

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

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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



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# KNOWLEDGE AND SOLUTIONS

FADILAH ALI

1. DEVELOPING A TROPICAL AMERICAS AND CARIBBEAN REGIONAL POLLUTANTS OBSERVATORY
2. INCREASING KNOWLEDGE IN ORDER TO RESPOND TO MULTIPLE STRESSORS IN A CHANGING ENVIRONMENT
3. INCREASING KNOWLEDGE ON IMPACTS OF BLUE ECONOMY ACTIVITIES AND CLIMATE CHANGE ON FISHERIES AND ECOSYSTEM HEALTH

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# 1. DEVELOPING A REGIONAL POLLUTANTS OBSERVATORY

## Decade Outcomes Addressed:

- Outcome 1: A clean ocean where sources of pollution are identified and reduced or removed
- Outcome 2: A healthy and resilient ocean where marine ecosystems are understood, protected, restored and managed

## Decade Challenges Addressed:

- Challenge 1: Understand and map land and sea based sources of pollutants and contaminants and their potential impacts on human health and ocean ecosystems, and develop solutions to remove or mitigate them
- Challenge 9: Ensure comprehensive capacity development and equitable access to data, information, knowledge and technology across all aspects of ocean science and for all stakeholders.

# 1. DEVELOPING A REGIONAL POLLUTANTS OBSERVATORY

## Objectives:

- Foster interdisciplinary work, facilitate collaboration with social sciences & capture and incorporate local and indigenous knowledge
- Develop a digital atlas of the ocean which can be used to assess risks of current and future types of ocean pollution whilst generating ideas to reduce ocean pressures, and strengthening governance regimes that encourage more sustainable production and consumption
- Encourage the transfer of knowledge and capacity building through the development of manuals and training with harmonized methods and strengthening of databases for decision-making.
- Facilitate cooperation and partnerships by fostering discussion and dialogue between multi-sector stakeholders to create networks to develop suitable and tailor-made solutions
- Strengthen collaboration and networking to develop research partnerships that could improve the relationships between local communities and the oceans.
- To achieve a clean ocean, there is a need for better governance and for national policies and regulatory frameworks to be updated with more forceful policies, penalties and mechanisms to facilitate better compliance and infrastructure to mitigate the pollution.

# 1. DEVELOPING A REGIONAL POLLUTANTS OBSERVATORY

## Activities:

- Identify primary sources, pathways and fates/spreading of pollution and creation of a global pollutants database and improve understanding of emerging pollutants
- Identify acceptable levels of pollution to set thresholds values and define ecological boundaries/maximal levels and improve understanding of the tolerances of species and ecosystems to pollutants
- Improve understanding of the impacts of pollution and combined effects of climate change and other stressors on ecosystems/organisms and human health.
- Develop risk assessment methods to understand impacts on biota and human health under climate change and taking into account multiple stressors.
- Develop a database of relevant ongoing ocean and pollution related research in the region to foster local research and partnerships to exchange experiences and data.
- Investigate the use of quality remote sensors to provide information in real time and ensure that the data generated is used as monitoring indicators and is also widely available
- Develop participatory policies and ocean knowledge programs targeted at all users, with mass dissemination efforts by various mechanisms



# 1. DEVELOPING A REGIONAL POLLUTANTS OBSERVATORY

## Existing and Potential Partners:

UNEP: CEP & ROLAC

NOAA

US EPA

OECS e.g. RePLAST

CARICOM

CARPHA

Global Partnership on Marine Litter

INVEMAR

CLME+ / PROCARIBE+

Institute of Marine Affairs

RAC/REMPEITC

CEFAS

Ocean Conservancy/ GGGI

IWEco

LBS Focal Points

Local & Regional Universities / Research Institutes

Local and Regional NGOs

Other partners to be identified

## 2. RESPONDING TO MULTIPLE STRESSORS IN A CHANGING ENVIRONMENT

### Decade Outcomes Addressed:

- Outcome 2: A healthy and resilient ocean where marine ecosystems are understood, protected, restored and managed.
- Outcome 6: An accessible ocean with open and equitable access to data, information and technology and innovation

### Decade Challenges Addressed:

- Challenge 2: Understand the effects of multiple stressors on ocean ecosystems, and develop solutions to monitor, protect, manage and restore ecosystems and their biodiversity under changing environmental, social and climate conditions.
- Challenge 4: Generate knowledge, support innovation, and develop solutions for equitable and sustainable development of the ocean economy under changing environmental, social and climate conditions.
- Challenge 9: Ensure comprehensive capacity development and equitable access to data, information, knowledge and technology across all aspects of ocean science and for all stakeholders.

## 2. RESPONDING TO MULTIPLE STRESSORS IN A CHANGING ENVIRONMENT

### Objectives:

- Promote and discuss the drafting of sustainable ocean plans to respond to multiple stressors in the region, as it provides a credible basis for safeguarding the long-term health and resilience of the ocean, attracting investment, and creating jobs for the benefit of coastal communities and national economies.
- Promote ocean literacy and science-policy dialogue to respond to multiple stressors including expanding use of citizen and user-oriented data collection, and use of local and traditional knowledge and practices.
- Facilitate cooperation and partnerships by fostering discussion and dialogue between multi-sector stakeholders to create networks to develop suitable and tailor-made solutions to the region's challenges.
- Strengthen collaboration and networking to develop research partnerships that could improve the relationships between local communities and the oceans.



## 2. RESPONDING TO MULTIPLE STRESSORS IN A CHANGING ENVIRONMENT

### Activities:

- Understand the impacts of human and other multi-stressor activities on ecosystems including new, synergistic, and cumulative impacts
- Improve understanding of monitoring ecological status response of ecosystems to multiple stressors through the collection of appropriate data, analysis via suitable models and investigate other potential approaches
- Improve understanding of global marine processes and the role of ecosystems and species, including in poorly studied areas, such as the deep ocean
- Improve marine biodiversity inventories through DNA barcode registrations and definition of indicators of dynamic ecosystems services
- Develop tools to evaluate ecosystem resilience to regime shifts and to better understand functional ecological connectivity to underpin marine protected area design and identification of critical ecosystems
- Establish cooperative mechanisms and exchange of capacities through offers to share training, equipment, co-design, and joint projects
- Coordinate seminars or other events to regionally assess stressors and foster the standardization of protocols

## 2. RESPONDING TO MULTIPLE STRESSORS IN A CHANGING ENVIRONMENT

### Existing and Potential Partners:

UNEP: CEP & ROLAC

NOAA

US EPA

CARPHA

INVEMAR

CLME+ / PROCARIBE+

Regional Activity Centres

Local & Regional Universities / Research Institutes

Local and Regional NGOs

Other partners to be identified

### 3. SUSTAINABLE & PRODUCTIVE OCEAN

#### Decade Outcomes Addressed:

- Outcome 3: A productive ocean supporting sustainable food supply and a sustainable ocean economy.
- Outcome 6: An accessible ocean with open and equitable access to data, information and technology and innovation.
- Outcome 7: An inspiring and engaging ocean where society understands and values the ocean in relation to human wellbeing and sustainable development

#### Decade Challenges Addressed:

- Challenge 3: Generate knowledge, support innovation, and develop solutions to optimise the role of the ocean in sustainably feeding the world's population under changing conditions
- Challenge 9: Ensure comprehensive capacity development and equitable access to data, information, knowledge and technology across all aspects of ocean science and for all stakeholders.
- Challenge 10: Ensure that the multiple values and services of the ocean for human wellbeing, culture, and sustainable development are widely understood, and identify and overcome barriers to behaviour change required for a step change in humanity's relationship with the ocean.

### 3. SUSTAINABLE & PRODUCTIVE OCEAN

#### Objectives:

- Foster interdisciplinary work, facilitate collaboration with social sciences & capture and incorporate local and indigenous knowledge
- Develop a digital atlas of the ocean which can be used to assess risks of current and future types of ocean pollution whilst generating ideas to reduce ocean pressures, and strengthening governance regimes that encourage more sustainable production and consumption
- Encourage the transfer of knowledge and capacity building through the development of manuals and training with harmonized methods and strengthening of databases for decision-making.
- Facilitate cooperation and partnerships by fostering discussion and dialogue between multi-sector stakeholders to create networks to develop suitable and tailor-made solutions
- Strengthen collaboration and networking to develop research partnerships that could improve the relationships between local communities and the oceans.
- To achieve a sustainable and productive ocean, there is a need for better governance and for national policies and regulatory frameworks to be updated with more forceful policies, penalties and mechanisms to facilitate better compliance and infrastructure

### 3. SUSTAINABLE & PRODUCTIVE OCEAN

#### Activities:

- Improve the understanding of marine ecosystem functioning and how anthropogenic pressures and blue economy activities affect marine ecosystems
- Improve the understanding of ecotoxicology and fish diseases, chemical and biological impacts of aquaculture and the effects of IUU fisheries on the health and state of fisheries and identify measures for climate change adaptation
- Improve the understanding of the role of coastal / small scale fisheries in underpinning wellbeing and how traditional and local knowledge can be incorporated into decision making
- Increase knowledge on ecosystem function and sustainability at the ecosystem level and strengthen research on trophic gaps to better understand the interrelationships between species and habitats
- Identify ecosystem thresholds and develop indicators of sustainability
- Develop transboundary, multidisciplinary, and cross-sectoral research approaches which connects science, technology, service providers, private sector, policy makers and society with a focus on the sustainability of fisheries and marine ecosystem services
- Update and standardize regulations



### 3. SUSTAINABLE & PRODUCTIVE OCEAN

#### Existing and Potential Partners:

FAO	
CRFM	Caribbean Natural Resources Institute (CANARI)
OSPESCA	Caribbean Network of Fisherfolk Organizations (and local fishing coops)
NOAA	Too Big To Ignore
PROCARIBE	Environmental Defense Fund
OECS	International NGOS: The Nature Conservancy, Blue Ventures
CARICOM	Local and Regional Universities
INVEMAR (Colombia)	Local and Regional Research Institutes
Gulf and Caribbean Fisheries Institute	Local and Regional NGOs
COBI (Mexico)	

MUCHAS GRACIAS

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THANK YOU

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MERCI BEAUCOUP

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