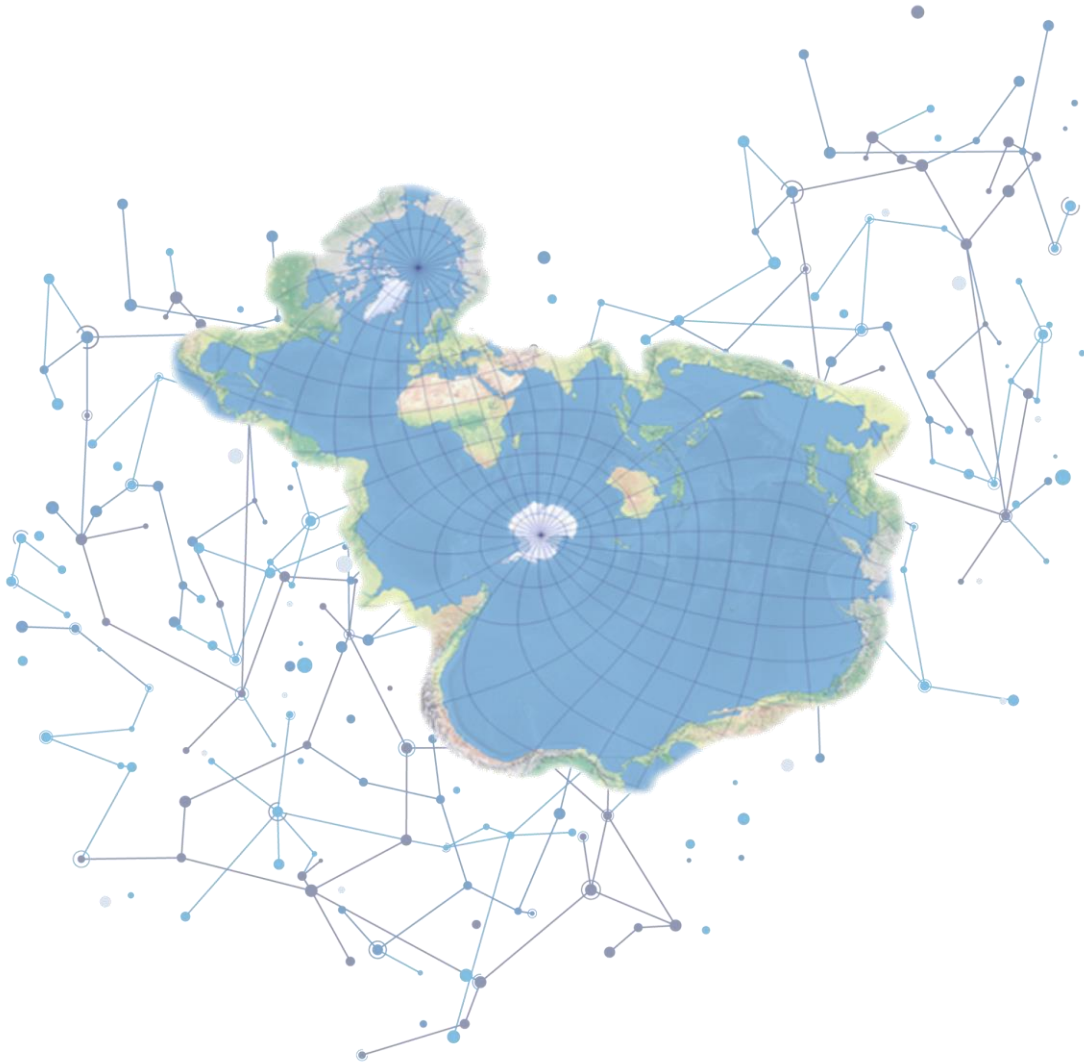


Operational Framework for Integrated Marine Geospatial Information (UN-IGIF-Hydro)

Part One: The Strategic Overview



2021
2030 United Nations Decade
of Ocean Science
for Sustainable Development

United Nations Committee of Experts on Global Geospatial Information Management
Working Group on Marine Geospatial Information
(July 2023)

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The United Nations Committee of Experts on Global Geospatial Information Management (UNGGIM) as the apex intergovernmental body seeks to play the lead role in setting the agenda for global geospatial information management and to promote its use to address key global challenges. UN-GGIM is the forum to liaise and coordinate among Member States, and between Member States, international organizations and stakeholders.



UN-GGIM
UNITED NATIONS
COMMITTEE OF EXPERTS ON
GLOBAL GEOSPATIAL
INFORMATION MANAGEMENT

Global Geospatial Information Management Section
Statistics Division
Department of Economic and Social Affairs
United Nations

Executive Summary

The Operational Framework for Integrated Marine Geospatial Information (UN-IGIF-Hydro) presents the case for investing in and improving marine geospatial information management programmes around the world.

It not only serves as a supplement to the Implementation Guide of the United Nations Integrated Geospatial Information Framework (UN-IGIF) for the hydro domain but also presents a set of value propositions to justify the “why” marine geospatial programmes are integral parts of digital information ecosystems and investment in them is foundational for national infrastructures.

The hydro domain¹ consists of the (approximately) 70% of the Earth’s surface which is water-covered - lakes, rivers and tributaries, deltas, seas, and oceans. Water is critical to socio-economic development, energy and food production, healthy ecosystems, and to human survival overall. Water is at the heart of adaptation to climate change and serves as a crucial link between society, the global economy, and the environment. More than four billion people depend on marine waters for fish as a primary source of protein (Food and Agricultural Organization 2014), and the International Maritime Organization (IMO) estimates that 90% of the world’s trade is conducted upon the seas and oceans (IMO 2015).

In order to sustainably manage that portion of the Earth’s surface that is covered by water - lakes, rivers and tributaries, deltas, seas, and oceans and all that it has to offer, governments will need to ensure that marine geospatial information management is fully integrated with wider digital information ecosystems for evidence-based policy development and decision making. This is a strategically crucial step for hydro or marine programmes to make as they work to increase their value and recognition within national infrastructures.

National geospatial programmes that support development priorities, including the ability to track progress on the Sustainable Development Goals, must ensure that marine geospatial capabilities are integrated, and it is equally important for national hydrographic or marine programmes to understand, and be partners, with parallel geospatial programmes.

The Ocean is the foundation of our world, home to more than half of all life on earth today. It provides food to billions and jobs to millions. In the race to tackle the climate and nature emergency, the ocean is our greatest hope. It absorbs over 90% of heat and almost a third of all carbon dioxide that humans have ever produced. It even provides the air we breathe - every second breath we take comes from our ocean. An integrated and well managed marine geospatial program will be prepared to meet the challenges of governance, planning, managing and coordinating resources, transportation, coastal resilience, recreation, and other aspects of the blue economy. Part One aims to provide a high-level overview of the Operational Framework for Integrated Marine Geospatial Management in order to present the case for investing in (and improving) marine geospatial programmes around the world. It serves as an introduction to assist in explaining the importance of marine geospatial information management to ministers, senior level managers, and those new to the concept of integrated marine geospatial information management. Part Two then provides elaborated guidance on how to integrate the hydro domain by leveraging the nine strategic pathways of the UN-IGIF.

¹ Encompassing inland water bodies and waterways, coastal zones, seas and oceans

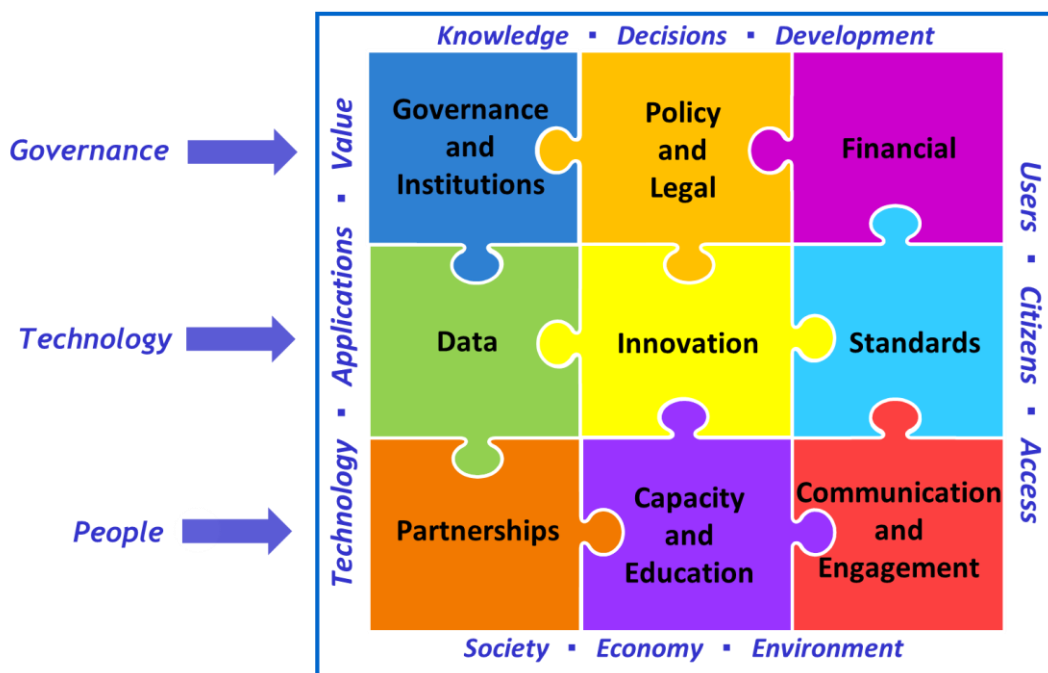
Throughout this document and the UN-IGIF-Hydro Part Two – The Strategic Pathways, the terms “hydro” and “marine” are intended to be all-encompassing of all oceans and seas, coastal, and inland waters and may be used interchangeably. The UN-IGIF-Hydro, developed and presented as a two-part document to leverage the guidance offered in the UN-IGIF, provides practical guidance for countries to extend the nine strategic pathways in the hydro domain, ultimately working towards the vision of the integration of the marine geospatial information management into the global geospatial information ecosystem and to enhance the ability to make informed decisions to support the preservation and management of the Earth, including inland waterways and waterbodies, seas and ocean’s resources

United Nations Integrated Geospatial Information Framework

The United Nations Integrated Geospatial Information Framework (UN-IGIF) provides a basis and guide for developing, integrating, strengthening and maximizing geospatial information management and related resources in all countries. It will assist countries in bridging the geospatial digital divide, secure socio-economic prosperity, and to leave no one behind.

The UN-IGIF comprises three separate, but interconnected parts: Part 1 is an Overarching Strategy; Part 2 is an Implementation Guide; and Part 3 is a Country-level Action Plan. The three parts comprise a comprehensive Integrated Geospatial Information Framework that serve a country's needs in addressing economic, social and environmental factors; which depend on location information in a continually changing world. The Implementation Guide communicates to the user what is needed to establish, implement, strengthen, improve, and/or maintain a national geospatial information management system and capability. UN-IGIF implementation follows nine strategic pathways on three key influences, that of Governance, Technology and People.

The UN-IGIF focuses on location information that is integrated with any other meaningful data to solve societal and environmental problems, acts as a catalyst for economic growth and opportunity, and to understand and take benefit from a nation's development priorities and the Sustainable Development Goals.



*Figure 1: United Nations Integrated Geospatial Information Framework;
three influences and nine strategic pathways*

The UN-IGIF-Hydro, then, seeks to provide practical guidance that countries can use to enhance the availability and accessibility of marine geospatial information (inclusive of hydrography, oceanography, marine geology, marine biology, human-related activities, maritime governance, and other water-related jurisdictions) and to realize the greatest benefit from their integrated geospatial information management arrangements for the betterment of society, economy, and environment.

Catalyst for Change

Following on the initiatives described in the background section (later in this document), the Working Group on Marine Geospatial Information presented a white paper² on the availability and accessibility of marine geospatial information in 2019. The paper noted the significant strides achieved in collecting, aggregating, and making marine geospatial data available. However, many initiatives still struggle to unlock the full societal, environmental, and economic potential of marine geospatial information. The need for better integrated and sustained access to marine geospatial information remains high. The ability to effectively share, use, and re-use marine geospatial information across and between diverse groups of stakeholders is dependent upon access to, and awareness of, marine geospatial data and its sources.

Some primary challenges faced when managing, providing, and utilizing marine geospatial data include: (a) Marine geospatial data collection and management are generally funded for a specific purpose, e.g. for safety of navigation, with tightly defined responsibilities for the designated agency; (b) Most of the existing legislations governing geospatial data were developed with multiple, diverse geospatial applications in mind, e.g., cadastre, safe navigation, resilience and disaster programmes, maritime boundaries and regulation; (c) The integration of geospatial data from the terrestrial and maritime domains, including data from inland waterways and water bodies; (d) The balance between concerns over national security with data-sharing when managing, providing, and utilizing marine geospatial data; and (e) The high comparative cost and lack of resources for collection and sharing of marine geospatial data.

The main recommendations of the white paper were to: (a) Develop data-sharing partnerships to facilitate the timely sharing of data between Member States, government agencies, research and academia, private data-providers, and other users and stakeholders; (b) Implement internationally agreed-upon standards, including standards for metadata, to make data-sharing easier and more discoverable (e.g., ISO, IHO, and OGC suite of standards); (c) Collect and manage marine geospatial data with multi-use purposes in mind, and increase stakeholder awareness of what information is available and where; and (d) Contribute to capacity development opportunities when resources allow, and actively transfer knowledge, tools, and techniques that facilitate the collection, management, and sharing of marine geospatial data in developing counterparts.

The UN-IGIF-Hydro is part of the Working Group's response to the use case exercise and its recommendations and is focused on describing practical guidance for the operationalization of the UN-IGIF at the country-level.

² https://ggim.un.org/meetings/GGIM-committee/10th-Session/documents/E-C.20-2020-31-Add_2-White-paper-on-readily-available-and-accessible-marine-geospatial-information-23Jul.pdf

Our desired future

The hydro domain, primarily operated by hydrographic offices, becomes fully integrated with other geospatial domains, including terrestrial, cadastral, statistical, meteorologic, oceanographic, and others. This integration allows the full digital information ecosystem to take advantage of coordinated services and standards, joint collection and management of data for multi-use purposes, coordinated data distribution and access, cross-thematic data integration, commitment to cross-sector capacity development, and shared (cohesive) value propositions.

The world will be able to realize the maximum benefit from their geospatial information, including marine geospatial, for the environment, society, and economy.

Access to water-related geospatial information plays a critical role in the global response to societal and environmental issues. Geospatial information services using a data-driven and cross-sectoral approach helps governments make evidence-based decisions, develop strategic priorities, and track progress toward the implementation of the 2030 Agenda for Sustainable Development.

Hydrographic program integration with national geospatial initiatives plays a vital role in addressing issues, challenges, and opportunities in the oceans and seas, coastal zones, deltas, tributaries, and internal waters and water bodies in the management of the following sectors:

- The Blue Economy tourism
- Coastal Resilience
- Marine spatial planning
- Emergency management and response
- Maritime limits, regulation and administration of spaces
- Law enforcement and defense

Imagine visiting a federated data hub or portal that includes road network, population, electric grid, public transportation, storm surge, shoreline, and hydrographic information that is all curated by subject matter expert offices and is available in multiple, interoperable formats.

There is a compelling case for change, a value proposition for the global community where the hydro domain is an integral part of the 'geospatial whole' and takes its seat amongst all actors in a national digital information ecosystem. This vision of a future geospatial information ecosystem also goes far beyond traditional national spatial data infrastructure (NSDI) and marine spatial data infrastructure (MSDI) processes, models, and architectures. The Ocean unifies national, regional and global actors.

The Way forward

The UN-IGIF-Hydro intends to offer practical guidance for assistance in implementing the nine strategic pathways in the marine geospatial domain. It can be used for both established and developing programmes who wish to become a part of the larger digital information ecosystem. The inclusion of value propositions is intended to assist with the explanation of why marine geospatial data and the integrated management of it are integral components of national and global infrastructures.

Vision -

Integrating water into the global geospatial information infrastructure ecosystem

Mission -

To provide practical guidance that countries can use to enhance the availability and accessibility of marine geospatial information, inclusive of all water-related jurisdictions, and to realize the greatest benefit from their integrated geospatial information management arrangements for the betterment of society, environment, and economy.

This Operational Framework expands upon the UN-IGIF's nine strategic pathways where considerations for the marine or hydro aspects might be different or require specific attention.

The intention of this Operational Framework, in its two interconnected parts, is not to replicate the UN-IGIF but to:

- Provide practical advice and promote good practices and broad perspectives
- Support any body, organization, or state
- Assist in the operationalization of the UN-IGIF at the country-level
- Establish and/or maintain a national and international geospatial operational framework
- Ensure the inclusion of Earth's watered surface in that framework

Goals -

Facilitate Data Partnerships; Increase the use of international Standards; Increase Capacity Strengthening Opportunities; Ensure Data Interoperability; Improve Data Accessibility and Availability; Provide Guidance for Emerging Marine Geospatial Programs.

Value Propositions for Marine Geospatial Programs

Why should a government invest in marine geospatial information framework? There are many reasons for making such an investment: management of marine resources; shipping and commerce; establishing and maintaining maritime boundaries; climate change and coastal resilience; and taking advantage of the blue economy are a few examples of where an investment in marine geospatial information framework, coordinated with adjacent geospatial programmes, can maximize potential progress and benefit. Embarking on the UN-IGIF-Hydro journey is an investment that will provide a return on investment in the form of improved lives, a strengthened environment, and economies.

Commercially, a value proposition is defined as **a promise by a company to a customer or market segment**. It defines "why" a customer should buy a product or service from that particular business and should appeal to a customer's strongest decision-making drivers. The UN-IGIF-Hydro starts with value propositions as a means to communicate and measure the benefit of integrated geospatial information

for national priorities. Detailed value propositions, therefore, answer the question “why” governments need integrated geospatial information. The value propositions for integrating the hydro domain into larger geospatial ecosystems include:

- i) Nautical Charting and Transportation
- ii) Support for Resource Management and Planning
- iii) Establishing Maritime Boundaries
- iv) Subsistence
- v) Emergency Response, Disaster Management and Response
- vi) Integrated Marine Cadastral Systems
- vii) Energy
- viii) Environmental Protection
- ix) Climate Change
- x) Scientific Research

This list is not exhaustive from a global perspective and may not be applicable to all implementers. We view this as an evolving part of the UN-IGIF-Hydro and fully realize that additional propositions are likely necessary.

Contextual Background

Seventeen Goals to Transform Our World

On 1 January 2016, the 17 Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development – adopted by world leaders in September 2015 at an historic UN Summit — officially came into force. From 2016 through to 2030, these Goals universally apply to all countries and will mobilize efforts to end all forms of poverty, fight inequalities and tackle climate change, whilst ensuring that no one is left behind. The 17 Goals and 169 targets demonstrate the scale and ambition of the agenda.



Figure 2: Sustainable Development Goals (SDGs)³

³ <https://sustainabledevelopment.un.org/?menu=1300>

The SDGs are a call for action by all countries to promote prosperity while protecting the planet with partnerships for the wellbeing of the people. They recognize that ending poverty must go hand-in-hand with strategies for economic growth; they address societal needs including education, health, social protection, and job creation, all within the frame of tackling climate change issues, biodiversity loss, and environmental protection. Goal 14 is life under water:

Sustainable Development Goal 14: Conserve and sustainably use the oceans, seas and marine resources

The ocean drives global systems that make the Earth habitable for humankind. Our rainwater, drinking water, weather, climate, sea-level, coastlines, much of our food, and even the oxygen in the air we breathe, are all ultimately provided and regulated by the sea. Careful management of this [essential global resource](#) is a key feature of a sustainable future. However, a continuous deterioration of coastal waters owing to pollution, and ocean acidification is having an adverse effect on the functioning of ecosystems and biodiversity. This is also negatively impacting small scale fisheries. Saving our ocean must remain a priority. Marine biodiversity is now critical to the health of people and our planet. Marine protected areas need to be established, effectively managed and well-resourced. Regulations need to be put in place to reduce overfishing, marine pollution and ocean acidification.

Decade of Ocean Science for Sustainable Development

The United Nations has proclaimed a **Decade of Ocean Science for Sustainable Development (2021-2030)**⁴ to support efforts to reverse the cycle of decline in ocean health and gather ocean stakeholders worldwide behind a common framework that will ensure ocean science can fully support countries in creating improved conditions for sustainable development of the Ocean. The marine realm is the largest component of the Earth's system that stabilizes climate and supports life on Earth and human well-being.

However, the First World Ocean Assessment released in 2016 found that much of the ocean is now seriously degraded, with changes and losses in the structure, function and benefits from marine systems. In addition, the impact of multiple stressors on the ocean is projected to increase as the human population grows towards the expected nine billion by 2050. Adaptation strategies and science-informed policy responses to global change are urgently needed. Scientific understanding of the ocean's responses to pressures and management action is fundamental for sustainable development. Ocean observations and research are also essential to predict the consequences of change, design mitigation and guide adaptation.

Global Geospatial Information Management

The UN-GGIM Bureau agreed to the addition of a new work item, "marine geospatial information", for its seventh session in August 2017 that was subsequently approved by UN-GGIM. In its decision 7/111, UN-GGIM welcomed the addition of a new work item, "marine geospatial information" into the provisional agenda for its eighth session.

In its Decision 7/111 - Marine geospatial information, UN-GGIM (a) Welcomed the report of the Secretariat on marine geospatial information, and agreed that strengthening global geospatial information management included addressing marine geospatial information to support Member States in developing national policy, determining strategic priorities, making decisions and measuring and

⁴ <https://en.unesco.org/ocean-decade>

monitoring global development outcomes; (b) Endorsed the terms of reference and establishment of the working group on marine geospatial information, and welcomed the participation and contribution of Member States to the working group, noting the need for appropriate technical expertise and broad geographical representation; (c) Noted that, given the complexity and broad scope of marine geospatial information, it was critical to ensure that the working group engaged with the appropriate subject matter experts to ensure that the working group remained focused, within its scope, not political in nature and connected to the activities of other working groups of UN-GGIM, where and as appropriate; (d) Encouraged the newly formed working group to provide a forum for dialogue and collaboration between Member States to address issues related to the availability, accessibility and application of marine geospatial information, and linkages to national spatial data infrastructure, to ensure the principle of “build once, use many times”.

UN-GGIM, in its Decision 8/112 - Marine geospatial information, (a) Welcomed the report of the working group on marine geospatial information, and commended the work and efforts of the working group in developing its work plan for the biennium 2018–2019, in which it addressed issues related to the availability, accessibility and application of marine geospatial information; (b) Noted the activities and progress of the working group, including the preparation of a communication plan that described the benefits and value of marine geospatial information and addressed livelihoods and the well-being of communities, in the context of the 2030 Agenda for Sustainable Development; (c) Encouraged the working group to consider a use-case study on data availability and interoperability, and linkages to national geospatial information infrastructure that relates to inland water bodies and waterways, coastal zones, seas and oceans and to consider good practices and exemplars, including the Arctic spatial data infrastructure project; (d) Requested the working group to take note and consider in its activities the United Nations Decade of Ocean Science for Sustainable Development and related international initiatives, including the Seabed 2030 project; (e) Noted that the working group encouraged and promoted the use of internationally agreed standards, such as the S-100 suite of geographic standards, including the S-121 standard, across all marine activities, and noted also that, in the developing specifications and standards, the working group engaged with standards development organizations; (f) Encouraged the working group to remain focused, actively seek collaboration with other expert groups and working groups of the Committee of Experts, in order to avoid duplication, and ensure that the activities in this regard remained technical in nature; (g) Noted that the working group would convene its first expert meeting, directly after the meeting of the working group on marine spatial data infrastructures of the International Hydrographic Organization, to be held in Busan, Republic of Korea, during the first week of March 2019.

With Decision 9/108 - Marine geospatial information, UN-GGIM (a) Welcomed the report of the working group on marine geospatial information, and noted its progress, including the initiation of a use case exercise on data availability and interoperability, and the successful convening of its first formal meeting in Busan, Republic of Korea, in March 2019; (b) Noted that the working group had utilized the United Nations Integrated Geospatial Information Framework as a mechanism for articulating and demonstrating national leadership in marine geospatial information and that the nine strategic pathways were means towards implementing integrated marine geospatial information systems in a way that would deliver a vision for sustainable social, economic and environmental development; (c) In recognizing that marine geospatial information must be made available and accessible for a multiplicity of purposes, invited the working group to consider the variety of marine data sources that might be available, and in this regard to consider capacity development activities to strengthen marine geospatial information capabilities in developing countries and small island developing States; (d) Noted the working group’s updated workplan

for the biennium 2019–2020, and requested that the group consider in its activities the United Nations Decade of Ocean Science for Sustainable Development and related international initiatives, including the Seabed 2030 project; (e) Noted that the participation of the International Hydrographic Organization and the Open Geospatial Consortium had strengthened the working group’s commitment to promoting geospatial standards, including the S-100 suite of standards, and looked forward to the preparation of a practical guide for the use of geospatial standards in marine data; (f) Requested the working group to consider extending the use case exercise to a broader audience beyond the working group so as to promote a better understanding of the challenges and issues the working group needed to address, including to provide real-world examples of the benefits of and need for readily available and accessible marine geospatial information; (g) Encouraged broader geographic participation from Member States in the working group, including from Africa and small island developing States; (h) Noted that the working group’s terms of reference included the consideration of coastal zones, inland waterways and water bodies, and to facilitate integrated ecosystems geospatial data management practices.

At its Tenth Session, UN-GGIM in its Decision 10/109 - Marine geospatial information, (a) Welcomed the report of the working group on marine geospatial information, and noted its progress, including the successful completion of its use case exercise on data availability and interoperability, the associated white paper on readily available and accessible marine geospatial information and the successful convening of its second formal meeting in Rostock-Warnemünde, Germany, in February 2020; (b) Noted the ongoing efforts of the working group to implement the United Nations Integrated Geospatial Information Framework within the hydro domain, where water was the dominant geographic feature, and that the white paper on readily available and accessible marine geospatial information provided a practical starting point, as data and metadata standards, data collection and management, data-sharing partnerships and the integration of terrestrial and maritime geospatial data were priority areas for many Member States; (c) Noted that the working group was considering integrated ecosystems based data management practices that would require collaboration across multiple disciplines and institutions, including users and stakeholders, and that the United Nations Integrated Geospatial Information Framework provided a coherent mechanism for effective and integrated marine geospatial information management, as well as the means to raise awareness and advocacy and facilitate communication and collaboration between the maritime, terrestrial and cadastral domains; (d) Encouraged the working group to strengthen collaboration with the International Hydrographic Organization, particularly in the areas of capacity development and application of standards, including the S-121 standard for maritime limits and boundaries, and to consider engaging other international organizations focusing on ocean sciences and observations; (e) Recognized the continued engagement and support of the working group for the United Nations Decade of Ocean Science for Sustainable Development, the General Bathymetric Chart of the Oceans Seabed 2030 project and the Innovation and Technology Laboratory of the International Hydrographic Organization in Singapore, to advance the objectives, functions and workplan of the Working Group and address the sharing, integration and interoperability of terrestrial and marine geospatial information; (f) Welcomed the additional participation of Member States in the working group and encouraged further engagement with Africa and small island developing States to strengthen national capacities in marine geospatial data collection, management, dissemination and visualization towards readily available and accessible marine geospatial information, and noted that the third formal meeting of the working group would be hosted by Singapore in 2021 when the global situation permits.

In 2021, UN-GGIM at its Eleventh Session, with Decision 11/109 - Marine geospatial information (a) Welcomed the report of the working group on marine geospatial information and noted the working group's workplan for the period 2021–2022 and progress made, including the practical collaboration with the International Hydrographic Organization, the International Hydrographic Organization-Singapore Innovation and Technology Laboratory and the Open Geospatial Consortium, and, in noting the leadership transition, welcomed Singapore as Co-Chair, and expressed its sincere appreciation to Burkina Faso for its leadership and contribution to the working group; (b) Expressed its appreciation for the continuing efforts to align the work of the working group with the United Nations Integrated Geospatial Information Framework in modernizing the geospatial ecosystem, and welcomed the development of an integrated policy guidance and operational framework (draft operational framework) for the hydro domain that embraced all water-related elements, including oceans and seas, coastal zones, deltas and tributaries, inland water bodies and waterways, as an important contribution in this modernization, while reiterating that the working group must not replicate the Framework; (c) Recognized that the draft operational framework, tentatively named "IGIF-Hydro", was to promote and advise on practical considerations regarding the integration of the hydro domain, a domain that in general does not include every element of "hydro" within the geospatial ecosystem, and suggested further deliberation on how the draft operational framework for the hydro domain should be named; (d) Noted that the integration of the terrestrial, maritime and cadastral domains remained a priority for Member States, and encouraged further consideration to ensure that institutions collaborate to consider and develop interoperable arrangements, standards and infrastructures for the integration of all types of geospatial information leveraging the United Nations Integrated Geospatial Information Framework and to advocate guidance, standards and practices that would facilitate seamless integration of datasets spanning the terrestrial, maritime and cadastral domains; (e) Urged Member States and stakeholders to recognize the hydro domain as being cross-thematic and cross-jurisdictional, covering hydrography, oceanography, marine geology, marine biology, human-related activities and maritime governance, and that the draft operational framework served as a bridge between the United Nations Integrated Geospatial Information Framework and marine geospatial information management practices, in particular in support of developing effective and inclusive integrated marine geospatial information management and programmes; (f) Encouraged consideration of and support for the United Nations Decade of Ocean Science for Sustainable Development and the General Bathymetric Chart of the Oceans Seabed 2030 project to contribute, with the draft operational framework, to the goal to conserve and sustainably use the oceans, seas and marine resources, and in this regard, noted the importance of engaging the ocean science and policy and legal communities towards developing integrated solutions; (g) Requested the working group to focus on developing and completing the draft operational framework in a timely manner in consultation with Member States and relevant stakeholders; and noted the planned webinar series in October 2021 as precursor activities for the third expert meeting of the working group, expected to be convened in April 2022 together with an international seminar, and thanked Singapore for hosting those important events.

United Nations Integrated Geospatial Information Framework (UN-IGIF)

UN-GGIM at its eighth session in August 2018 adopted the Integrated Geospatial Information Framework (UN-IGIF) to provide a basis, a reference and a mechanism to support establishment or improvement of national geospatial information management arrangements. It can also coordinate activities to achieve alignment between existing national capacities, capabilities and infrastructures, including the hydro or marine sector. UN-IGIF aims to translate high-level concepts to practical implementation guidance for use by Member States and does this by leveraging seven (7) underpinning principles, providing eight (8) goals

and nine (9) strategic pathways, as an element for more effective geospatial information management practices and policies.

UN-IGIF comprises three interconnected parts: Part 1 is an Overarching Strategy; Part 2 is an Implementation Guide; and Part 3 is a Country-level Action Plan. The three parts comprise a comprehensive Integrated Geospatial Information Framework that serve a country’s needs in addressing social, environmental and economic factors; which depend on location-based information in a continually changing world. UN-IGIF focuses on geospatial information that is integrated with any other meaningful data to solve societal and environmental problems, acts as a catalyst for economic growth and opportunity, and to understand and benefit from a nation’s development priorities and the Sustainable Development Goals.

Part 1 - Overarching Strategy sets the context of ‘why’ geospatial information management needs to be strengthened and why it is a critical element of national social, environmental and economic development. It focuses on the role of geospatial information in the digital age and how that information is integral to government functions at all levels.

Part 2 - Implementation Guide describes ‘what’ actions can be taken to strengthen geospatial information management. The Implementation Guide is a reference resource that provides information for governments to design, plan, establish, implement and maintain nationally integrated geospatial information frameworks in their country in such a way that transformational change is enabled, visible and sustainable.

Part 3 - Country-level Action Plan is specific to each country and details ‘how’ the guiding principles, options, and actions specified in the Implementation Guide will be carried out, when and by whom. Importantly, the CAP is a plan, not a program that is implemented.

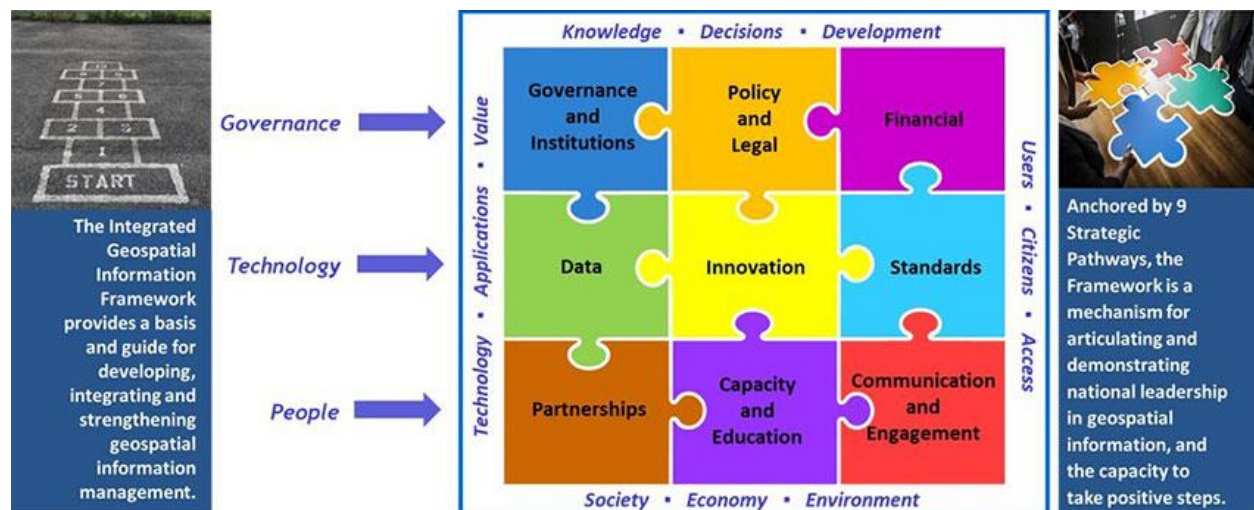


Figure 3: United Nations Integrated Geospatial Information Framework – Nine strategic pathways for transformational change

Supporting Timeline Leading to the UN-IGIF-Hydro

Report of UN-GGIM on its Seventh Session, August 2017.

E/2017/46 - E/C.20/2017/18

Decision 7/112

National geospatial data and information systems

(d) Noted the need to leverage and build upon the ongoing activities of the Committee and Member States, including guides, standards and frameworks, and the sharing of good practices and experiences in the development of the country-level action plans and road maps to operationalize and ensure the sustainability of the geospatial framework.

Report of UN-GGIM on its Eighth Session, August 2018.

E/2018/46 - E/C.20/2018/19

Decision 8/113

National geospatial data and information systems

(c) Adopted part 1, consisting of the overarching strategic framework, as a forward-looking document developed to provide overarching strategic messages in the context of an expansive, integrated national framework, focusing on the policy, perspectives and key elements of geospatial information, and in this regard supported the preparation of an illustrative summary as a high-level reference document aimed at enhancing geospatial awareness for policymakers and decision makers;

Report of UN-GGIM on its Tenth Session, August/September 2020.

E/2021/46 - E/C.20/2020/35

Decision 10/103

Integrated Geospatial Information Framework

(d) Noted the global significance of the Framework, which served as a key umbrella for the many activities under the purview of the Committee of Experts, including the United Nations Global Geospatial Information Management regional committees and thematic groups, which could be applied to any country to guide transformational change, and which would be a living and usable document to be reviewed and refined through an iterative process, on the basis of the practical implementation experiences of Member States;

Report of UN-GGIM on its Eleventh Session, August 2021.

E/2022/46 - E/C.20/2021/16

Decision 11/103

Integrated Geospatial Information Framework

(g) Emphasized that the Integrated Geospatial Information Framework now provided an overarching paradigm to further strengthen nationally integrated geospatial information management, not only for Member States that were in the early stages of adopting national spatial data infrastructures but also for those that had already successfully implemented spatial data infrastructure capabilities, had that continuous collaboration would be necessary with other emerging and complementary initiatives, such as the Geospatial Knowledge Infrastructure, the European Union Location Framework Blueprint and a geospatial ecosystem beyond spatial data infrastructures, which provided direct interlinkages with the Framework and which would ultimately extend the Framework's relevance in the future geospatial information ecosystem.