



FIG WORKING WEEK 2023

28 May - 1 June 2023 Orlando Florida USA

Protecting
Our World,
Conquering
New Frontiers

Plenary Session 3: Tackling Global Challenges

Land Administration and Land Management Role in Tackling Disaster Management & Sea Level Rise with a special focus on sustainability of island states (SIDS)

Presenter:

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Principal Director (Acting)

National Spatial Data Management Branch (Jamaica)

Ministry of Economic Growth & Job Creation



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United Nations

Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States

“Small Island Developing States (SIDS) are a distinct group of 37 UN Member States and 20 Non-UN Members/Associate Members of United Nations regional commissions that face unique social, economic and environmental vulnerabilities”.

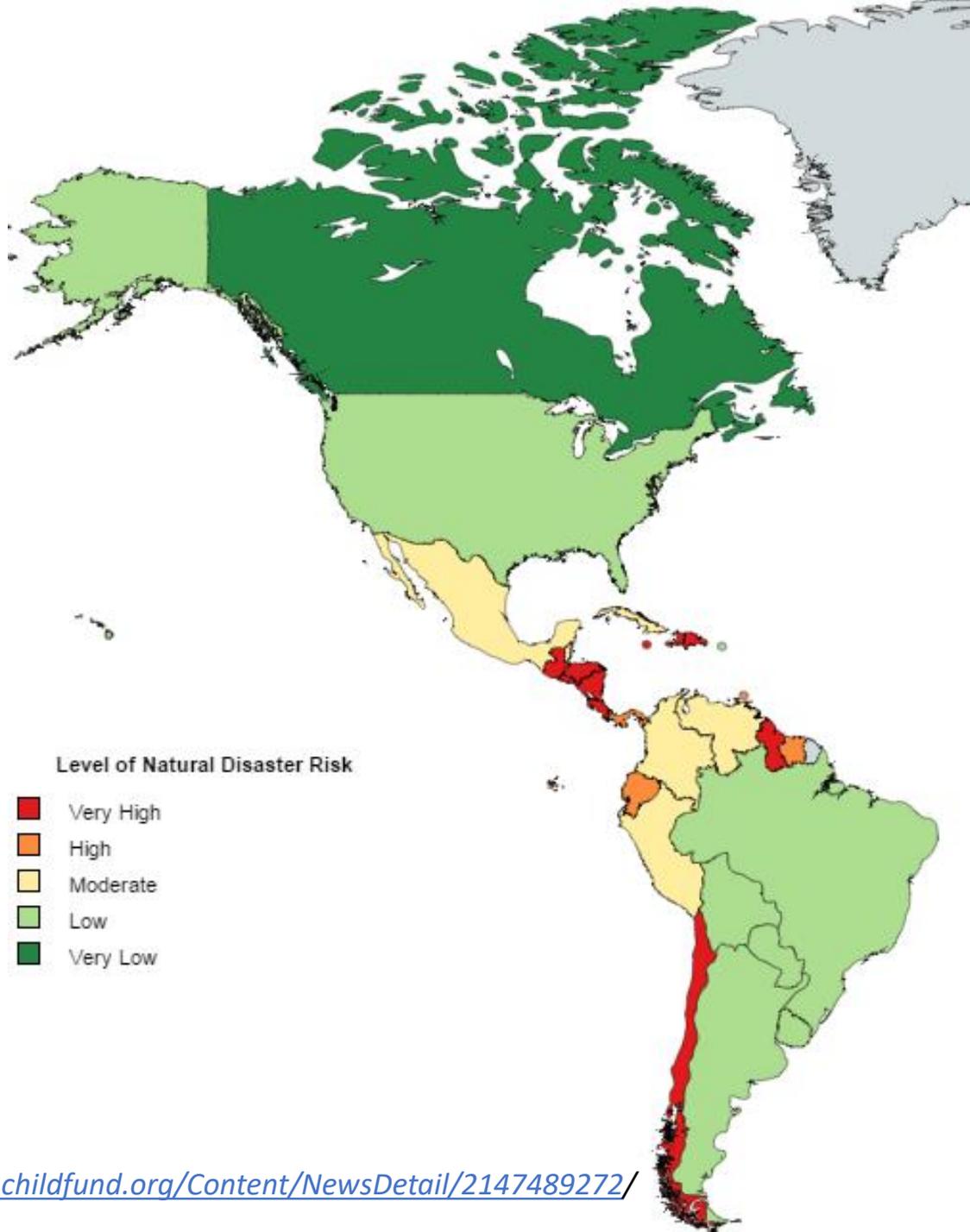
The three geographical regions in which SIDS are located are:
the Caribbean, the Pacific, and the Atlantic, Indian Ocean and South China Sea (AIS).

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Americas: North, Central, South America & the Caribbean *(multiple risk zone)*

Natural Disaster Risks:

- Hurricanes
- Tropical Storms
- Tropical Depressions
- Troughs
- Earthquakes
- Volcanoes
- Floods etc.

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Caribbean Region





Caribbean is a diverse region comprised of over 700 islands, islets, reefs and cays that surround the Caribbean Sea and lie on the Caribbean Tectonic plate

Diverse given historical setting, geographical location, geological setting, etc.

Issues:
socio-economic, climate change, hydrometeorological, geomorphological and health hazards etc.



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Disaster Risk Levels & Impact in the Caribbean SIDS

The Caribbean is the **second most hazard-prone region** in the world (OCHA, 2022).

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Disaster Risk Levels in Caribbean



Natural Disaster Risks:

- Hurricanes
- Tropical Storms
- Tropical Depressions
- Troughs
- Earthquakes
- Volcanoes
- Landslides & Floods
- Forest Fires & Wilfires
- Droughts etc.

Other Disasters:

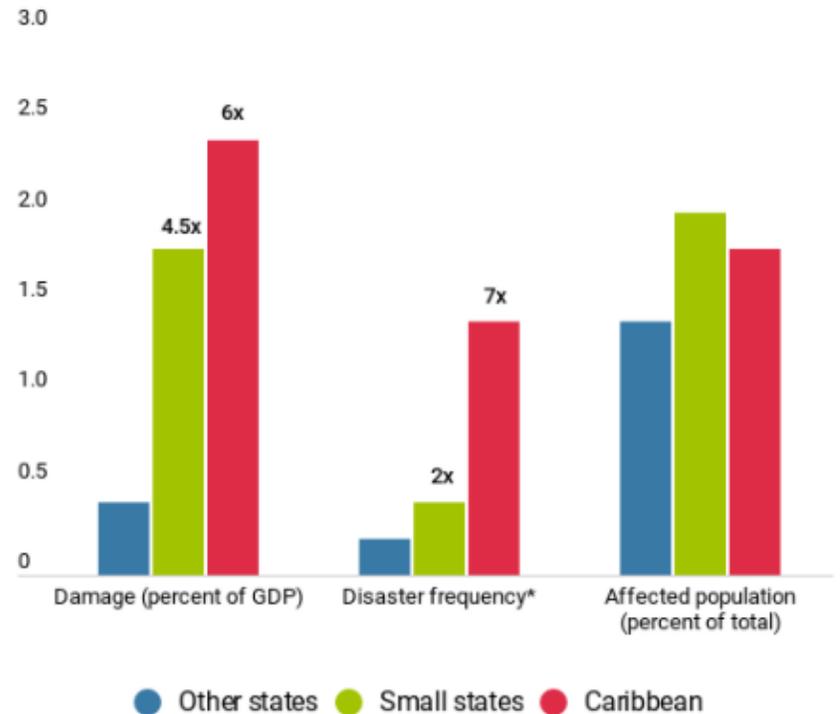
- Epidemic & Pandemics eg. COVID-19
- Chik V, Zik V etc



Highly vulnerable

Caribbean countries experience frequent natural disasters with high human and economic costs.

(frequency and effects of natural disasters, 1990-2014)



Source: IMF staff calculations.



Caribbean is primarily made up of Less Developed Countries (LDCs) and Small Island Developing States (SIDS) that are highly vulnerable to the impacts of disasters.

Disaster Impact in Caribbean

- Regular annual disaster losses are estimated at **US\$3 billion** with significant loss to **social and productive sectors**.
- **Flooding and landslides** have repeatedly occurred in several territories and continue to damage **physical infrastructure**.
- **Droughts** have reduced **agricultural output and water supply**.



**Soufriere Hills
Volcanic eruption,
Montserrat (2003)**



Disaster Impact in Caribbean



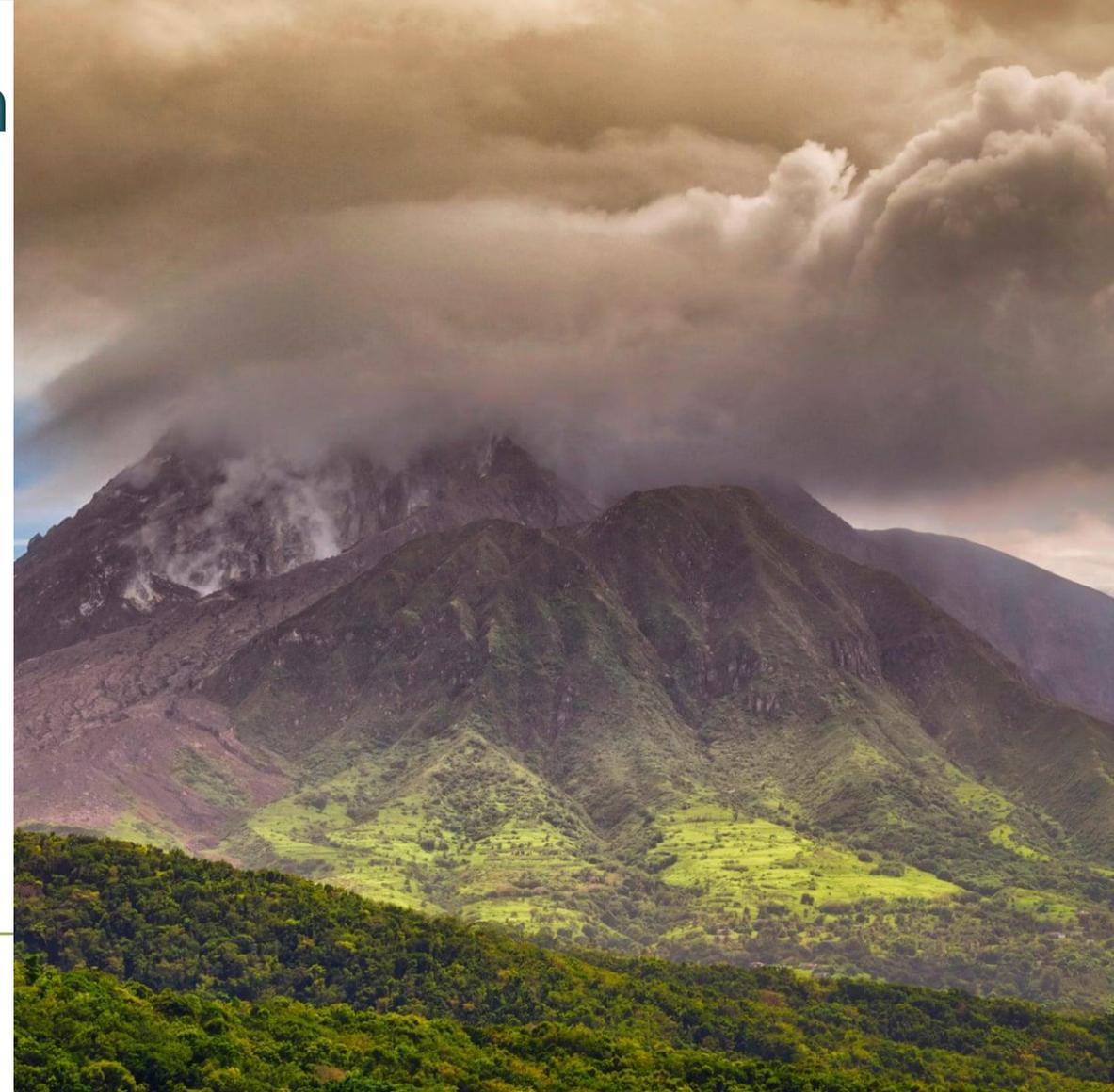
- **Volcanic eruption** destroyed the economy and social life in **Montserrat (2003)**.
- Impacts from hazards will only intensify as a result of **climate change**, as **60% of the region's population** and **70% of economic activity** are within **two miles of coastlines** (CDEMA, 2014).

**La Soufrière volcano,
Saint Vincent & the Grenadines
(2021)**



Disaster Impact in Caribbean

- Amid the ongoing COVID-19 pandemic, on 9 April 2021 the **La Soufrière volcano** started erupting on the main island of **Saint Vincent & the Grenadines**, causing the displacement of about **20,000 people**, devastating the livelihoods of Vincentians and significantly impacting the environment in the Eastern Caribbean (UN, 2021).
- In particular for the Caribbean region, disaster risk management (DRM) is becoming more complex given the **increase frequency and intensity of hazards** , as well as the **collective impact of recurring climate shocks**.



THE SENDAI FRAMEWORK OUTLINES SEVEN GLOBAL TARGETS TO BE ACHIEVED BY 2030:

SUBSTANTIAL REDUCTIONS

A. Reduce global disaster mortality



B. Reduce the number of affected people globally



C. Reduce direct economic loss in relation to GDP



D. Reduce disaster damage to critical infrastructure and disruption of basic services



E. Increase the number of countries with national and local disaster risk reduction strategies



F. Substantially enhance international cooperation to developing countries



G. Increase the availability of and access to multi-hazard early warning systems



SUBSTANTIAL INCREASES

Aligned

Provides Member States with concrete actions to protect development gains from the risk of disaster.

Strategic Framework on Geospatial Information and Services for Disasters

Working Group on Geospatial Information and Services for Disasters (WG-GISD)
The United Nations Committee of Experts on
Global Geospatial Information Management
(UN-GGIM)

August 2017

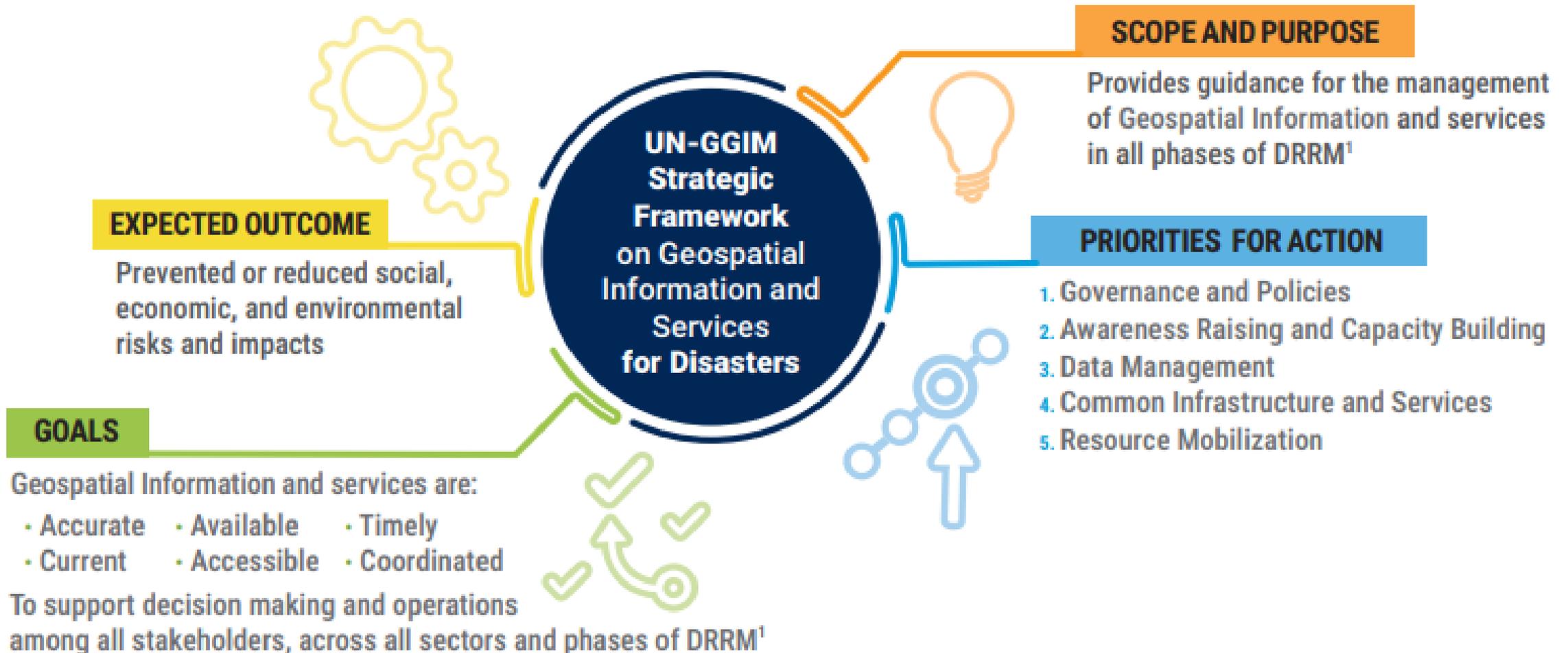


UN-GGIM

United Nations Committee of Experts on
Global Geospatial Information Management

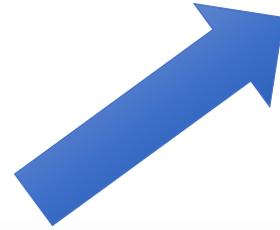
ggim.un.org

OVERVIEW OF THE STRATEGIC FRAMEWORK FOR DISASTERS



¹ Disaster risk reduction and management (DRRM)

Strategic Framework on Geospatial Information and Services for Disasters



Five Priorities for Action



Governance and Policies



Awareness Raising and Capacity Building



Data Management



Common Infrastructure and Services



Resource Mobilization

Strategic Framework on Geospatial Information and Services for Disasters 2016 - 2030

Scope and Purpose

The strategic framework aims to guide all stakeholders and partners in the management of geospatial information and services in all phases of Disaster Risk Reduction and Management (DRRM)

Expected Outcome

The human, economic, and environmental risks and impacts of disasters are prevented and reduced through the use of geospatial information and services

Goal

Quality geospatial information and services are available and accessible in a timely and coordinated way to support decision-making and operations within and among all stakeholders and partners and in all phases of DRRM

Priorities for Action

Member States with the support of regional and international organizations as well as other relevant organizations should focus their action on the following five priorities for action:

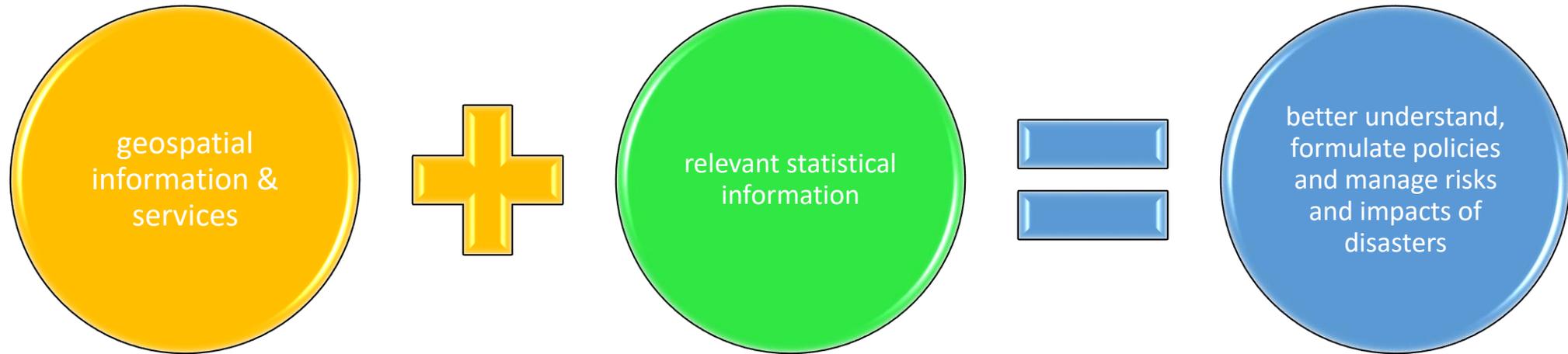
Priority 1 Governance and Policies	Priority 2 Awareness Raising and Capacity Building	Priority 3 Data Management	Priority 4 Common Infrastructure and Services	Priority 5 Resource Mobilization
Policies, collaborative agreements and legal frameworks aiming at improving the availability and accessibility of quality geospatial information and services among all stakeholders and partners established and implemented in all phases of DRRM	Awareness is raised among concerned entities on the importance of geospatial information and services and all necessary technical and human capacities are built and/or strengthened especially in the pre-disaster phase of DRRM	Geospatial databases and information products are developed based on common standards, protocols and processes as important tools in every decision-making process across all phases of DRRM	Common facilities and services are established for all key stakeholders and partners to have a common operational picture of emergency scenarios especially during and in the post-disaster phases of DRRM	All necessary technical, human and financial resources are available to sustain all the activities of DRRM

Guiding Principle

The strategic framework is guided by the 2030 Agenda for Sustainable Development, International Strategy for Disaster Reduction, Sendai Framework for Disaster Risk Reduction 2015-2030, UN General Assembly resolution on international cooperation on humanitarian assistance in the field of natural disasters, from relief to development and other relevant instruments. It is also guided by the principles of open data and requirements of national data infrastructure, and by the UN-GGIM's Statement of Shared Principles for the Management of Geospatial Information.

Strategic Framework on Geospatial Information and Services for Disasters (SF-GISD)

Use of:



Member States

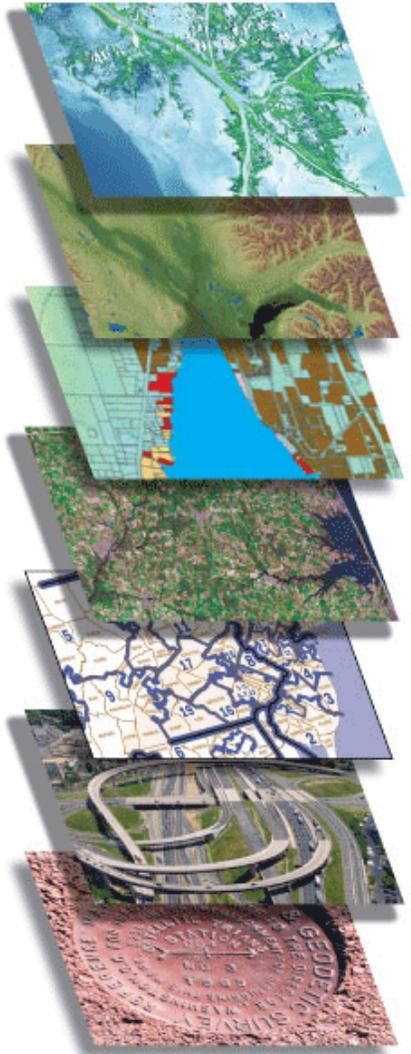




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UN-GGIM
UNITED NATIONS INITIATIVE ON
GLOBAL GEOSPATIAL
INFORMATION MANAGEMENT
WG-Disasters

Co-chairmanship: Jamaica and Japan



Jamaica leadership team based on partnership between core organizations to lead implementation of the SF-GISD:



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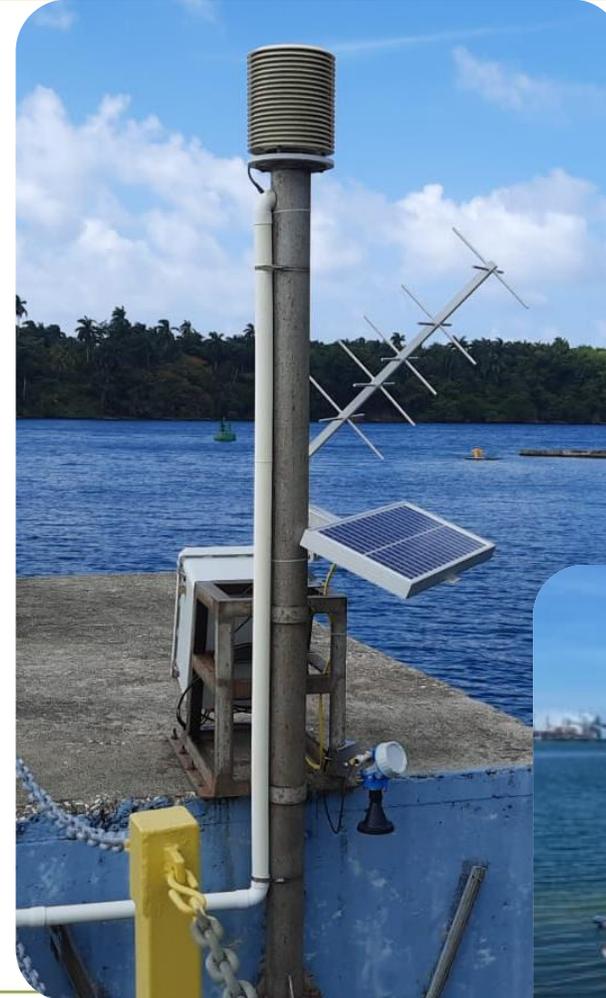


Upgrade of Tidal Gauge System in Jamaica



Jamaica's New Tidal Gauges

- Three (3) new tidal gauges installed by the **Meteorological Services of Jamaica** and surveyed by the **National Land Agency (NLA)** in May 2023.
- All stations will provide accurate mean sea level heights.
- All units are fitted with GOES data transmission and GSM capabilities.
- The Met Service recently made a request to obtain access to share data on IOC sealevelrisemonitoring.org site. The intent is to facilitate data transmission by GOES.
- The Met Service previously shared data from the Port Royal station in Kingston and want to now incorporate data from the new stations.



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Jamaica's New Tidal Gauges

The new stations include:

Errol Flynn Marina Tidal Gauge (Port Antonio)

Rocky Point Salt River Bay (Clarendon)

Montego Bay Free port (St. James)

Waterlog sensors fitted at all three new stations and two submersible sensors at the Errol Flynn and Rocky Point stations.

Errol Flynn Marina Tidal Gauge (Port Antonio, Jamaica)



Errol Flynn Marina Tidal Gauge



The Errol Flynn Marina has an **acoustic** and **Radar sensor**. The tall pole is the acoustic and radar sensor overhang the water.

This station also has **submersible sensors**.



Rocky Point Salt River Bay (Clarendon, Jamaica)

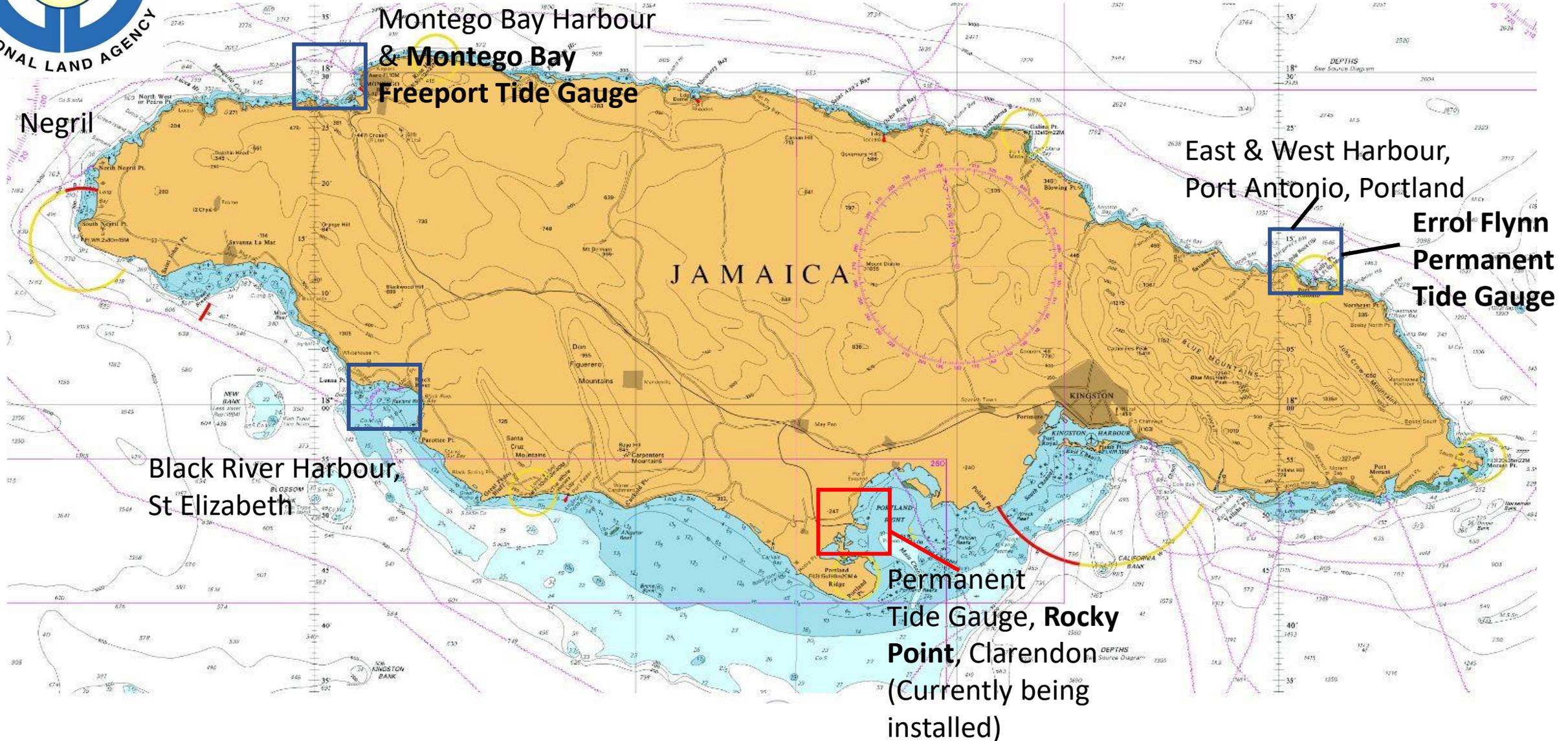


Rocky Point station fitted with **waterlog sensors**, in addition to **submersible sensors**.





Planned & Executed Hydrographic Surveys



Geospatial Information Management (GIM) is needed for effective DRM:

- National vulnerability assessments including for example land use planning, infrastructure development, integrated water resources management
- Supporting DRM planning, DRM policy development revisions/updating
- Early detection and predictive impact analysis
- Optimizing management, allocation and deployment of required resources ·
- Monitoring and reporting on economic, social, environmental and infrastructure impacts, risks and essential supply chain managements during and after post disaster impacts
- Provide inputs for negotiations with bi-lateral and multilateral DRM financing and sustainable development partners
- Support data generation and reporting requirements for example for the 2030 Agenda and its Sustainable Development Goals (SDGs), Small Island Developing States- Accelerated Modalities of Action (SAMOA Pathway) and the SENDAI Framework for Disaster Risk Reduction.

FIG Caribbean SIDS Workshop (May 29-30, 2023)

“Serving Society for the benefit of people and planet; Facing the global challenges in Small Island Developing States: The Role of Land Professionals”

Focus: share knowledge, promote understanding, enhance cooperation, and to discuss the vulnerabilities , as well as the challenges, associated with geospatial information management, land governance, land administration and land management.

FIG Caribbean SIDS Workshop (May 29-30, 2023)

Drafted Orlando Statement on the Caribbean Small Island Developing States (highlights):

- Highlight the uniqueness of Caribbean SIDS but also our similarities
- **Recognized** various **international programmes, conventions and frameworks** that address the various challenges being faced by Caribbean SIDS eg. Integrated Geospatial Information Framework (IGIF), Global Geodetic Reference frame (GGRF), UNDRR) Sendai Framework for Disaster Risk Reduction, UN-GGIM Strategic Framework on Geospatial Information and Services for Disasters.
- **Agree** that the costs, benefits and value of geospatial information and the hydrosatial domain should be advocated to all stakeholders, in particular decision makers and donor or funding agencies
- **Committ** to identify and collaborate with existing regional networks throughout the region.
- **Confirm** the need for partnerships, sharing and collaboration between governments, non-governmental organizations, academia and industry.

Fourth International Conference on Small Island Developing States (2024)

- Scheduled to take place in Antigua and Barbuda in 2024
- Provides an opportunity for all SIDS and the wider global community to agree on new priority areas of action to support the sustainable development priorities of the Small Islands (and low-lying) Coastal States.
- New 10 years: Period of 2024-2034





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*Thank
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