




Transforming our world –
The 2030 Agenda for
Sustainable Development



Third International Workshop on Operationalizing the Integrated Geospatial Information Framework
26 - 28 November 2019, Conference Room, Office of the National Statistical Committee
Minsk, Belarus

Integrated Geospatial Information Framework Part 2: Implementation Guide

United Nations Secretariat for Global Geospatial Information Management
Statistics Division, Department of Economic and Social Affairs

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IGIF: Implementation Guide - Foundations

- The Implementation Guide provides the ‘what’, the specific guidance and options to be taken by countries in implementing the IGIF. It captures strategic to operational needs with guiding principles; while not being detailed and prescriptive – Country-level Action Plans do that.
- Expanding on each of the 9 Strategic Pathways, the Guide comprises references, good practices and specific principles and actions for each of the Pathways, including those generated through each of the Subcommittee, Expert and Working Groups of UN-GGIM.
- The aim is to provide guidance for governments to establish ‘nationally’ integrated geospatial information frameworks in countries in such a way that transformational change is enabled, visible and sustainable. The Guide’s benefits will cascade right down to the citizen.
- While intended to benefit low to middle income countries and small island developing States, the Guide can be used to establish and/or improve national geospatial information management arrangements. The Guide can also be used to coordinate activities to achieve alignment between already existing national agency capabilities and infrastructures.


National Implementation Guide

Implementation Guide

What?

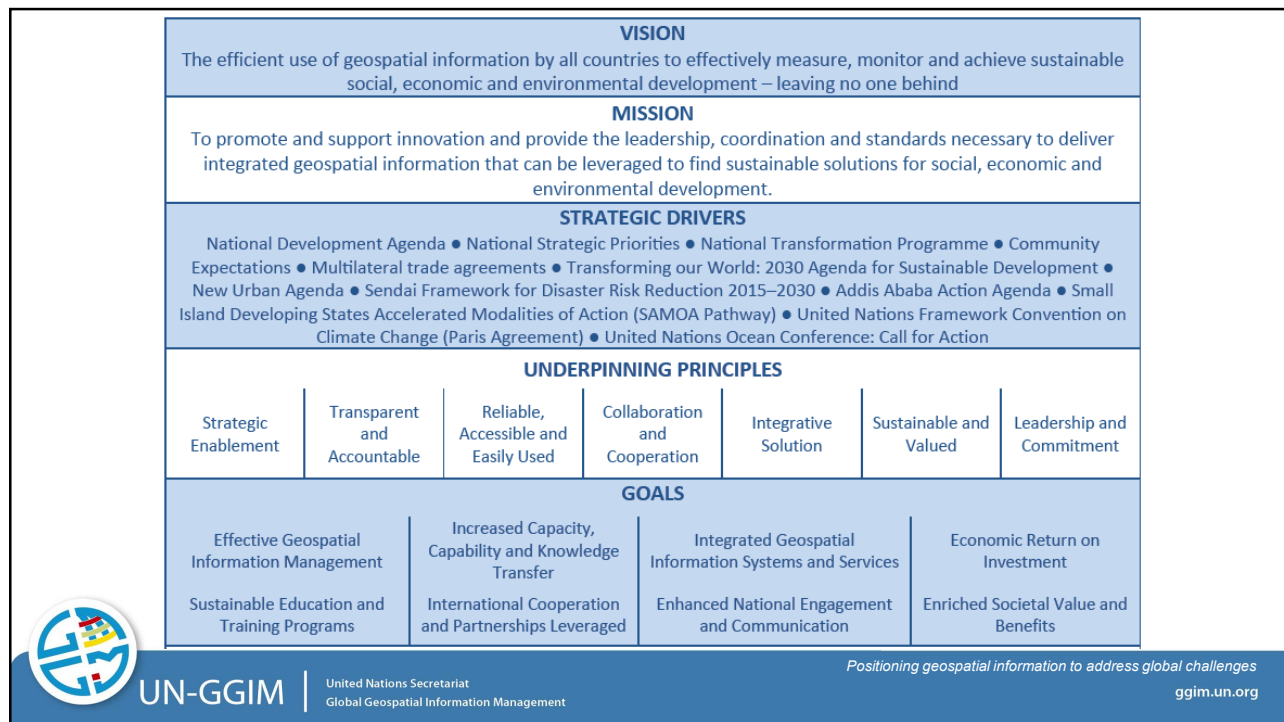
Part 2

the Framework is a mechanism for articulating and demonstrating national leadership in geospatial information, and the capacity to take positive steps.



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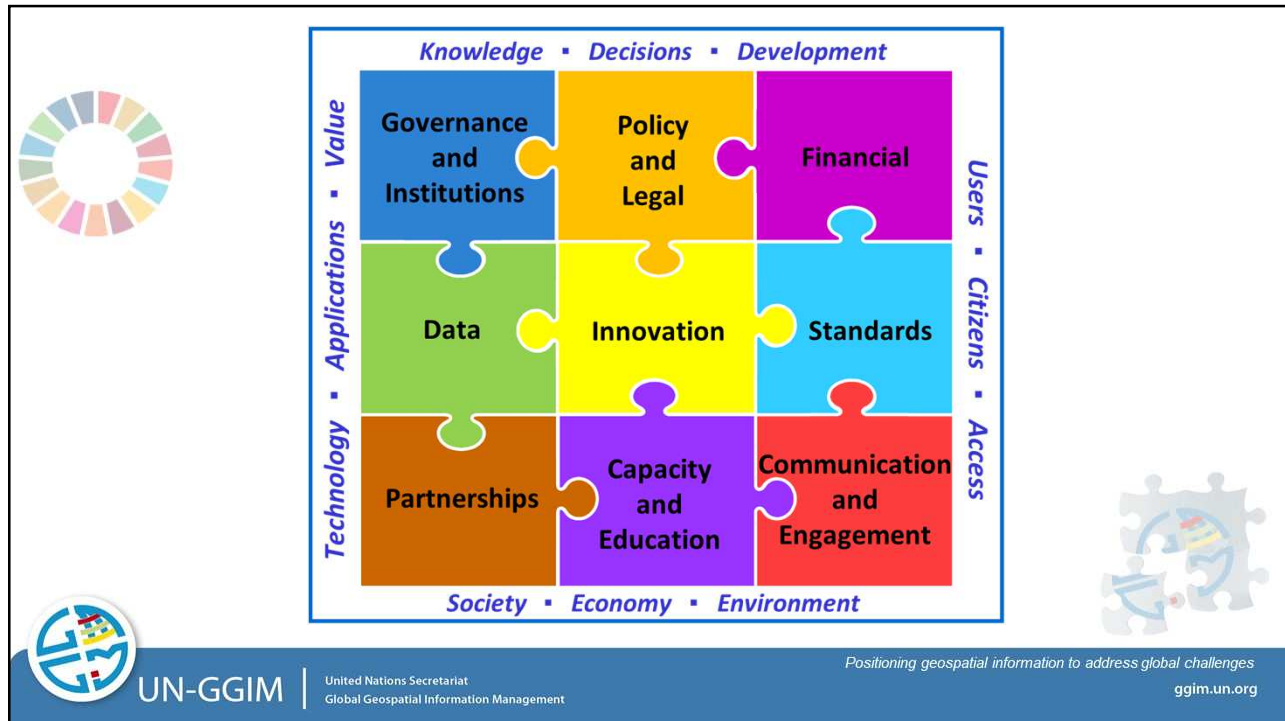


IGIF: Implementation Guide - March 2019

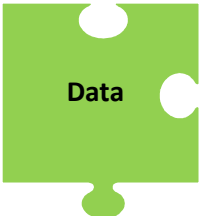
Proposed “structure, shape and form”

- The ‘IGIF’ pieces and relationships need to be understood: IGIF; Guide; Appendices; Case Studies; Country-level Action Plans, etc. Every country will be different in their response. Every country has a vision and/or strategy. The elements of the Guide will feed into these.
- The initial proposed Guide ‘structure, shape and form’ is suitable, but expand to 10 Chapters.
- First Chapter will be the Index: To describe and explain the flow and structure of the Guide; bring each of the introductory diagrams together; look at interlinkages across each of the Strategic Pathways; address NSDI perspectives; and articulate the ‘level of detail’ of the Guide.
- The remaining chapters of the Guide will begin with a Summary (to articulate the value proposition the pathway offers) and an Introduction that includes a schematic flow diagram.



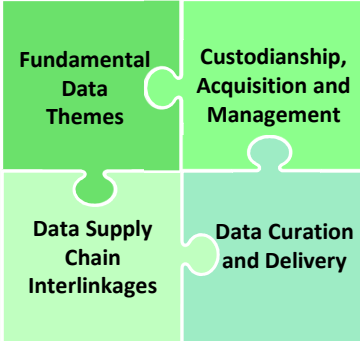


Strategic Pathway 4



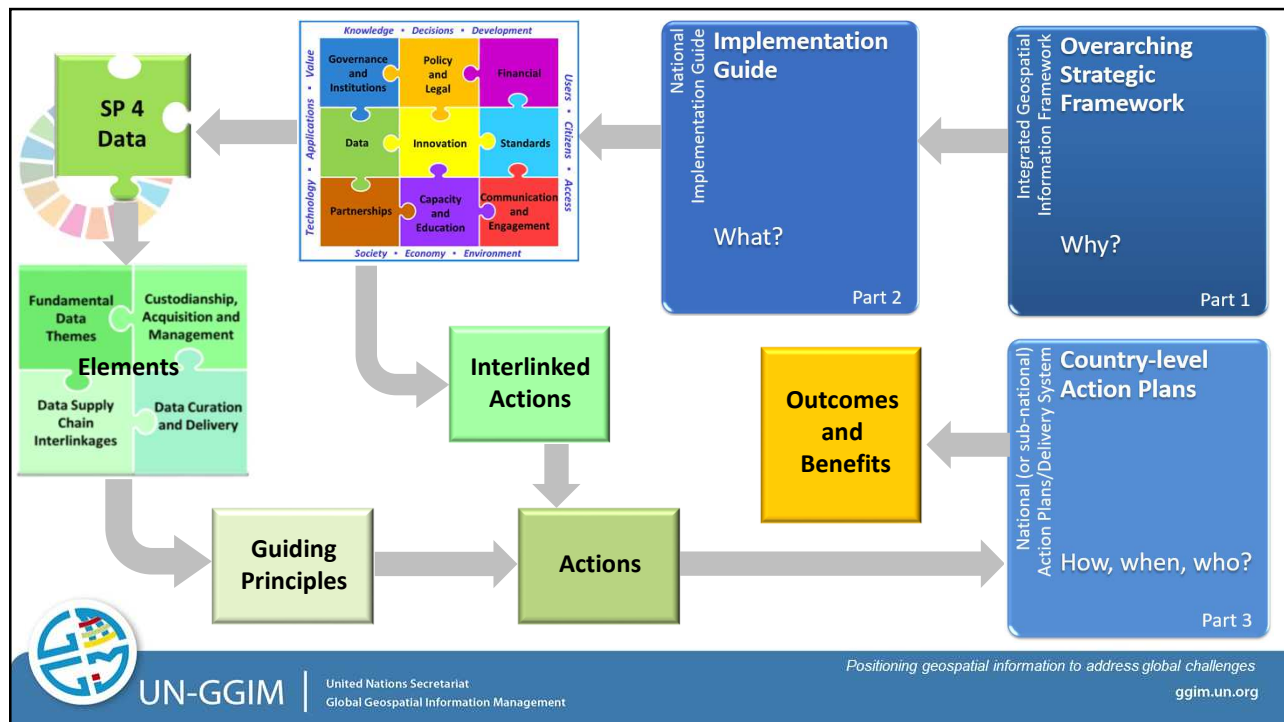
Establishes a geospatial data framework and custodianship guidelines for best practice collection and management of integrated geospatial information that is appropriate to cross sector and multidisciplinary collaboration.

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.



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IGIF: Implementation Guide - Structure

- The Implementation Guide is a reference resource that defines, describes, and offers helpful guidance on each of the nine pathways.
- While each pathway addresses a component of the Framework, there are interrelated linkages and associations with one or more of the other pathways.
- The Guide mentions common relationships between the different pathways so that users see the connections.
- The Guide tells the user what is needed to create, implement, and/or maintain a national (or sub-national) geospatial information capability. It offers recommended, suggested, or required actions in order to be successful.
- This is helpful in gaining new knowledge or validating geospatial programs already in place. However, the Guide does not describe how to implement the many points offered.



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Final Guide Structure for each Strategic Pathway as aligned to that agreed in March 2019

Proposed Document Structure

- **Abstract**
- **Summary**
- **1.1 Introduction**
- **1.2 Context and Rationale**
- **1.3 Approach**
- **1.4 Elements**
- **1.5 Guiding Principles**
- **1.6 Actions**
- **1.7 Deliverables**
- **1.8 Outcomes**
- **1.9 Resources**

Strategic Pathway 1

Governance and Institutions

This strategic pathway establishes the leadership, governance model, institutional arrangements and a clear value proposition to strengthen multi-disciplinary and multi-sectoral participation in, and a commitment to, achieving an integrated Geospatial Information Framework.

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

Summary

Geospatial information is increasingly being harnessed to interconnect and integrate government functions and commercial services – making cities more livable, citizens more engaged and informed, and agricultural areas more productive. Traffic congestion, weather reports, air pollution, bus locations, pest monitoring, flood sensors, and electricity outage applications are all underpinned by geospatial information that can be synthesized into a seamless knowledge environment so that information can be accessed quickly by users to make informed decisions. For government this means streamlining operations, reducing costs and improving overall economic and social sustainability.

This level of geospatial capability can only be achieved through cooperative governance frameworks and with strong leadership that penetrates across sectors and through all levels of government. Institutions need to work together to share information and work towards common strategic priorities and goals.

By interconnecting government functions through well-functioning governance frameworks, it is possible to bring together geospatial information from multiple sources so that it can be used seamlessly on any digital device.

Good governance and cooperative institutional arrangements are the first priority in the geospatial information reforms agenda. They enable geospatial information challenges to be met head on, provide flexibility to accommodate the rapidly changing environment, and the ability to embrace community and business participation within a culture of digital reform and transformation.

Common to all governance and institutional arrangements are four key elements that are required to build a cooperative data sharing environment and an appreciation of the value of geospatial information for decision-making.

Strategic Pathway 1: Governance and Institutions Page | 1.

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Strategic Pathway 1: Governance and Institutions Page | 1

The four elements are:

- **Governance Model** - based on a geospatial strategy for the nation and facilitated by governing bodies responsible for aligning and supporting policies and laws affecting the acquisition, creation, management, use, and dissemination of geospatial information.
- **Leadership** - to formulate and sustain a national geospatial information management strategy, develop a Country-level Action Plan for implementing the Integrated Geospatial Information Framework (IGIF), and create a governance process for assuring effective management responsibilities for the enterprise.
- **Value Proposition** - that measures, monitors, and communicates the economic benefit of integrated geospatial information to national priorities including citizen and societal benefits.
- **Institutional Arrangements** - that define roles and responsibilities across government for tasks associated with all aspects of geospatial information management, including appropriate coordination, management and oversight for meeting national priorities.

These elements are underpinned by principles that promote successful governance and institutional arrangements that can be adopted by each country. The principles are put into practice through several strategic actions that deliver and strengthen participation and commitment to achieving the IGIF. Tools, such as matrices, examples and checklists, are provided in the appendices to assist countries to work through concepts and processes to successfully complete each action. The overall structure for governance and institutional arrangements is illustrated in and anchored by Figure 1.1.

When implemented the actions (and their interrelated actions) will enable the achievement of the four elements, which in turn will deliver significant and sustainable national outcomes and benefits for a country. These outcomes include attaining:

- Efficient planning and coordination of the government's geospatial information resources;
- Strengthened leadership, institutional mandates and political buy-in;
- A cooperative data sharing environment; and
- A shared understanding of the value of integrated geospatial information management.

¹ The interrelated actions across all Strategic Pathways are described in detail in the Introductory Chapter; Solving the Puzzle: Understanding the Implementation Guide.

Strategic Pathway 1: Governance and Institutions Page | 2

Elements of Governance and Institutions	Governance Model	Leadership	Value Proposition	Institutional Arrangements
Guiding Principles	Facilitate Strategic Outlook Credibility Participatory	Open and Transparent Accountability Guidance Clarity	Project Management Oversight Communication and Evaluation Legal Interoperability	
Key Actions for Strengthening Geospatial Information Management	Forming the Leadership Governing Board Geospatial Coordination (LHHS) Specialist Working Groups	Setting Direction Strategic Alignment Study Geospatial Information Management Strategy	Tracking Success Monitoring and Evaluation Success Indicators	
Tools to Assist in Completing the Actions	Steering Committee Charter Example Strategic Alignment Template	Guidance for Vision, Mission and Goal Statements Country-level Action Plan Template	Monitoring and Evaluation Template Success Indicators Example	
Interrelated and/or Prerequisite Actions	Policy Framework (SP2) ICT Capacity Review (SP5) ICT Needs Assessment and Gap Analysis (SP5)	ICT Needs Assessment and Gap Analysis (SP5) Stakeholder Engagement Strategy (SP9)	Legal and Policy Review (SP2) Data Inventory and Gap Analysis (S4)	
Outcomes	Strengthened Leadership, Institutional Mandates and Political Buy-in	Efficient Planning and Coordination Geospatial Information is Valid	Cooperative Data Sharing	

Strategic Pathway 1: Governance and Institutions Page | 3

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The overall structure diagram for the Chapter as part of the 3-page Summary. Shows what is in the Chapter and the relevance between sections.

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Key Actions for Strengthening Geospatial Information Management	Forming the Leadership Governing Board Geospatial Coordination Unit(s) Specialist Working Groups	Setting Direction Strategic Alignment Study Geospatial Information Management Strategy		Tracking Success Monitoring and Evaluation Success Indicators
	Establishing Accountability Governance Model	Creating a Plan of Action Change Strategy Country-level Action Plan		Deriving Value Geospatial Economic Value Assessment
Tools to Assist in Completing the Actions	Steering Committee Charter Example Strategic Alignment Template	Guidance for Vision, Mission and Goal Statements Country-level Action Plan Template		Monitoring and Evaluation Template Success Indicators Example
Interrelated and/or Prerequisite Actions	Policy Framework (SP2) ICT Capacity Review (SP5)	ICT Needs Assessment and Gap Analysis (SP5) Stakeholder Engagement Strategy (SP9)		Legal and Policy Review (SP2) Data Inventory and Gap Analysis (S4)
	ICT Needs Assessment and Gap Analysis (SP5)			
Outcomes	Strengthened Leadership, Institutional Mandates and Political Buy-in	Efficient Planning and Coordination Geospatial Information is Valued		Cooperative Data Sharing

"Tools" and "Interrelated Actions" are identified throughout the Chapter

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The 'Approach' to the Chapter. Repeats what is in the Summary diagram, but goes into more detail. Items will be hyperlinked for ease of search and navigation.

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Outcomes

- Efficient planning and coordination of the governments geospatial information resources
- Strengthened leadership, institutional mandates and political buy-in
- A cooperative data sharing environment
- A shared understanding of the value of integrated geospatial information management

Elements

- Governance Model
- Leadership
- Value Proposition
- Institutional Arrangements

Principles

- Facilitate
- Strategic Outlook
- Credibility
- Participatory
- Open and Transparent
- Accountability
- Guidance
- Clarity
- Project Management
- Oversight
- Communication and Evaluation
- Legal Interoperability

Tools

- Steering Committee Charter Example
- Strategic Alignment Template
- Guidance for Vision, Mission and Goal Statements
- Country-level Action Plan Template
- Monitoring and Evaluation Template
- Success Indicators Example

Interrelated Actions

- Policy and Legal Review (SP2)
- Data Gap Analysis (S4)
- Policy Framework (SP2)
- ICT Capacity Review (SP5)
- ICT Needs Assessment and Gap Analysis (SP5)
- Stakeholder Engagement Strategy (SP9)
- Capacity Assessment and Gap Analysis (SP8)
- Business Model (SP2)
- Data Acquisition Program (SP4)
- Formalised Data Supply Chains (SP4)

Actions

- Forming the Leadership**
 - Governing Board
 - Geospatial Coordination Unit(s)
 - Specialist Working Groups
- Establishing Accountability**
 - Governance Model
- Setting Direction**
 - Strategic Alignment Study
 - Geospatial Information Management Strategy
- Creating a Plan of Action**
 - Change Strategy
 - Country-level Action Plan
- Tracking Success**
 - Monitoring and Evaluation
 - Success Indicators
- Deriving Value**
 - Geospatial Economic Value Assessment

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The Actions as a sequential 'step-by-step' road map that links the actions and recommended steps.

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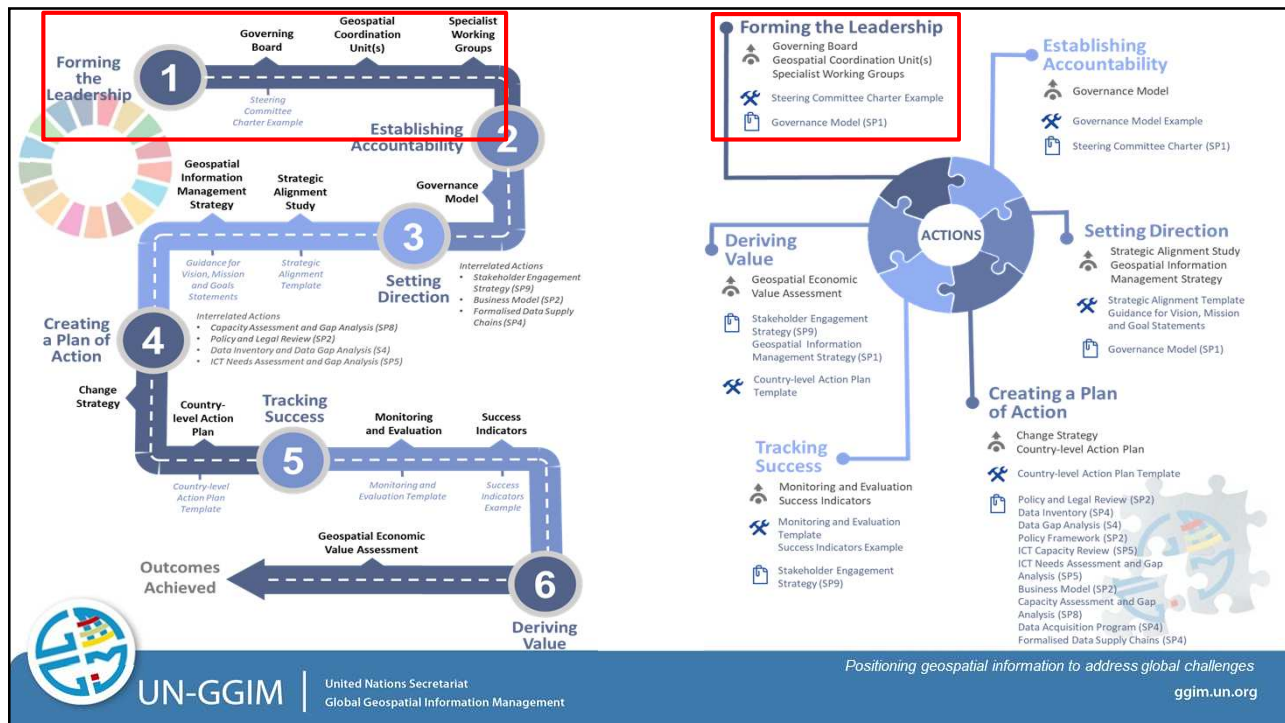
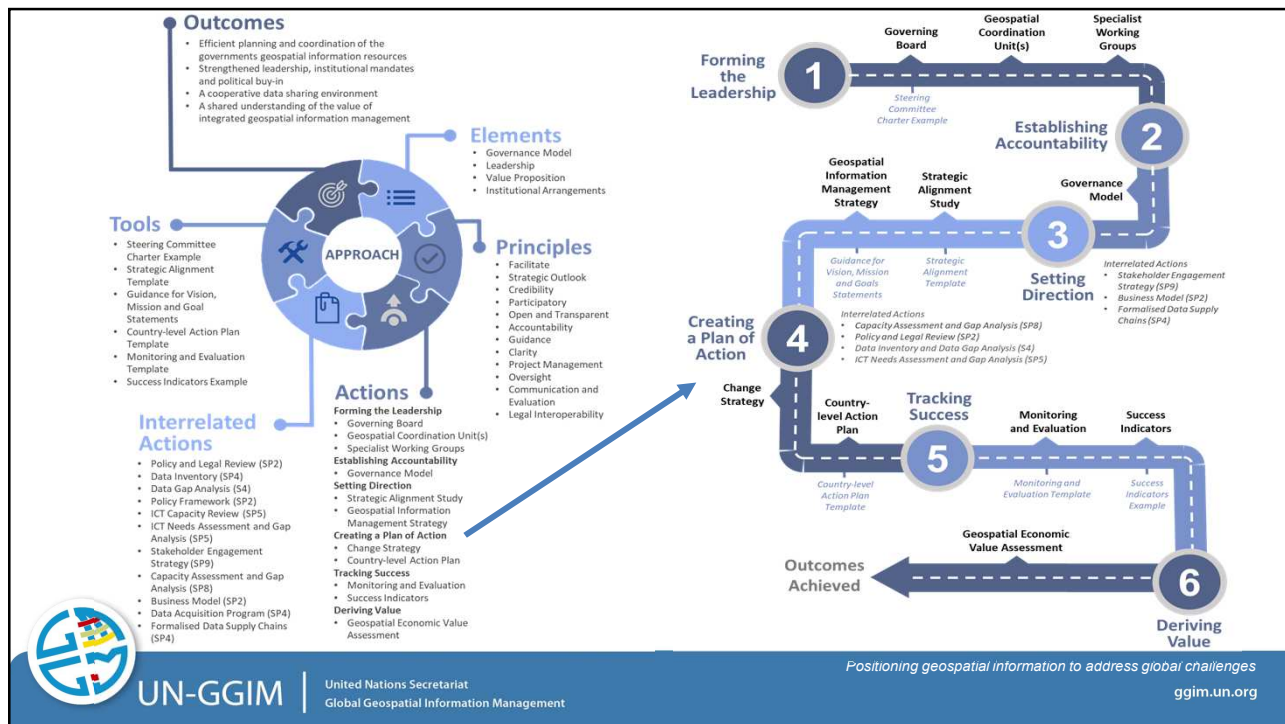
Actions repeated here as a different schematic, but with more detail regarding the 'Tools' and 'Interrelated Actions'. Will be hyperlinked for ease of search and navigation.

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Strategic Pathway 1
Governance and Institutions

This strategic pathway establishes the leadership, governance, institutional arrangements and a clear value proposition for multi-disciplinary and multi-sectoral participation in, and a commitment to, achieving an Integrated Geospatial Information Framework.

The objective is to attain political endorsement, strengthen mandates and build a cooperative data sharing environment, shared vision and understanding of the value of an Integrated Geospatial Information Framework, and the roles and responsibilities for its implementation.

Summary

Geospatial information is increasingly being harnessed to integrate government functions and commercial services – make decisions, access more engaged and informed, and agricultural production. Traffic congestion, weather reports, air pollution, bush fire monitoring, flood sensors, and electricity outage applications underpinned by geospatial information that can be synthesized into knowledge environments so that information can be accessed quickly make informed decisions. For government this means streamlining processes and reducing costs and improving overall economic and social sustainability. This level of geospatial capability can only be achieved through governance frameworks and with strong leadership that sets the vision and through all levels of government. Institutions need to be able to share information and work towards common strategic priorities. By interconnecting government functions through well-functioning frameworks, it is possible to bring together geospatial information sources so that it can be used seamlessly on a computer, tablet and smartphone. Good governance and cooperative institutional arrangements are essential to the geospatial information reform agenda. They create information challenges to be met head-on, provide flexibility to the rapidly changing environment, and the ability to embrace collaboration and business participation within a culture of digital reform.

Common to all governance and institutional arrangements are elements that are required to build a cooperative data sharing environment and an appreciation of the value of geospatial information for decision-making.

Strategic Pathway 1: Governance and Institutions

Strategic Pathway 4
DATA

This strategic pathway establishes a process and custodianship guidelines for best practice in integrated geospatial information that is consistent with the UN-GGIM framework.

The objective is to enable data custodianship, sharing and reuse obligations to be met through the execution of well-organized, planning, acquiring, integrating, archiving geospatial information.

Summary

Geospatial data is the foundation on which good governance is used in policy development and in the provision of services. It is used in policy development and in the provision of services. It is growing exponentially across all sectors and is used to make timely and accurate decisions. Having access to the right data and at the right time is critical to making the right decisions. It is data that provides new levels of insight into the past, present and future. For this reason, governments, businesses, and citizens are using the most accurate and up-to-date data available. An ecosystem that fosters the proper collection, storage, and management of geospatial data is a nation's 'digital currency', an asset that is designed, and managed to provide enduring value, quality, accuracy, security and use.

As the amount, variability and availability of geospatial data grows, it becomes an increasingly important part of government operations. Every part of government creates and manages geospatial data. An ecosystem that fosters the proper collection, storage, and management of geospatial data is a nation's 'digital currency', an asset that is designed, and managed to provide enduring value, quality, accuracy, security and use.

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Strategic Pathway 4: DATA

Strategic Pathway 7
Partnerships

This strategic pathway establishes cross-sectoral cooperation, coordination and collaborative governance, the geospatial industry, private sector, international community, as an important part of the national geospatial information framework.

The objective is to create and sustain the value of geospatial information through a culture based on inclusion, trust and collaboration that recognize common needs, actively engage stakeholders and achieve national priorities and outcomes.

Summary

The 2030 Agenda for Sustainable Development is an integrated plan of action for all countries and all stakeholders, acting in concert to achieve the Sustainable Development Goals. It is a blueprint for our future. It is a plan of action for people, planet, prosperity, and peace, and for justice, equality and inclusivity. It is a plan of action for people, planet, prosperity, and peace, and for justice, equality and inclusivity. It is a plan of action for people, planet, prosperity, and peace, and for justice, equality and inclusivity.

Partnerships should always be actively explored. They are essential to achieving the Sustainable Development Goals. Partnerships should always be actively explored. They are essential to achieving the Sustainable Development Goals. Partnerships should always be actively explored. They are essential to achieving the Sustainable Development Goals.

Strategic Pathway 7: Partnerships

Strategic Pathway 9
Communication and Engagement

This strategic pathway recognizes that stakeholder identification, user engagement and strategic communication are essential to successfully deliver an integrated geospatial information management framework nationally and internationally for sustainable social, economic and environmental development.

The objective is to ensure effective communication and engagement to enhance and deepen participation and contributions from all stakeholders and at all levels. Commitment, mutual understanding, collaboration, cooperation and communication are essential to successfully implement the Integrated Geospatial Information Framework within organizations and with stakeholders.

Summary

Communication and engagement develop and sustains effective, trusted and collaborative relationships with stakeholders. Successfully undertaken, it persuades stakeholders to invest in geospatial information and its applications. Communication and engagement raise awareness and advocacy to the community, businesses, professionals, decision makers and politicians of the relevance, contributions and benefits of integrated geospatial information management at all levels. It does so in the midst of rapidly changing societal norms and economic outlooks and against a backdrop of many competing agendas.

Gaining political and fiscal recognition of the need for integrated geospatial information is a challenge faced from local to global levels. The value of an effective communication strategy and implementation plan cannot be overstated towards ensuring a successful geospatial program. Adopting a strategic and professional communications approach, being inspiring and relevant stories, and finding champions is not familiar terrain for the geospatial community. Yet it is absolutely critical. This strategic pathway aims to help address this shortcoming.

Common to all communication and engagement programs are four key elements that are required to build commitment, mutual understanding and cooperation between stakeholders to successfully implement the Integrated Geospatial Information Framework. The four elements are:

- **Stakeholder and User Engagement** - identifies and develops relationships and alliances with advocates, partners, users and third parties. Stakeholder and user engagement should be ongoing as interests, needs and motivations are diverse and will continually evolve over time.
- **Strategic Messaging and Engagement** - seeks to develop the narrative for clear, succinct and compelling messages to all audiences and at all levels to engender initial buy-in and retain support during implementation. Using

Strategic Pathway 9: Communication and Engagement

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IGIF: Implementation Guide - First Chapter

- Chapter title: **Solving the Puzzle: Understanding the Implementation Guide**
- **Introduction** elaborates: What is the Framework, the Implementation Guide, the relationships with the Overarching Strategic Framework and the Country-level Action Plans. What is the purpose of the Implementation Guide, what is it to be used for and how we got here?
- 'Solving the Puzzle' Chapter will contain **nine** sections, namely:
 1. Executive Summary;
 2. Introduction;
 3. Describing the Guide;
 4. Examples of How the Guide will be Used and Managed;
 5. Describing the Strategic Pathways;
 6. How to Use the Guide;
 7. Country-level Action Plans;
 8. Benefits; and
 9. Interlinkages.

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Interactions



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