

The Importance of MSDI

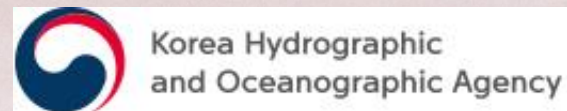
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Data is the new oil

DATA IS THE NEW OIL

“The world’s most valuable resource is no longer oil, but data”



The Digital Economy

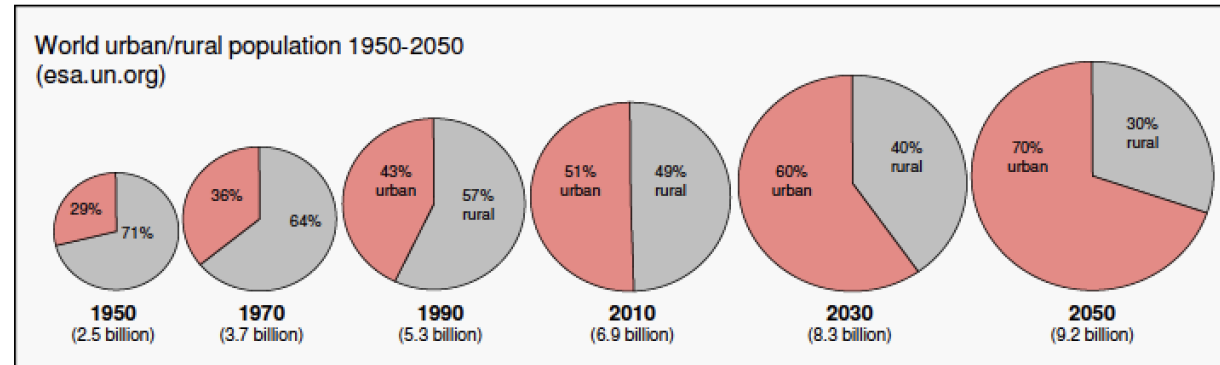
“Geospatial data is the scaffolding of the digital economy”
Daniel Zhang, CEO Alibaba Group



Some of the big issues and challenges we are facing today...

Population growth

- World population increasing to 9.2 billion by 2050



Urban growth

- Land, Housing, Infrastructure, Transport, Health & Safety, Water & Waste, Environment & Energy, Economy

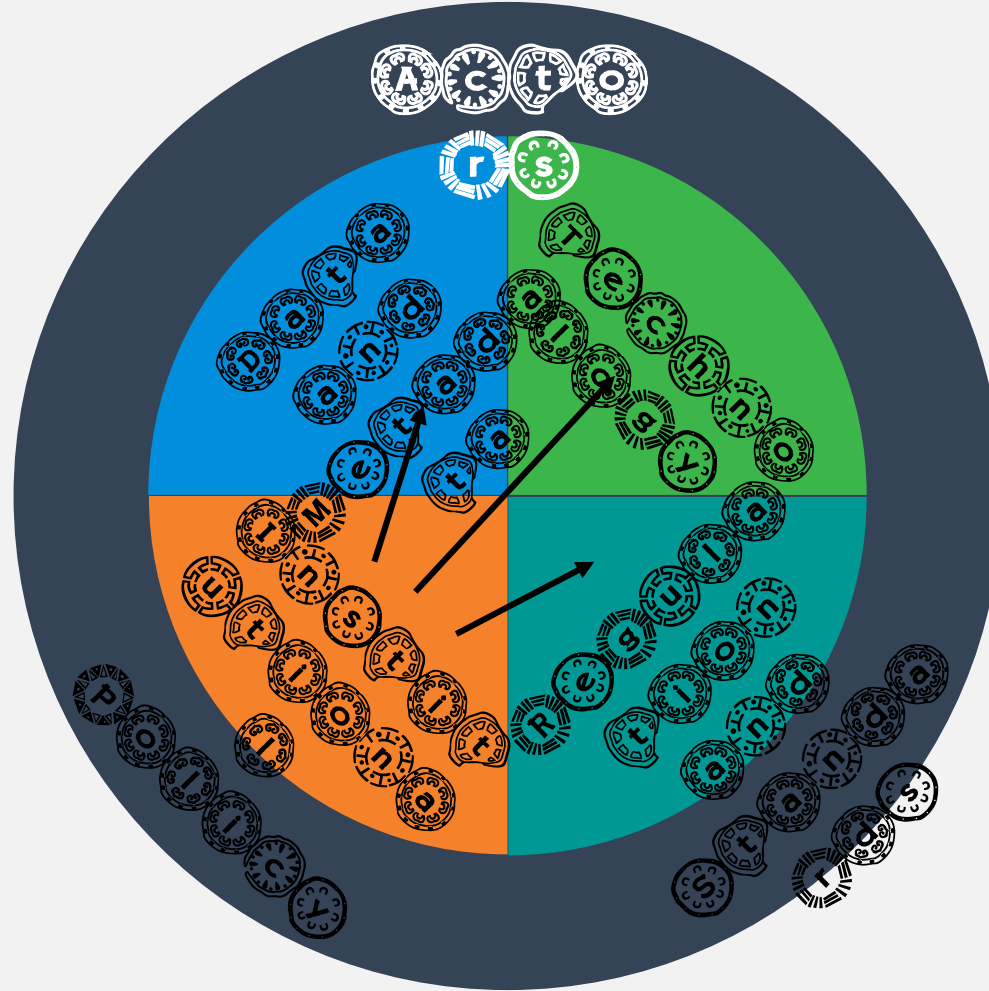


Spatial Data Infrastructure

- Spatial information is an enabling technology & infrastructure for modern society.
- SDI is all about facilitation and coordination of the exchange and sharing of spatial data
- “Technologies, policies and institutional arrangements that facilitate the availability of and access to spatial data.”
(The SDI Cookbook, 2009).
 - Distribution of spatial data
 - Standardization for interoperability
 - Providing central access point to data with cataloguing
 - Maintaining data by the original producer
 - Avoiding duplication of efforts

The basic five elements of SDI

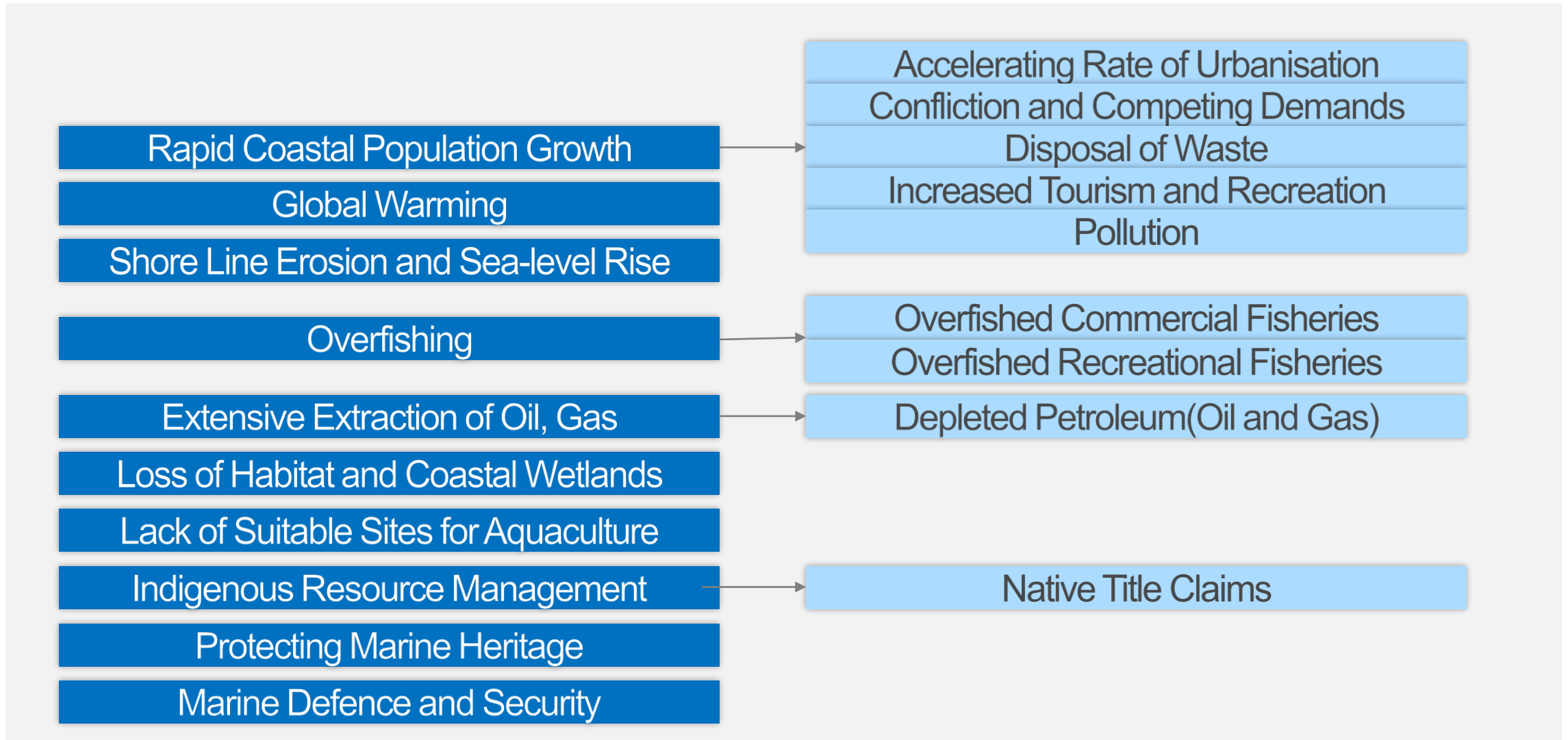
SDI



Motivation for MSDI

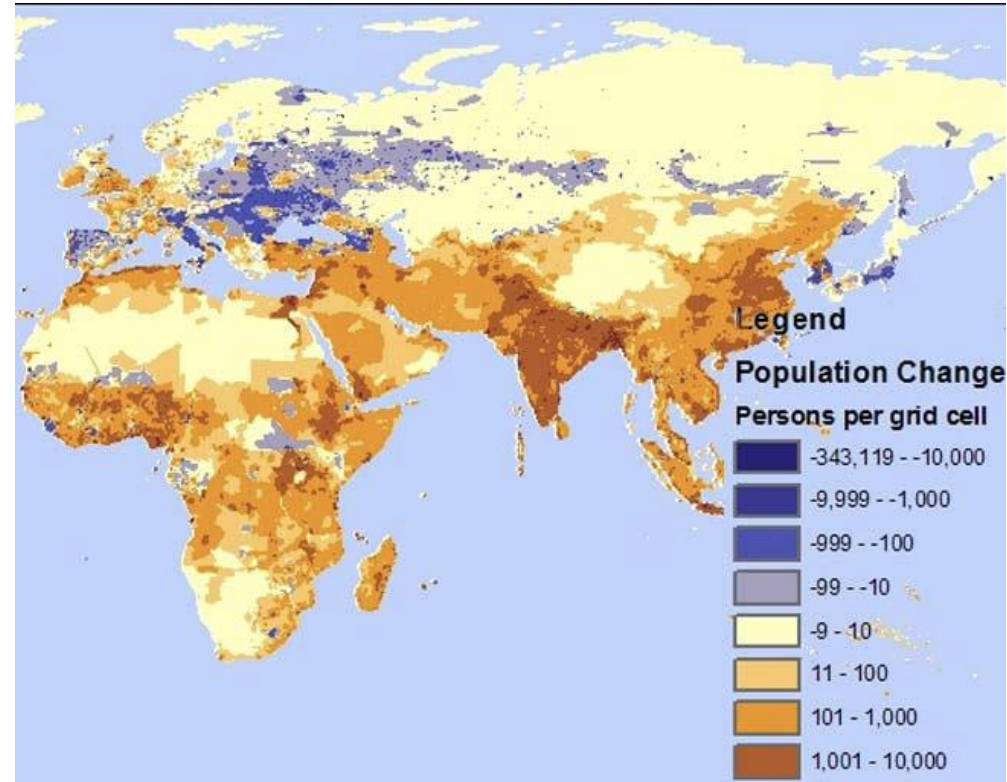
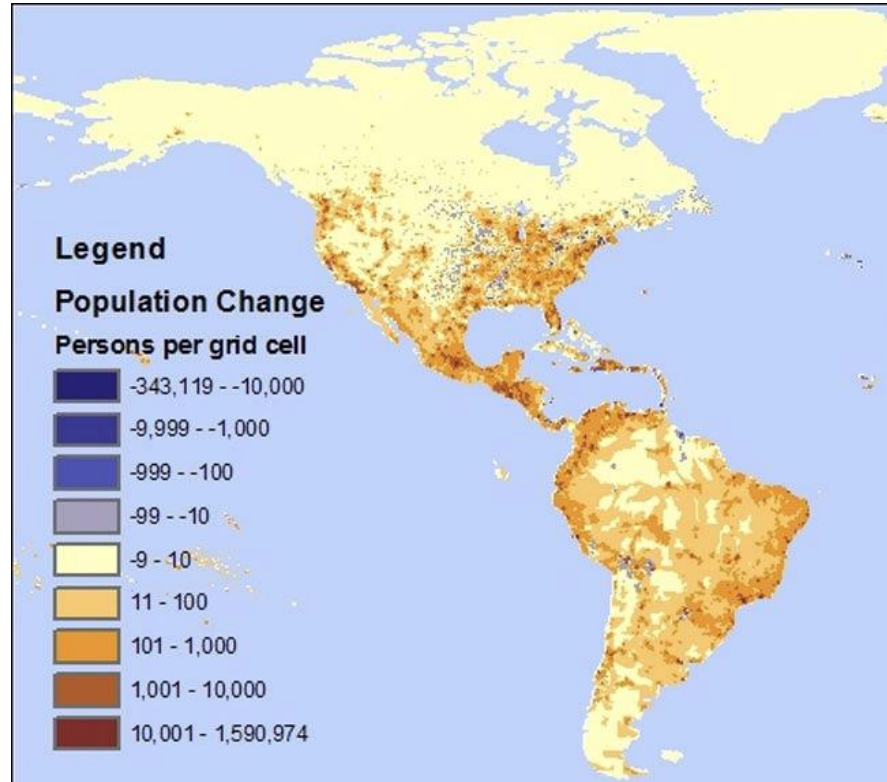
- The world's ocean covers almost 72% of the surface of the earth and holds 97% of the world's water.
- Nearly half of the world's population lives within 200 kilometers of a coastline (with this number likely to double by 2025).
- The marine environment provides half of the food source for countries within Asia and the Pacific (Creel, 2003)
- Only 10% of the sea floor has been surveyed to produce an underwater digital elevation model (GEBCO, 2011).

Marine and coastal management issues



Marine and coastal management issues

Rapid Coastal Population Growth

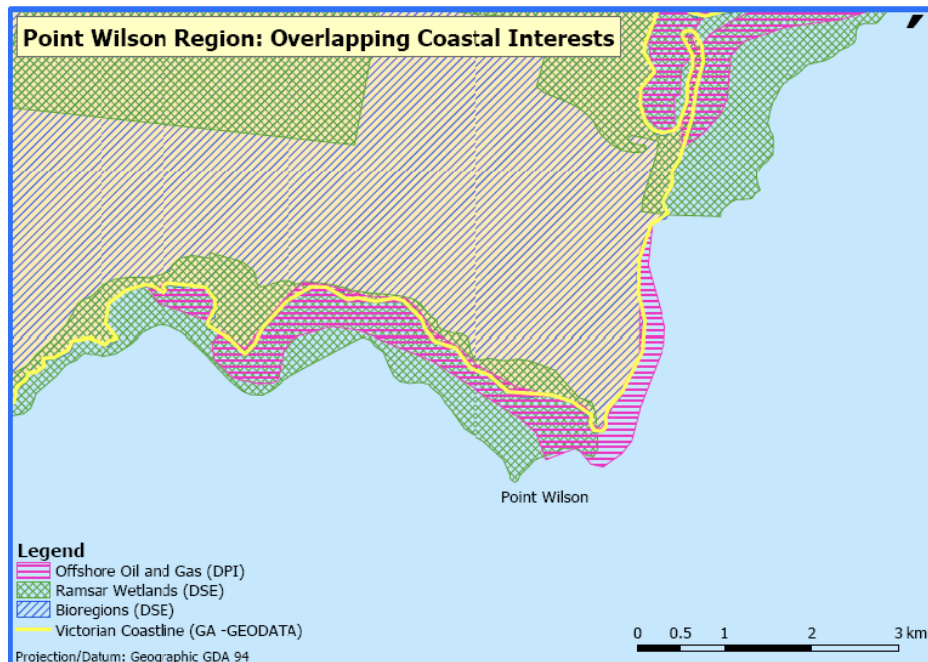


- Increasing population in coastal areas.
- Exposing 2.75 billion people worldwide to the effects of sea-level rise and other coastal threats posed by global warming.

Marine and coastal management issues

Rapid Coastal Population Growth

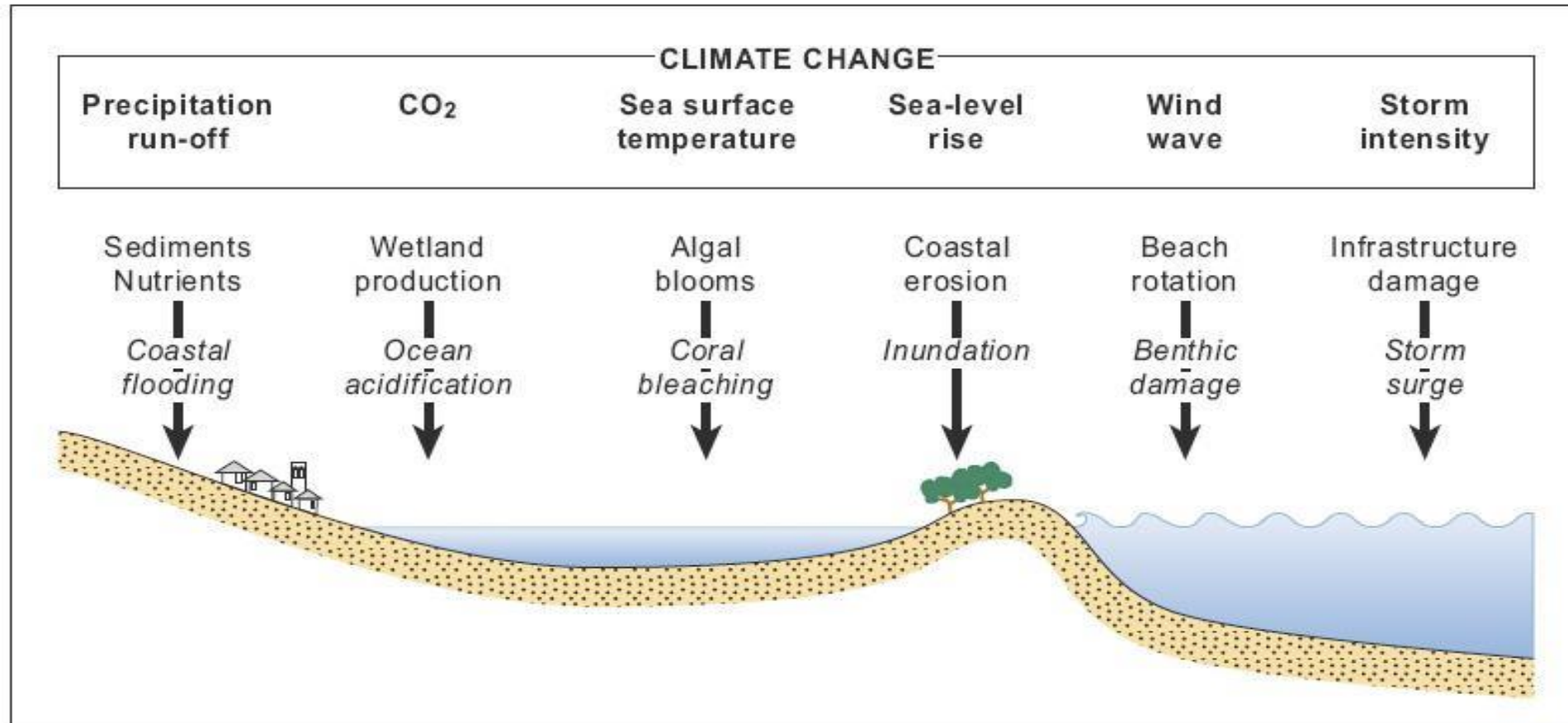
- Accelerating rate of urbanization
- Conflict and competing demands
- Disposal of waste
- Increased tourism and recreational activities
- Pollution



Marine and coastal management issues

Global Warming

Climate change drivers and impacts on the coast



Marine and coastal management issues

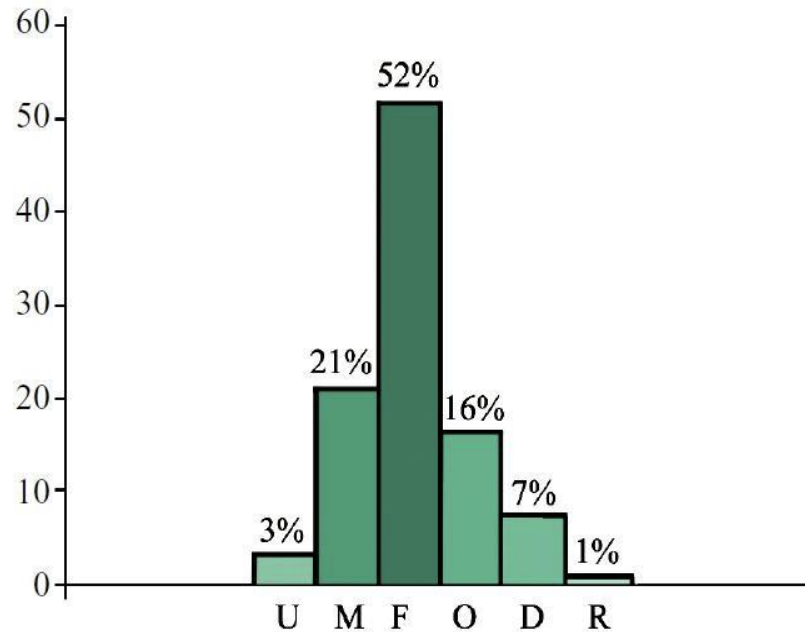
Shoreline Erosion, Accretion and Sea-level Rise



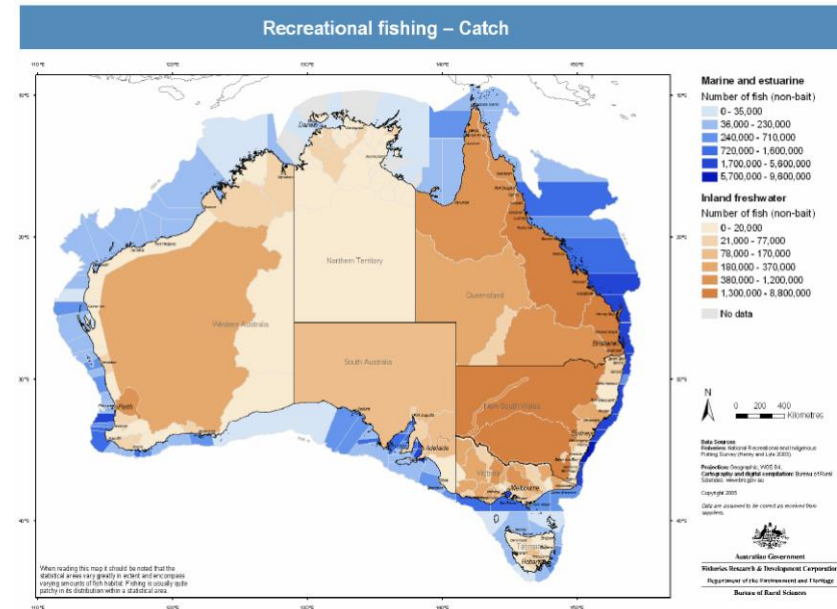
Before and after tsunami in Kalutara Beach – Sri Lanka.

Marine and coastal management issues

Overfishing



- State of world fish stock items in 2003. U, underexploited; M, moderately exploited; F, fully exploited; O, overfished; D, depleted; R, recovering (Garcia and Grainger, 2005)

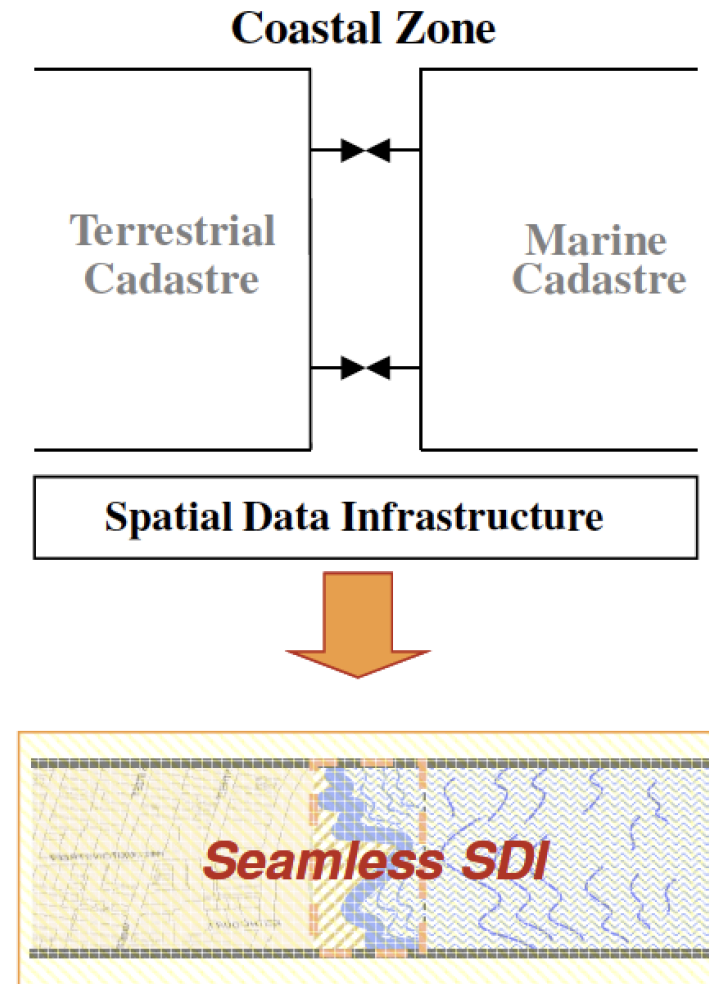


National recreational fishing catches
- Australia (BRS, 2005)

Marine and coastal management issues

Seamless SDI

- One platform instead of two to increase the efficiency and effectiveness of the management and administration of the land, marine and coastal environments.
- Land-Sea interface and coastal zone management: 75% of all marine pollution comes from land-based sources.

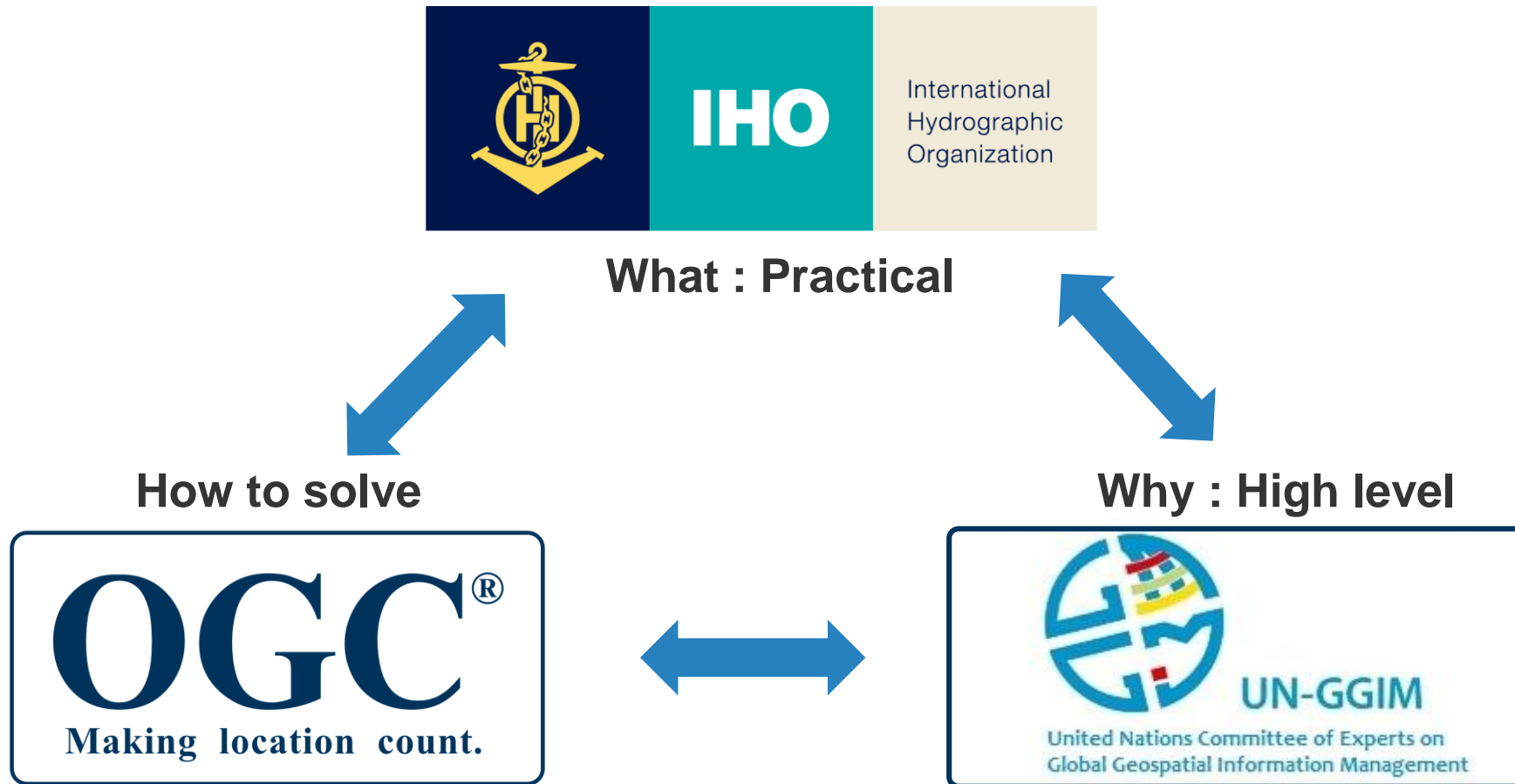


Hierarchy of MSDI



- The success of developing any type of MSDIs, heavily depends on individuals realizing the need to cooperate with each other.
- MSDI can be seen at different levels.

IHO, OGC, UN-GGIM and MSDI



IHO MSDI WG

- MSDIWG -The IHO’s working group with the objective of supporting activities relating to SDI and MSDI.
- Also links to OGC Marine domain working group (MDWG)
- Publishes IHO C-17, “a guide to establishing the role of the national hydrographic authority in MSDI”
- Contains much advice on formulating policy, governance and implementation of MSDI
- IHO C-17 also contains much information on the other MSDI elements

C-17

Spatial Data Infrastructures

“The Marine Dimension”

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HO

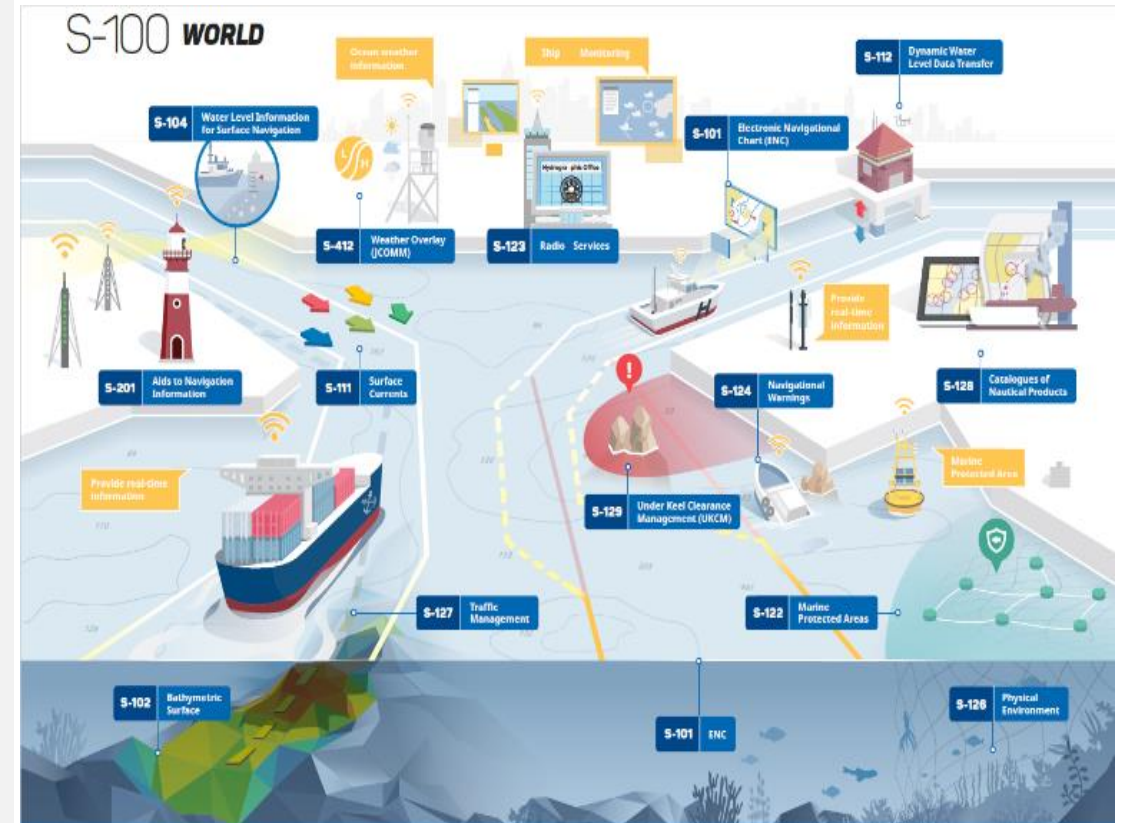


International Hydrographic Organization



S-100 - the IHO Building blocks

- Provides the **data framework** for the development of the next generation Electronic Navigational Charting products, as well as other digital products required by the hydrographic, maritime and GIS communities
- Leads to a global **consistency** of products
- Internationally recognized framework for the structure and delivery of products for the hydrographic and maritime community
- S-100 is a fundamental standard for MSDI



Regional Hydrographic Commission

South West Pacific
Hydrographic Commission

Marine Spatial Data Infrastructures
Working Group (MSDIWG)
Annual report

ARMSDIWG Report

Current status and planned actions of the ARMSDIWG.

Marine Spatial Data Infrastructures Working Group – 14
MSDIWG14-06
30 JAN – 03 FEB 2023



South West Pacific Hydrographic Commission



14th MEETING OF THE IHO MARINE SPATIAL DATA INFRASTRUCTURES WORKING GROUP

MSDIWG14

14th Meeting of the International Hydrographic Organization
Marine Spatial Data Infrastructures Working Group

Eastern Atlantic Hydrographic Commission (EAHC) MSDI WG

LCDR Telmo Dias

Genoa, January 30th to February 3rd, 2022



MSDI regional presentation
Mediterranean and Black Sea Hydrographic Commission
The role of ambassador

Captain Nicola Pizzeghello
Italian Hydrographic Institute
Head of Survey and Production Department



Korea Hydrographic
and Oceanographic Agency

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

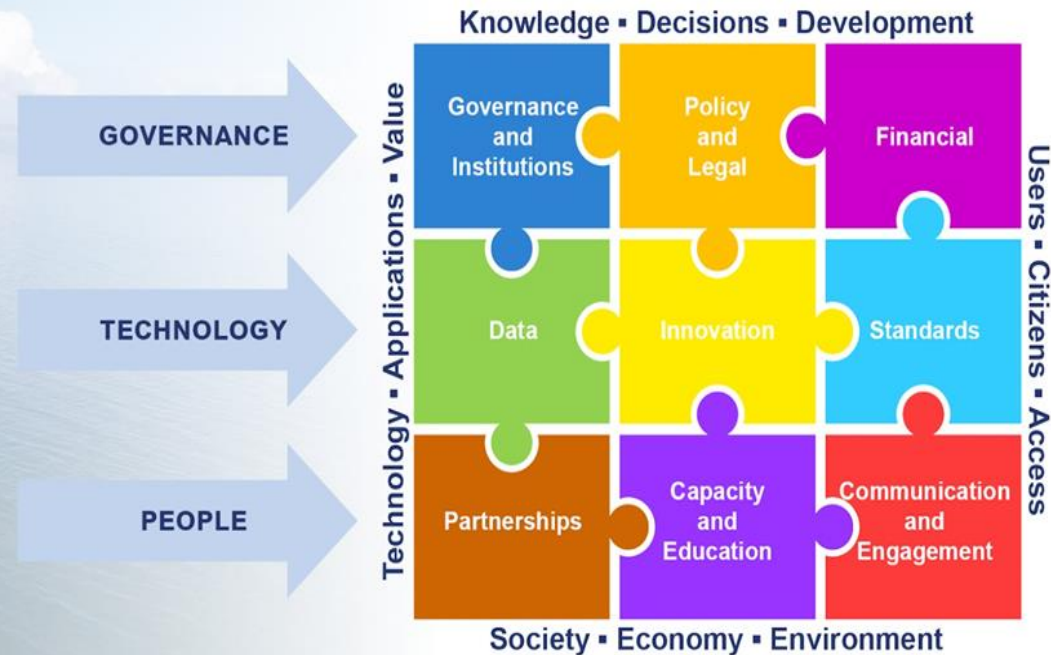
Our desired future



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



The Integrated Geospatial Framework provides a basis and guide for developing, integrating, and strengthening geospatial information management.



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

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

Vision

Integrating water into the global geospatial information infrastructure ecosystem

Goals

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

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

Two part document

Part One – background, challenges and introduction to value propositions

Part Two – broken down by IGIF Strategic pathways for the water domain

Scope – Oceans, Seas, rivers, waterways/watercourses, lakes, inland waters, wetlands, glaciers...

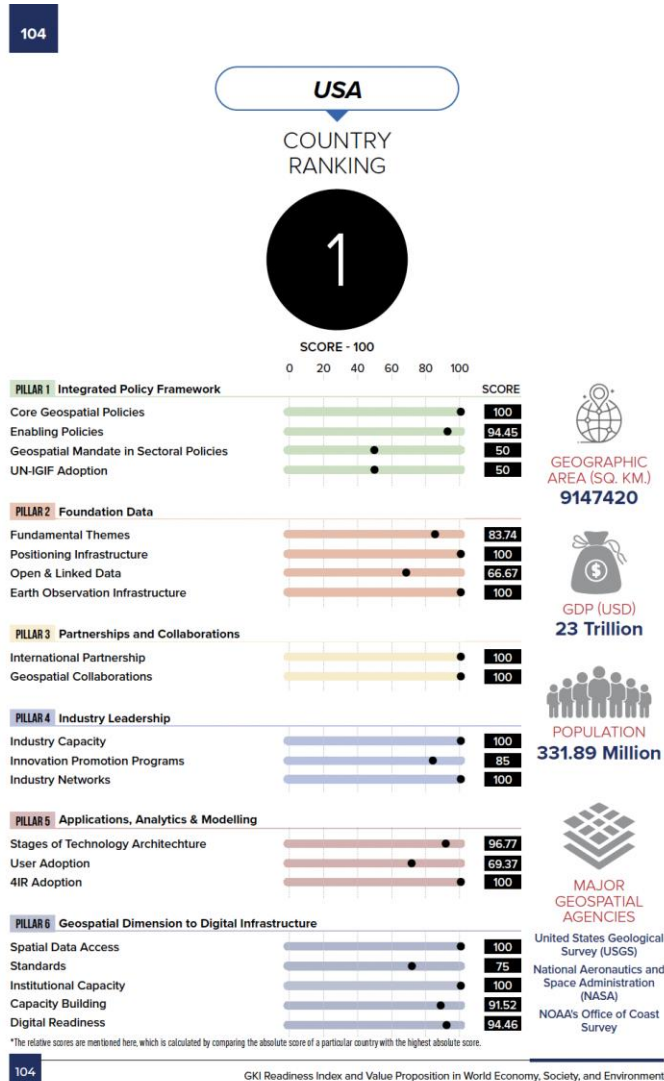
Part 1 – The Strategic Overview

- Overview
- Introduction and Background
- The Main Challenges

Part 2 – The Strategic Pathways

- A Value Proposition for the Marine Domain
- Introduction
- Governance and Institution
- Legal and Policy
- Data
- Standards
- Partnerships
- Capacity and Education
- Communication and Engagement

Geospatial Knowledge Infrastructure Readiness Index



Importance of MSDI to HOs

Traditional Role

- Product orientated data consumption
- Product focused database
- Limited output options
- Missing opportunities

New Role

- Acquire data once and use many times
- Backwards in the data processing chain
- Product-based approach=>data-centric approach
- Combination, interoperability and derivation of geospatial solutions
- Authorative and non-authorative data

Thank You.

The Importance of MSDI

