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2021 United Nations Decade
2030 of Ocean Science
for Sustainable Development



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TROPICAL AMERICAS AND THE CARIBBEAN REGION

REGIÓN TROPICAL DE LAS AMÉRICAS Y EL CARIBE

RÉGION DE L'AMÉRIQUE TROPICALE ET DES CARAÏBES

UN DECADE OF OCEAN SCIENCE FOR SUSTAINABLE DEVELOPMENT 2021–2030 TROPICAL AMERICAS AND THE CARIBBEAN REGION TECHNICAL REVIEW COMMITTEE MEETING

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ESSENTIAL INFRASTRUCTURE

DOUG WILSON

- 1 An Ocean Observing and Forecasting System for the Tropical Americas and Caribbean Region*
- 2 Impact-based Multi-Hazard Early Warning Systems and Services for the Tropical Americas and Caribbean Region*

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Draft Proposal Discussion Essential Infrastructure

Action: *Programme*

An Ocean Observing and Forecasting System for the Tropical Americas and Caribbean Region

Could consist of three complementary *Projects (e.g.)*

- *Observing System*
- *Modeling and Forecasting System*
- *Data Management and Product Delivery System*

BACKGROUND

AN OCEAN OBSERVING AND FORECASTING SYSTEM FOR THE TROPICAL AMERICAS AND CARIBBEAN REGION

Regional Workshops indicated a need for the development and operation of a sustained integrated ocean observation and forecasting system ('SYSTEM') for the region that will provide essential information for the sustainable development, well-being, prosperity and safety of the region's oceans.

The SYSTEM should include Sustained long-term high-quality observations of marine and coastal environments; creation and operation of models based on stakeholder needs; and delivery of forecast and decision-support tools that help fulfill the multiple sustainable development goals of The Decade.

The SYSTEM should deliver measurable benefits to the region's social, environmental, and economic welfare; and observations, data, forecasts, and products targeted to support other TAC Outcomes.

The SYSTEM should have Open Access to data, information, and technologies.

The System should promote standardization and best practices for coordinated data collection, management, and use

The SYSTEM should facilitate multidisciplinary partnerships to integrate earth system/social sciences, and cross-sectoral participation to mobilize constituencies for national policy and community decision-making processes.

This should be a Decade Programme with Project components to be co-designed, but including at least Projects focused on regional Ocean Observations; Modeling, Forecasts, and Products; Data Management and Capacity Building.

OBJECTIVES

AN OCEAN OBSERVING AND FORECASTING SYSTEM FOR THE TROPICAL AMERICAS AND CARIBBEAN REGION

- Creation and sustained operation of an integrated ocean observation and forecasting system ('SYSTEM') for the Tropical Americas and Caribbean that will provide essential information for the sustainable development, well-being, prosperity and safety of the region's oceans;
- A SYSTEM that is responsive to the needs of the regional community;
- A SYSTEM that provides critical ocean information needed to generate reliable environmental forecasts, protect ocean health, mitigate and adapt to climate change and support sustainable growth.
- A SYSTEM that shares and promotes Best Practices to insure efficiency, data and information standards, quality, ease of data sharing, standard knowledge and training.
- A Governance and Management structure for the SYSTEM that ensures sustainability, enables and supports broad regional engagement and participation, promotes data and information sharing, and advocates for regional collaboration with the global ocean community.
- A SYSTEM in alignment with the GOOS 2030 Strategy, using a Value Chain approach, connecting OBSERVATIONS through DATA MANAGEMENT for use in ANALYSES and MODELS to create APPLICATIONS.

PARTNERS

AN OCEAN OBSERVING AND FORECASTING SYSTEM FOR THE TROPICAL AMERICAS AND CARIBBEAN REGION

GOOS (Global Ocean Observing System)

WMO

Ocean Best Practices for the Decade

OceanPredict / CoastPredict

Copernicus / Mercator / EMODNET

Horizon Europe Ocean and Climate Missions

Ocean Decade Technology and Innovation Informal Working Group

JCOMM Ocean Ops

GEO Blue Planet

Regional National Ocean Decade Programs (US, Mexico, ...)

Draft Proposal Discussion Essential Infrastructure
Action: *Programme*

***Impact-based Multi-Hazard Early Warning Systems and Services
for the Tropical Americas and Caribbean Region***

BACKGROUND

IMPACT-BASED MULTI-HAZARD EARLY WARNING SYSTEMS AND SERVICES FOR THE TROPICAL AMERICAS AND CARIBBEAN REGION

Regional Workshops indicated a need for the development of Impact-Based Multi-Hazard Early Warning Systems and Services (MHEWS) for the TAC region.

The system would address all MHEWS components: Monitoring and Warning Services (highest priority), Risk Knowledge and Understanding (complexities and cascading impacts), Dissemination and Communication of information and warnings (pre-during-after, consistent, common understood, language/technology from regional thru national and local levels), and Response Capabilities.

The System would maximize and strengthen linkages to existing regional and international efforts. It would have a tightly connected structure of Regional to National to Local Governance and Forecasting and Warning Impact Networks.

The TAC MHEWS would consider a wide range of ocean-related hazards, including Sea level rise, Sargassum, Tsunami, COVID-19, Wastewater, Tropical Cyclones and their impacts, and Oil Spills. While each of these hazards may have unique warnings and responses, many of the impacts are crosscutting, and the underlying infrastructure elements – observations, data management, and models and forecasts – should share common features of the integrated regional observing system.

OBJECTIVES

IMPACT-BASED MULTI-HAZARD EARLY WARNING SYSTEMS AND SERVICES FOR THE TROPICAL AMERICAS AND CARIBBEAN REGION

A safe Tropical Americas and Caribbean ocean region where life and livelihoods are protected from ocean-related hazards through the development and sustained implementation of an evidence-based and impact-based Multi-Hazard Early Warning System (MHEWS).

In consideration of its critical and immediate importance to the security of life and society, the SYSTEM must address the threats, their direct and cascading impacts and WTAC cultural, political, economic, social diversity, social capital needs and human and environmental sustainability requirements, and engage and address the most vulnerable.

Given the complexities, the existing initiatives for early warning for individual hazards, a broad group of stakeholders and regional scope of the activities, the MHEWS would be a "Programme" level UN Ocean Decade Action. It would bring together various existing regional disaster reduction activities into an efficient integrated Multi-Hazard Early Warning System for the TAC.

The MHEW will Integrate infrastructure within a value chain approach, as in the Global Ocean Observing System (GOOS) 2030 Strategy, connecting OBSERVATIONS through DATA MANAGEMENT for use in ANALYSES and MODELS to create APPLICATIONS. For the Impact Based MHEWS, the APPLICATIONS can be the critical forecasts and risk analysis products.

PARTNERS

IMPACT-BASED MULTI-HAZARD EARLY WARNING SYSTEMS AND SERVICES FOR THE TROPICAL AMERICAS AND CARIBBEAN REGION

UN Office of Disaster and Risk Reduction (UNDRR)

Sendai Framework

Tsunami and Other Coastal Hazard Early Warning System (UNESCO/IOC ICG CARIBE EWS)

WMO Region IV

Global Ocean Observing System (IOC-WMO-UNEP-ICSU)

Sargassum Hub

Regional Emergency Management Organizations (CDEMA, CEPREDENAC, EMIZA)

Decade Actions (Programmes: Ocean Teachers Global Academy and Ocean Decade

Tsunami Programme, Projects and Contributions)

Pan American Health Organization

Caribbean Regional Early Warning System

CREWS (Climate Risk Early Warning System)

Caribbean Institute for Meteorology and Hydrology

National HYDROMET Services (NHMS)

Red Cross, Central America Tsunami Advisory Center (CATAC at INETER, Nicaragua)

US NOAA National Hurricane Center

CCCCC (Caribbean Community Center for Climate Change)

Caribbean Meteorological Organization

University of the West Indies (Seismic Research Center, Trinidad and Tobago; Jamaica)

University of Puerto Rico

National University Costa Rica (SINAMOT-UNA)

French West Indies University (Guadeloupe)

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