategy**

Why?

Part 1

UN-IGIF **Implementation Guide**

What?

Part 2

UN-IGIF **Country-level Action Plan**

How, when, who?

Part 3

THANK YOU

Fifteenth Session of the United Nations Committee of Experts on Global Geospatial Information Management

6 – 8 August 2025

UNHQ, New York

SUSTAINABLE DEVELOPMENT GOALS

UN·IGIF

INTEGRATED GEOSPATIAL INFORMATION FRAMEWORK