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(Of UNESCO)

Seventeenth Intergovernmental Session of the UNESCO-IOC Sub- commission for the Caribbean and Adjacent Regions (IOCARIBE) –
(May 9 – 11, 2023)

Item 3.2 of the Revised Provisional Agenda

IOCARIBE SECRETARY´S REPORT ON THE WORK ACCOMPLISHED SINCE THE SIXTEENTH SESSION AND BUDGET IMPLEMENTATION

SUMMARY

This report presents a summary of the programme progress and the implementation of decisions and recommendations during the period 2022-2023, particularly those made at the Sixteenth Session of the Sub-Commission held virtually, May 3-6, 2021.

The Sub-commission is invited to take note of this report, and further provide strategic guidance on programme development and implementation and emerging projects and mechanisms.

INTRODUCTION

During the reporting period 2022-2023, IOCARIBE Member States (MS) began to show some economic recovery from the COVID-19 pandemic, with the principal industry of the region - tourism - showing significant gains in 2022, and the trend continues into early 2023. The region's focus is on economic recovery, while seeking to ensure that debt payments are covered, and jobs generated. However, this focus has not eliminated the priorities of the region with respect to sustainable development.

The IOCARIBE Secretariat also underwent major shifts during the biennium, with its Head of 20 years, Dr Cesar Toro, proceeding on retirement during February 2022. Interim Head of the Sub-Commission, Mr Jean-Paul Ngome Juste, Interim IOCARIBE Head, supported the work of the Sub-Commission during 2022, along with his regular duties as Science Officer within the UNESCO Jamaica Cluster Office. The new Head of the Sub-Commission, Dr Lorna Inniss, was hired during January 2023. These transitions resulted in some delays in implementation, as well as an attenuation of momentum and energy around the work of the UN Decade of Ocean Science and its regional projects. In some areas where IOCARIBE partners continued working and strengthening their support to the Sub-Commission, there were no implementation delays.

This Secretary's report presents a summary of the programmes of the Sub-Commission, completed by Dr Toro before his departure at the start of the biennium under review.

The UN Decade of Ocean Science for Sustainable Development (2021-2030)

IOCARIBE established on October 2020 a Regional Planning Group (WTA RPG) for the WTA-Ocean Decade to advance and coordinate strategic partnerships and actions for Western Tropical Atlantic engagement in the UN Decade of Ocean Science for Sustainable Development (2021-2030). The WTA RPG established eight Working Groups to promote multi-disciplinary and inclusive co-design and implementation partnerships to achieve each societal outcome and Capacity Development, recognizing the importance of the work of the Working Groups as the core of its strategy for advancing the Decade in the Western Tropical Atlantic Region.

The IOC capacity development strategy has long been a major element of IOCARIBE's programmes and activities. IOCARIBE has a series of delivery mechanisms used for achieving its capacity development, among them IOCARIBE Strategic Sciences Plan (2017–2026), and several programmes, projects, group and networks of experts. Also, IOCARIBE works with many partner organizations such as WMO, UNEP, UN-DOALOS, IAEA, FAO, the European Commission, regional organizations and NGOs. Universities and research institutions have been important partners. Strong focus during this reporting period continues to be on Disaster Risk Reduction, Ecosystem Based Management, and Marine Spatial Planning.

The Draft *IOCARIBE Medium Term Strategic Science Plan (2023-2029)* (SSP) objectives are to:

i) Increase scientific knowledge and a better understanding of coastal and oceanic regional processes to help Member States in the formulation and application of ocean and coastal zone sustainable policy for contributing to global strategies and regional IOC programmes; and

ii) support the permanent enhancement of capacity development and empowering in ocean sciences and ocean observations of developing Member States, for enabling management of resources and coastal ecosystems to their own exclusive economic zones and in the region.

When mobilizing actions and implementing activities within the UN Decade framework, IOCARIBE enhanced the network of the ocean community with the disaster management, social practitioners and experts, economists, urban planners, local and traditional communities, reaching more than thousand people.

Over this intersessional period several member states provided support to the Sub-commission. Particularly, the support provided by Colombia that is hosting the Secretariat and is seconding two professionals who are working at the Secretariat and contributions from the European Union, and the Governments of Barbados, Mexico, Norway, Sweden and USA. Co-operation and partnerships with other UN Agencies and Programmes such as WMO, UNEP, UN-ISDR, UNDP, UNOPS, IAEA. IHO MACHC, GeoBlue Planet, International, regional organizations (GOs and NGOs), and the work with national agencies facilitated programme and project implementation.

The next sections summarise the main highlights of IOCARIBE Programmes, Projects and Activities.

OCEAN ACIDIFICATION

IOC and its networks, including the Global Ocean Acidification Observing Network (GOA-ON), directly contribute to the achievement of SDG Target 14.3. GOA-ON counts more than 800 members from 101 countries. IOC continued to provide the function of the technical secretariat of the GOA-ON, together with the International Atomic Energy Agency (IAEA) and NOAA. IOC also supports the GOA-ON Pier-to-Peer mentoring program which pairs mentors and mentees in the ocean acidification community through the Global Ocean Acidification Observing Network (GOA-ON). As of April 2021, scientists from 14 IOCARIBE MS participate in the GOA-ON mentoring programme as mentors (7 MS) and mentees (11MS).

Three IOC expert activities organized in Santa Marta, Colombia, supported the development of ocean acidification observation and research capacity in the Caribbean and Latin America: the OAiRUG meeting, in partnership with INVEMAR and IAEA's Ocean Acidification International Coordination Centre (OA ICC) on 19–21 March 2018, which resulted in the publication of the Regional Ocean Acidification Action Plan for Latin America and the Caribbean. A training titled "Latin American and Caribbean Regional Symposium on Ocean Acidification" focusing on the newly established methodology for SDG indicator 14.3.1 and related data and metadata requirements was held in Santa Marta, Colombia, on 21–24 January 2019 at INVEMAR.

The Symposium was organized by IOC, the Ocean Foundation with the support of the US Department of State, the Swedish International Development Agency, and in coordination with GOA-ON and the Latin America Ocean Acidification Network (LAOCA). The Symposium highlighted strategies for building low-cost ocean acidification monitoring systems, techniques for building resilient seafood supply chains (including through technological interventions), and policy frameworks for building economic and social resilience at regional and national scales. It also focused both on existing practices and

future options for researching the impacts of ocean acidification on, and the development of adaptation plans for, coral reef ecosystems.

Furthermore, IOC co-organized the 'Curso Sistemas de Carbonatos: Documentación de conjuntos de datos, su análisis y visualización geográfica, en el marco del Objetivo de Desarrollo Sostenible 14.3 para minimizar los impactos de acidificación de los océanos', at the Centro de Entrenamiento Regional en Ciencias del Mar, Ocean Teacher Global Academy - IODE-COI-UNESCO, 21-25 October 2019, Santa Marta, Colombia.

The overall objective of this course was to increase MS capacities to report towards the SDG indicator 14.3.1 focusing on ocean acidification. The course provided the necessary tools and guidance to identify the required metadata and data to meet the different quality levels identified in the SDG indicator 14.3.1. Participants were taught how to apply best practices to standardize and organize data according to the SDG 14.3.1 methodology. The course included lectures, computer and laboratory practicals.

Finally, participants learned how to visualize the results of the analyzes so that they are understandable to non-specialized audiences. In an effort to further increase capacity development efforts, the IOC Secretariat is developing an online course on ocean acidification for the Ocean Teacher Global Academy (OTGA) platform, which will include a module on the SDG 14.3.1 Indicator Methodology and how to apply it.

HARMFUL ALGA BLOOMS – IOCARIBE HAB ANCA

HAB-ANCA is leading an initiative in the IOCARIBE Region to implement the IOC Ciguatera Strategy and is developing a project focused on Ciguatera-causing organisms, toxins, contaminated seafood and epidemiology in the IOCARIBE Region. One of the major components of this initiative is the development of national standard models for harmful alga blooms risk management in coastal and marine waters for the IOCARIBE Region.

The work with health authorities enhanced the implementation of practical solutions and much needed reduction of the vulnerability existing in the IOCARIBE region in case of threat of toxic and harmful events.

COASTAL INUNDATION FORECASTING INITIATIVE (CIFI)

IOCARIBE MS recommended to develop and implement a Coastal Inundation Forecasting Initiative (CIFI) in the IOCARIBE Region. The key to successfully developing a comprehensive of Early Warning and Response for Tsunamis and Other Coastal Hazards in the Caribbean and warning system is the cooperation of different scientific disciplines and user communities. An integrated approach to tsunami river flow, storm surge, wave action and flood forecasting is the strategy for building improved operational forecasts and warnings capability for coastal inundation.

The initiative in the framework of the UN Decade for Ocean Science seeks for the expansion of the Coastal Inundation Forecasting Initiative (CIFI), in the wider Caribbean Region through a cooperative effort with WMO and other partners.

MARINE SPATIAL PLANNING AND INTEGRATED COASTAL MANAGEMENT

The main challenge for an effective implementation of ICAM and MSP activities is the lack of coordination amongst initiatives under implementation in the region. The diversity of

projects and the amount of public funds invested make national authorities to put less interest in those initiatives with less funding. There is a need to capitalise on the wealth of IOC/MPR experience on MSP and ICAM and to strengthen the coordination and links with them for advancing in answering the MSP and ICAM questions that are critical because of their large environmental and socio-economic impact, particularly for SIDS. This is critically important now for the Post-Covid 19 recovery.

IOC-UNESCO and European Commission boost development of Marine Spatial Planning and Sustainable Blue Economy worldwide.

The Joint Roadmap to accelerate Maritime/Marine Spatial Planning processes worldwide (MSP Roadmap), which has two main objectives at regional level:

- Strengthen institutional capacities in relation to Marine Spatial Planning (MSP) and the Sustainable Blue Economy;
- Strengthen institutional coordination for the adoption of a roadmap.

With the support of Sweden, as well as national and regional authorities and partners, a series of online and face-to-face events took place throughout the months of October and November 2020 to build collective capacities to respond to emerging ocean issues, facilitate exchanges among public and private stakeholders, and formulate recommendations for the development of MSP and the Sustainable Blue Economy in each country/ region. The activities involved officials, technicians and experts, representatives of maritime sectors, local stakeholders and civil society:

Technical workshops on environmental pressures, cumulative impacts and tools to support decision-making in Africa: exchange good practices and lessons learned to tackle environmental challenges associated with the implementation of MSP in the region.

During 2020, under the coordination of IOC / MPR a series of workshops and training courses were held in the IOCARIBE Region. Among them:

- MSPglobal online seminar on “How to integrate coastal management (ICAM) and Marine Spatial Planning (MSP)?” (Spanish) 29 April 2020
- Marine Spatial Planning and Sustainable Blue Economy in the North-East Tropical Pacific and Wider Caribbean Regions 28 October 2020
- Estado actual y perspectivas de la Planificación Espacial Marina y la Economía Azul Sostenible en Guatemala 15 octubre 2020
- Fortaleciendo capacidades en Planificación Espacial Marina y Economía Azul Sostenible Panama 29 octubre 2020
- Formación para el desarrollo de capacidades institucionales sobre planificación espacial marina y economía azul en El Salvador 20 octubre 2020.
- Costa Rica en el umbral de la Planificación Espacial Marina y Economía Azul Sostenible 4 noviembre 2020

SARGASSUM AND OIL SPILLS MONITORING FOR THE CARIBBEAN AND ADJACENT REGIONS

IOCARIBE, GEO Blue Planet and other partners have been working to support the development monitoring capabilities for “other coastal hazards” to augment the Caribbean

Early Warning System for Tsunamis and other Coastal Hazards. Hazards that have been focused on include Sargassum and oil spills which were identified by regional stakeholders as priorities and can both be detected with freely available satellite data.

The overall objectives of the project are to:

- Work with stakeholders at regional and local scales to identify data and information gaps;
- Provide networking and coordination support to connect the marine hazard community;
- Identify best practices related monitoring and management to inform policy recommendations and to measure the impact of mitigation strategies.

The project is focused on meeting these objectives for the topics of Sargassum and oil spills. To meet these objectives, IOCARIBE has developed partnerships with various groups who are supporting the development and implementation of the project.

SARGASSUM

During 2019, IOCARIBE and GEO Blue Planet were approached by AtlantOS about expanding the Sargassum activity to include the West Africa due to the trans-Atlantic nature of the Sargassum issue. As a result, the Sargassum project was expanded to include the entire Tropical Atlantic and additional partners were brought on board including AtlantOS, the Atlantic International Research (AIR) Centre and the Specially Protected Areas and Wildlife (SPAW) Sub-Programme of the United Nations Environment Programme (UNEP) Cartagena Convention Secretariat, and IOCAFRICA.

A summary of major partner activities between 2019 and 2021 is outlined below.

- Sargassum Information Hub: To meet the need for centralized access to information and tools for the monitoring and management of Sargassum, the Sargassum Information Hub was created. The hub development was supported primarily with resources provided by the AIR Centre and the GEO Blue Planet Initiative.
- Sargassum Webinar Series: UNEP together with partners IOC-UNESCO and the two Regional Seas under the Cartagena and Abidjan Conventions started a webinar series to highlight key scientific, societal and ecological challenges, responses to prevent impacts and trans-disciplinary and trans-institution collaboration around Sargassum in the context of the Caribbean and West African seas.
- NOAA Sargassum Data: NOAA's CoastWatch program is working to transition Alternative Floating Algae Index (AFAI) fields currently generated by USF along with Maximum Chlorophyll Index (MCI) products in order to produce and distribute satellite-based Sargassum products on a regular basis. NOAA CoastWatch is also developing an in situ database for use in validation of Sargassum satellite monitoring products using a citizen science data collection tool (the Pelagic Sargassum Report). IOCARIBE is working along with IOCAFRICA to inform NOAA about user needs and increase submissions to the database.
- NOAA Experimental Inundation Reports: USF, AOML and the NOAA CoastWatch node for the Caribbean and Gulf of Mexico are currently collaborating to produce Experimental Weekly Sargassum Inundation Reports for the Gulf of Mexico, Central America, Greater Antilles, Lesser Antilles and South America. IOCARIBE worked with GEO Blue Planet to disseminate these and other inundation reports via the Sargassum Information Hub.

- Best Practices: Initiated a collaboration with the Ocean Best Practices Initiative to compile guidelines on best practices related to sargassum management.

OIL SPILLS

During 2019, IOCARIBE and GEO Blue Planet were approached by the Regional Marine Pollution Emergency, Information and Training Centre – Caribe (UNEP CAR) about the need for a GIS-based information toolkit for the region that includes information such as the location of platforms, ports, past oil spills, potential current spills and environmentally sensitive areas. IOCARIBE and GEO Blue Planet worked to identify AmeriGEO as the host of such a service. IOCARIBE and GEO Blue Planet also worked to identify partners in the region that had the capabilities and software to implement analysis of oil spill imagery. A training partnership with Trinidad and Tobago's Institute of Marine Affairs, Trinidad and Tobago's Institute for Marine Affairs (IMA), Ministry of Energy and Energy Industries (MEEI) and Environmental Management Authority (EMA) was subsequently established in early 2021.

A summary of major partner activities between 2019 and 2021 is outlined below.

- Wider Caribbean Oil Spill Information System Workshop: GEO Blue Planet hosted the workshop in collaboration with AmeriGEO, IOCARIBE IOC UNESCO, NOAA Satellite Analysis Branch, and RAC-REIMPETC. The goal of the workshop was to discuss the development of an AmeriGEO oil spill information system for the Wider Caribbean.
- Oil Spill Analysis Training: Through the IOCARIBE & GEO Blue Planet partnership, a training was arranged for 20 trainees across IMA, MEEI and EMA on satellite oil spill monitoring. The training is currently underway and is being conducted by experts from NOAA's Satellite Analysis Branch.
- Oil Spill Information Toolkit: In collaboration with AmeriGEO, a GIS-based oil spill information toolkit is being developed. A pilot project for the toolkit is currently is being discussed with IMA and GEO Blue Planet.

IOCARIBE & MACHC Seabed 2030 Strategy

IOCARIBE and IHO Meso-American and Caribbean Sea Hydrographic Commission – MACHC Member States developed a strategy (December 2020, January 2021) to complete baseline seabed map of the MACHC/ IOCARIBE Region by 2030 that informs the sustainable, multi-purpose use of this region of the Ocean, as a contribution to the Nippon Foundation GEBCO Seabed 2030 Project and the UN Decade. IOCARIBE and the MACHC are working together to galvanize regional contributions to this important initiative. This collaborative effort requires broad partnership and coordination across governments, industry, academia, regional scientific and non-governmental organizations and citizens.

Within this framework IOCARIBE and MACH propose to complete baseline seabed map of the MACHC/ IOCARIBE Region by 2030 that informs the sustainable, multi-purpose use of our regional ocean.

A complete bathymetric map of the MACHC /IOCARIBE Region will be a significant contribution to the Nippon Foundation GEBCO Seabed 2030 Project and will inform and improve regional marine spatial planning, disaster response, environmental management and scientific investigation activities, as identified in the Societal Goals of the UN Decade of Ocean Science for Sustainable Development 2020-2030. Completion of this map was also

identified as a priority during the UN Decade of Ocean Science Regional Workshop for the Western Tropical Atlantic hosted by the Autonomous National University of Mexico (UNAM) and co-organized by the Government of Mexico with the Intergovernmental Oceanographic Commission (IOC) in April 2020.

IOCARIBE and MACHC have identified respective capacity development training offerings for 2020 and 2021 and considered co-sponsoring those of common interest to avoid duplication of effort and maximize impact. In 2020 they agreed on a MACHC-IOCARIBE Seabed 2030 Work Plan for 2021; and as a part of their contribution to SEABED 2030, they will be sharing, delivery and management of marine spatial data holdings through pilot projects with partners such as the IOC/IODE and the IOCARIBE Caribbean Marine Atlas (CMA).

INTERNATIONAL BATHYMETRIC CHART OF THE CARIBBEAN AND THE GULF OF MEXICO (IBCCA)

The National hydrographic services from IOCARIBE MS who are working in the development and publishing the International Bathymetric Chart of the Caribbean and the Gulf of Mexico (IBCCA) have established partnerships within the IHO Meso-American and Caribbean Sea Hydrographic Commission – MACHC. The International Hydrographic Organization (IHO) benefited from contributions of IBCCA, through the IHO Data Centre for Digital Bathymetry, and the IHO-IOC joint General Bathymetric Chart of the Oceans (GEBCO) project maintained liaison and cooperated with IBCCA. The Chart has been finalised and published. There are plans to extend the geographic coverage to include the South-America Eastern Tropical area by cooperating with Brazil and including their northern region.

OCEAN TEACHER GLOBAL ACADEMY. REGIONAL TRAINING CENTRE COLOMBIA

Between April 2019 and April 2020 OTGA delivered 6 courses (face to face) with **105** participants from **16** countries. The ISO Certification of the IOC Project Office for IODE, Oostende, Belgium as a learning services provider was renewed in April 2019 and April 2020, following the successful annual audits.

The OTGA-2 implementation started in March 2020, in the midst of the COVID-19 pandemic, while most countries were under a strict lockdown. Nevertheless, the Regional Training Centre (RTC-Colombia) successfully delivered virtually 5 courses during 2020 and 1 more in April 2021. Between April 2020 and April 2021, a total of 6 courses were organized (online) involving 212 participants from 12 countries. For year 2021 are planned 9 courses including Statistical Techniques, Marine GIS, OBIS, Data Science, ICZM-MSP, Ocean Acidification and MPA.

COVID-19 pandemic has been a challenging period during which RTC-Colombia increased number of courses, as well as number of applicants and participants. Great prospect to virtualise materials and learn about new methods for training on-line. LAC countries have now more opportunities to participate given that virtual media opened access to more students with almost equal technical requirements than before. In addition, the RTC since 2020 is working to increase the number of students from many countries as possible.

However, the fieldwork and laboratory activities decreased significantly, and the on-line courses demand huge effort and time for preparation, execution, evaluation, high investment

on technology and training improving the lecturer's skills and abilities, who required creativity and innovation for virtual and online training.

During November 2020, RTC-Colombia participate in the Co-designing the Ocean Science we need for the Western Tropical Atlantic (WTA) supporting the construction and implementation of the CD Strategy for the Region. Nowadays RTC-Colombia is part of the Capacity Development Group at the WTA Regional Planning Group.

RTC-Colombia is part of the 16 Regional or Specialized Training Centres around the world (https://classroom.oceanteacher.org/). The LAC Region includes:

- Marine and Coastal Research Institute in Colombia (INVEMAR), Colombia
- University of Uruguay (UdelaR)/University of Santa Catarina (UFSC), Uruguay/Brazil
- Escuela Superior Politécnica del Litoral (ESPOL), Ecuador
- Escuela de Ciencias del Mar, Argentina

RTC-Colombia, as a part of the Remarco Network ("Red de Investigación de Estresores Marinos – Costeros en Latinoamérica y el Caribe") is working with IAEA for new Ocean Acidification Courses.

CARIBBEAN MARINE ATLAS (CMA)

CMA is an online platform designed and developed from 2016 to 2020 coordinated by IODE-IOC-UNESCO throughout Marine and Coastal Research Institute (INVEMAR) in Colombia. Brings together at least 25 countries (including CLME+), 8 of which are actively providing national information and data (Trinidad & Tobago, Guatemala, Jamaica, Barbados, Belize, Dominican Republic, Mexico and Colombia). CMA is co-financed by Government Flanders (Kingdom of Belgium). The information management is driven through more than 50 GIS experts from different countries and entities, registered on platform and trained to manage national information from country pilots. The platform is available and updated (https://www.caribbeanmarineatlas.net/).

From 2016 to June 2019 marked phase 2 of the Caribbean Marine Atlas Project (CMA2), which again centred on the sustainable operationalization of the Atlas as an online digital technology platform in support of ICZM and EBM at the scale of the Caribbean large marine ecosystem (CLME), with special attention to coastal hazards, climate change, fisheries, land-based sources of pollution and biodiversity and habitats. CMA2 was developed based on the self-government of a variety of uploaded spatial data and information products by partners. The information management on CMA2 is based on the use of own protocols, standards, and IODE information policy, to guarantee good practices and endorses the good use of high quality information. Training, awareness building and dissemination activities were also conducted. In addition,

CMA2 published a set of 10 regional indicators using national information. The platform was piloted in eight countries and at the regional level. To improve uptake, sustainability, and up-scaling of results, the CMA2 Project works closely with relevant efforts linked to the implementation of the regionally endorsed 10-year Caribbean and North Brazil Shelf large marine ecosystems (CLME+) Strategic Action Programme (SAP). This CMA2 'community' maintains communication and dissemination regarding concerns and use of the Atlas at regional technical/scientific events. CMA works addressing efforts to achieve an electronic repository of spatial information for the region with different tools and functionalities,

including its capacity and flexibility to receive and support new content in support of initiatives and projects that manage marine and data information.

On 2020 activities were developed in response to recommendations from CMA2 partner countries related to updating and improve viewer usability. CMA platform is supported by last GeoNode version as technological platform and has a new map viewer interface. To date CMA platform offers 351 thematic layers, 31 maps, 285 documents and is managed through 53 users with extra permissions for data and information management, useful for countries, institutions, initiatives and projects.

As part of the effort to spread the use of the CMA platform, two new initiatives call for meetings to recognize opportunities to work together.

- Caribbean Geospatial Development Initiative – CARIGEO
- Marine Atlas of the Network of Marine Protected Areas of the Gulf of Mexico (RedGolfo).

The CMA project funding ended in 2020 and CMA partners confirmed their commitment to use and maintain the platform, and agreed on a sustainability strategy to ensure continuity in the information delivery and to increase the amount and updating of the marine and coastal spatial data in the Atlas.

As planned, the CMA project came to an end. The financial support provided by the Government of Flanders (Kingdom of Belgium) play an instrumental role in the development of the CMA. This support jointly with technical support of the CMA partner countries and their agencies and the technical support and coordination of INVEMAR (Colombia) is one of the best examples of cooperation for capacity development. The CMA project allowed increased training opportunities, sharing of knowledge, strengthening regional capacities that benefit IOCARIBE Countries. CMA project leaves a significant capacity installed in terms of regional marine atlas, data and information repository and a set of indicators, all of these under standards and information policy established. Also, CMA derived a set of best practices related to Marine Spatial Data infrastructure in support to decision-makers, available to replicate at the national level.

INVEMAR (Colombia) will continue hosting the Atlas, as well as providing technical support of the platform to all users. In the first 2021 semester, an updated GeoNode training will be developed for those new users from partners and new initiatives/projects partners. CMA will also support the newly developed IOC Ocean Info Hub Project (OIH-Project) as well as will contribute to UN Ocean Science Decade in the Caribbean region.

NEW INITIATIVES WITHIN IOCARIBE-GOOS TO IMPROVE MEMBER STATES OCEAN OBSERVING, MONITORING AND FORECASTING CAPACITY. New Pilot Proposal

In response to the IOCARIBE XV.8 Recommendation, IOCARIBE and Partners Rutgers University, University of the Virgin Islands, and Texas A&M University, are developing a new proposal Transformative Ocean Observing for Hurricane Forecasting, Readiness, and Response in the Caribbean Tropical Storm Corridor (a pilot project on Improvement of Hurricane Observing Forecasting Capacity.

Project Objectives: Build supporting physical and social infrastructure and conduct a long-term, critical-region sampling program using Autonomous Ocean Gliders, High Frequency

Radars (HFRs), and other existing and developing technologies to provide real-time information resulting in hurricane forecast improvement. Improved forecasts will support new generations of local storm surge / precipitation / wave and coastal impact models and guidance used to directly enhance resilience. The effort will:

- Strive for appropriate observation density, diversity, and utilization for a sustained, meaningful regional impact;
- Create a regionally distributed supporting infrastructure including operations, education, training, and workforce development;
- Engage a diverse and influential group of partners to convert forecasts to products to local action;
- Lead to a sustained, expanded, regional Ocean Observing System based on GOOS principles.

IOC OCEAN INFO HUB (OIH) AND THE LAC OCEAN INFO HUB

The Ocean InfoHub (OIH) Project aims to improve access to global oceans information, data and knowledge products for management and sustainable development. The OIH will link and anchor a network of regional and thematic nodes that will improve online access to, and synthesis of existing global, regional and national data, information and knowledge resources, including existing clearinghouse mechanisms. The project will not be establishing a new database, but will be supporting discovery and interoperability of existing information systems. The OIH Project is a three-year project funded by the Government of Flanders, Kingdom of Belgium, and implemented by the IODE Project Office of the IOC/UNESCO.

The project will benefit marine and coastal stakeholders across the globe, but its initial focus will be on responding to requests for data products and services from three regions: Africa, Latin America and the Caribbean, and the Pacific Small Island Developing States, to meet their unique user community (thematic and language) requirements. The initial priorities for the Project will be to develop communities of practice for the three pilot regions, as well as to formalize partnerships with other UN agencies and key international partners.

IOCARIBE is developing jointly with MS national Agencies and Institutions, the LAC Regional Node for the IOC Ocean Information Hub (LAC OceanInfo Hub) with the technical support of IODE. Latin-American and Caribbean OIH LAC Regional partners held a planning meeting on 29 November 2020 with main objective of developing the Ocean Info Hub Action Plan for the LAC Region.

THE CLME+ TRAINING AND CAPACITY DEVELOPMENT (TCD) PORTAL

The Caribbean & North Brazil Shelf Large Marine Ecosystems project´s (CLME+) objective is to catalyze implementation of Strategic Action Programme (SAP) for the sustainable management of shared living marine resources in the Caribbean and North Brazil Shelf Large Marine Ecosystems.

The CLME+ Training and Capacity Development (TCD) Portal was implemented through a two-year agreement between the Intergovernmental Oceanographic Commission – IOC of UNESCO and the Ghent University, including a technical development and a sustainability and maintenance plan. The Portal was launched on 15th December 2020.The aim of the

CLME+ TCD Portal is to bridge the information gap between "those (marine practitioners) in search of training opportunities" and "those providing training and capacity building initiatives."

This way, the platform will help to enhance institutional and stakeholder capacity for sustainable and climate-resilient marine resources management in the wider Caribbean /CLME+ Region at regional, sub-regional, national and local levels, and thus, ultimately contributing to the long-term CLME+ Vision of a "healthy marine environment that supports the livelihoods and well-being of the Peoples from the region."

Expected core beneficiaries of the platform include - but are not limited to - professionals at Governmental Departments/Ministries in all countries from the wider Caribbean, at Inter-Governmental Organizations and Non-Governmental Organizations / Civil Society Organizations working on the marine environment.

THE UN DECADE OF OCEAN SCIENCE FOR SUSTAINABLE DEVELOPMENT 2021-2030 WESTERN TROPICAL ATLANTIC REGIONAL (WTA) WORKSHOP 27-28 April 2020.

Regional Consultation to facilitate the dialogue and the discussion for experts and stakeholders to define the Western Tropical Atlantic Region (WAT) Scientific Priorities and how they will be reflected in the Global Process of the UN Decade.

IOCARIBE - Structural Mechanism to manage the complexity in the region; overall responsibility for planning and coordination of the UN Decade of Ocean Science for Sustainable Development (2021-2030) in the Western Tropical Atlantic region; and to catalyse actions, projects and programmes.

Establishment of a Regional Planning Group and Working Groups by Societal Outcomes and Capacity Development July 2020.

The WTA UN Ocean Decade regional workshop Steering Committee members, together with regional networks, are setting up informal stakeholders' platforms to advance the regional coordination and planning for the Decade. These structures will play a key role in implementing regional activities and action plans to support the development of programmes, projects and activities labeled as "Decade Actions."

The Western Tropical Atlantic Regional Planning Group (WTA RPG) was established in July 2020 to advance and coordinate strategic partnerships and actions for the Western Tropical Atlantic region, benefitting from the support of IOCARIBE as the official Secretariat of this group. In 2020, WTA IPG developed a framework of Grand Challenges and Actions around each societal outcomes of the Decade that will support the elaboration of a regional action plan and will organize a series of virtual workshops. A Regional Session for the Western Tropical Atlantic Region was held in November 2020 to include needs and priorities at regional level in terms of transforming knowledge systems, developing capacity building training and education with the purpose of co-designing a solution oriented regional contribution to the Decade´s objectives. In 2021 a series of WTA Working Groups webinars is planned to co-design those transformative actions needed to reach the "Ocean We Want."

COMMUNICATIONS. NEW WEBSITE AND NEWSLETTER

A call to develop and implement **a new website for IOCARIBE**, making it a modern, safe and user-friendly navigation and management platform tool was launched in February 2021. Twenty-seven companies submitted their proposals and in consultation with IOC IT colleagues a short list of three companies was agreed. Presently, we are running a series of consultations with those three companies to assess their capacity and select the one that will carry out the contract,

A new **IOCARIBE Newsletter** is being designed with the support of US NOAA. It is recommended to publish the Newsletter quarterly and to link its production directly with the new Website.

UN Decade of Ocean Sciences for Sustainable Development 2021-2030 in the Tropical Americas and Caribbean (TAC) Region

BACKGROUND - IOCARIBE of IOC UNESCO organized a Western Tropical Atlantic (WTA-Ocean Decade) virtual meeting on April 28-29, 2020 to address the science priorities and capacity goals, in consultation with the many leading UN, NGO, science and private sector, indigenous and local communities and other stakeholders of the Wider Caribbean Region.

A Regional Planning Group (RPG) was established to advance and coordinate strategic partnerships and actions for the engagement in the Ocean Decade. The RPG established seven Working Groups to promote multi-disciplinary, inclusive co-design and implementation partnerships to achieve each of the six initial the Societal Outcomes and one specific for Capacity Development, recognizing the efforts of the Working Groups and strategy for advancing the Ocean Decade in the Tropical Americas and the Caribbean Region. The seventh societal outcome, an Inspiring and Engaging Ocean, has been addressed as a cross cutting theme.

Seven online workshops were organized around the corresponding WTA Working Groups (conducted July – October 2021). The workshops aimed to review knowledge gaps, barriers, identify priority areas and needs in capacity development, and catalyse a co-design process to find transformative ocean science solutions and develop potential Regional Ocean Decade Actions (programmes / projects / activities / contributions) as part of the global collective effort under the Ocean Decade.

Considerations for the New Biennium

During the IOCARIBE XVII Session, Member States will consider the following main actions for advancement of the Ocean Decade during the coming biennium:

1. Establishment of a UN Decade Coordination Office for the Tropical Americas and Caribbean Region.
2. Enhanced Terms of Reference for what has been the Regional Planning Group for the Ocean Decade. The planning is now well advanced and implementation is expected to be overseen by an expanded TAC Ocean Decade Task Force.
3. A call for more diverse and inclusive membership to an expanded TAC Ocean Decade Task Force, one that goes beyond the scientists who are key to implementation.

HAB - ANCA

There is a biennial Plan of Activities associated with ANCA's work objectives. The main objective for this two-year plan is to link IOCARIBE-ANCA with the plans and objectives of the Ocean Decade. Considering the sustainable development of the ocean, human health, and knowledge of natural phenomena for better control and management of them, are common objectives with ANCA. Careful consideration will be given to bridging knowledge gaps, identifying priorities, and generating interdisciplinary knowledge. All to support the future actions of the Decade of the Oceans.

2022 Challenges

- English translation of first HAB course using virtual reality.
- Development of the toxin module of the first HAB course using virtual reality. Both in Spanish and English.
- Disseminate through the IOCARIBE-ANCA network the objectives and plans of the Decade of the Oceans, on related issues and the protection of the oceans, as well as maintain communication with the exchange platforms with the National Committees of the Decade.
- Participate in the Ocean Decade Laboratories, as a result of the Decade: “A clean ocean”. A platform of virtual events will bring together diverse stakeholders on priority topics for the Ocean Decade to promote action for the Ocean Decade.
- Official creation in the first half of 2022 of the ANCA-Cuba National group. The objectives of this group will be to support the objectives and proposals of ANCA at the national level.
- Promote the participation of new countries in the region by having focal points. Identify the possible countries of the region to incorporate with real conditions.
- Webinar on the experience of data upload and event registration by country in HAEDAT. Update, help and recommendations. Date second week of July.
- Continue training and technology for the identification of harmful and ciguatoxic microalgae, as well as the management of the areas of greatest risk under an early warning system.
- Conclude and publish the book Potentially toxic fishes of the Caribbean, 1st edition. Translated into English.
- Hold the 3rd Course La Ciguatera a potential risk to human health.

4. MACHC-IOCARIBE Seabed 2030 Project

This Project is a collaboration between the IOC of UNESCO Sub-Commission for the Caribbean and Adjacent Regions (IOCARIBE) and the IHO Meso American–Caribbean Sea Hydrographic Commission (MACHC). The IOCARIBE and MACHC are sister regional organizations with overlapping Member State membership. They produced the MACHC-IOCARIBE Seabed 2030 Strategy 2021-2030 that was approved by both organizations, along with an annual Work Plan that they are jointly implementing with their members, international, regional, non-governmental, academic and private sector partners.

The priority Project outcome is to create an accurate, observation-based bathymetric map of the Tropical Americas and Caribbean Region through multi-sector partnerships and collaboration. This map is essential for the sustainable use of critical ocean resources and to inform and improve forecast capabilities, disaster risk reduction and response, environmental management and scientific investigation activities.

Best Practices - The proposed regional baseline bathymetric map will be made freely available to all users through the Seabed 2030 / Regional Data Assembly and Coordination Center (RDACC) for the Atlantic and Indian Oceans. The underlying data will also be accessible both through the RDACC and the IHO Data Center for Digital Bathymetry.

5. **IOCARIBE Sargassum and Oil Spill Capacity Development and Monitoring**

(Ref. Recommendation SC-IOCARIBE-XVI.7_Sargassum; SC-IOCARIBE-XVI.8_Oil Spills)

Background - In recent years, the Western Tropical Region has faced challenges from oil spills and an influx of floating sargassum seaweed. Large-scale oil spill incidents have included an April 2017 spill at Pointe-à-Pierre, Trinidad and Tobago and a July 2017 oil spill in Kingston Harbor, Jamaica. Illegal dumping of oil-contaminated waste by ships operating in the region is also a common occurrence. An increase in the frequency and volume of sargassum beachings and coastal overabundance has caused another challenge for the region with mats preventing the deployment and retrieval of fishing gear and clogging popular beaches, harbors and bays.

6. Oil Spill Monitoring in the Western Tropical Atlantic

In recent years, the Wider Caribbean region has faced challenges from oil spill incidents including a recent event where oil washed up on thousands of kilometers of Brazil's coastline from an unknown source and multiple spills originating from Trinidad and Tobago. Illegal dumping of oil-contaminated waste by ships operating in the region is also a common occurrence.

Despite these known risks, the Wider Caribbean lacks an operational oil spill surveillance service. Oil spills, such as in the case of the 2019 Brazil incident, are often identified only after oil reaches environmentally sensitive coastal areas. More recently, during Cartagena Convention IGM19/COP16 in July 2021, using satellites to detect oil spill was recognized as a regional priority in oil spill response and mitigation.

A first in the Caribbean region, three agencies in Trinidad and Tobago (TT) have jointly established a near-real time satellite oil spill monitoring program for their Exclusive Economic Zone (EEZ) since July 1st, 2021, after receiving training from US NOAA. The agencies include Institute of Marine Affairs (IMA), Ministry of Energy and Energy Industries (MEEI) and Environmental Management Authority (EMA).

The satellite oil spill products mostly utilize free publicly available satellite radar and optical imagery. The report is generated in arcGIS software.

Oil Spill Monitoring Next Steps

Recognizing regional needs for oil spill monitoring and coordination in the larger area, IOCARIBE is seeking other regional partners in receiving virtual training and standing up similar oil spill monitoring capabilities. Trinidad and Tobago's Institute of Marine Affairs will join US-NOAA to co-lead the satellite oil spill monitoring training in the Caribbean region.

7. INITIATIVES TO IMPROVE MEMBER STATES HURRICANE AND COASTAL INUNDATION OBSERVING FORECASTING CAPACITY

(Ref: Recommendation SC-IOCARIBE-XVI.6_Hurricanes & Coastal Inundation; Recommendation SC-IOCARIBE-XV.8)

During IOCARIBE XV and XVI Sessions, Member States were urged to: (i) contribute to this pilot project by deploying instruments to improve hurricane forecasting; (ii) report deployment opportunities and facilities to JCOMMOPS in order to maintain a sustained observing system for improved weather forecasting and ocean state estimation; and (iii) encourage the facilitation of domestic marine scientific research clearances to facilitate instrument deployments; and invited MS to iv) develop a framework to facilitate joint ocean observing missions among IOCARIBE Member States to measure the changing state of the ocean and atmosphere related to severe weather forecasting and climate trends; v) collaborate in developing this joint ocean observing framework, including capacity development, as part of the United Nations Decade of Ocean Science for Sustainable Development co-design process to develop proposals for regional implementation through the relevant Tropical Americas and the Caribbean Regional Planning Working Groups (TAC WGs); and vi) support and participate in the Coastal Inundation Forecasting Initiative which will develop and disseminate an operational system to forecast coastal inundation and flooding to help save lives and protect property, especially in low lying coastal areas.

IOCARIBE-GOOS established a pilot project on improvement of Hurricane Observing Forecasting Capacity jointly with national institutions and universities, including the National Oceanic and Atmospheric Administration (NOAA) and its Atlantic Oceanographic and Meteorological Laboratory (AOML), the Meteorological Institute, the Marine Sciences Institute of Cuba, the Texas A&M University, Rutgers, the State University of New Jersey, the Dominican Republic National Office for Meteorology (ONAMET) and the National Authority of Marine Affairs (ANAMAR).

FUTURE WORK

During IOCARIBE XVII Session, JCOMMOPS will be making a presentation on these issues, specifically with respect to ARGO floats. Member States will be invited to consider and agree on the need for more rapid approval of deployments and maintenance for 2024, in order to ensure that the region can continue to benefit from robust ocean observations for sustainable development.

IOCARIBE-GOOS

Dr. John Cortinas NOAA AOML Director and IOCARIBE Vice-chairperson (USA) was approved by the Board on an interim basis, as IOCARIBE GOOS Coordinator, to reinvigorate the IOCARIBE GOOS Regional Alliance, to re-organise the IOCARIBE-GOOS Steering Group; to coordinate IOCARIBE-GOOS efforts in the TAC Region and to explore what would be the best strategy for IOCARIBE-GOOS development, taking into account the advances and Regional Ocean Actions of the Ocean Decade in the Tropical Americas and the Caribbean (TAC) Region proposals.

The main purpose is to strengthen parties' contribution to IOCARIBE GOOS, contribute to the implementation of the Sendai Disaster Risk Reduction Framework; and jointly contribute to the United Nations Decade of Ocean Sciences for Sustainable Development (2021-2030).

Next Steps

IOCARIBE XVII Session will consider the role of the IOCARIBE GOOS Coordinator with a view to confirming Dr John Cortinas as GOOS Coordinator for the region. Additionally,

Member States will consider the report and recommendations of the GOOS the Marine Science Conference held in association with the IOCARIBE XVII Session

9. OCEAN LITERACY

(Ref: Recommendation SC-IOCARIBE-XVI.11 - Ocean Literacy)

Recalling IOCARIBE Recommendation XV.3 which underscored the value of culturally relevant ocean science for the public, and educational system; MS recommended to collaborate with Member States and stakeholders, including marine and coastal education networks, to enhance ocean literacy in the Latin American and Caribbean region through sharing of information, educational materials and best practices, and developing collaborative activities and co-designing Decade actions of cultural relevance in the region.

The Sub-Commission also acknowledged the important role ocean literacy could play in the context of the UN Decade of Ocean Science, and asked to collaborate with Member States and stakeholders, including marine and coastal education networks, to enhance ocean literacy in the Latin American and Caribbean region through sharing of information, educational materials and best practices, and developing collaborative activities and co-designing Decade actions of cultural relevance in the region. [Recommendation SC-IOCARIBE-XVI.11], to Inspire a solution-oriented Decade ocean literacy campaign that is inclusive, equitable, and empowering, and that engages youth, gender balance, and local and indigenous knowledge.

Next Steps

IOCARIBE and Partners are proposing a UN Ocean Decade Regional Action: “Ocean literacy: changing local communities’ relationship with the ocean by promoting knowledge democratization in the TAC Region.”

10. MARINE SPATIAL PLANNING AND INTEGRATED COASTAL AREA MANAGEMENT

(Ref: Recommendation SC-IOCARIBE-XVI.11- Ocean Literacy)

Dr. Leo Brewster, IOCARIBE Vice-chairperson and Director of the Barbados Coastal Zone Management Unit, Barbados, as part of the IOCARIBE Board responsibilities, is leading the IOCARIBE MSP / ICAM work and activities. Barbados was instrumental in the IOC MSP / ICAM strategy implementation in the Caribbean Region, leading during the last three decades the environmental efforts of Caribbean SIDS.

With the support of Member States and the UNESCO Field Office in the Caribbean, and in coordination with IOCARIBE, IOC/MPR organized the 1st MSP Forum for Latin America and the Caribbean in December 2022. The report of that meeting is presented at IOCARIBE XVII and recommendations from that meeting will be considered. As well, the IOCARIBE Secretariat should continue its efforts to link TAC Regional Ocean Actions Proposals and MSP/ICAM activities, projects in the Region.

11. THE IOC OCEAN INFOHUB (OIH) – LAC NODE

(Ref: Recommendation SC-IOCARIBE-XV.6 _ IODE in the IOCARIBE Region; SC-IOCARIBE-XVI)

The Ocean InfoHub project responds to requests made by IOCARIBE Member States at IOCARIBE XVII), which specifically refer to the implementation of the Recommendation SC-IOCARIBE-XV.1: IOC New Capacity Development Strategy: Implementation Plan "Urges IOCARIBE Member States to: … (iv) Actively participate in the further development and management of the IOC Clearing-House Mechanism for the Transfer of Marine Technology (CHM/TMT)", as well as similar recommendations from other regions such as Africa and the Pacific Islands.

INVEMAR (Colombia), in collaboration with IOCARIBE and IODE, has been critical to the development of this programme. Ocean InfoHub Project for LAC region focuses on the following types of data/information: People (researchers, youth, local communities), Organizations (governmental & private Sector), Documents, Spatial data / maps, Training opportunities, Vessels (research opportunities), Projects

The LAC Ocean InfoHub Node is anchoring a series of regional and thematic nodes including CLME+ Training and Capacity Development Portal; The Sargassum Information Hub; and Caribbean Marine Atlas. One of the challenges has been identifying online sources of information for all the topics covered by the LAC OIH Node, given that what is published by countries and institutions in the region is limited.

Next steps

IOCARIBE XVII is invited to consider the report of this important work and approve recommendations that facilitate the expansion and sustainability of the programme.

12. CLME+ SAP, CLME+ AND PROCARIBE+ PROJECTS AND OCEAN COORDINATION MECHANISM

(Ref: Recommendation SC-IOCARIBE-XVI.12_CLME+ PROCARIBE+)

The CLME+ project successfully ended in October 2021, creating a Coordination Mechanism for the Management of the CLME+ Transboundary Marine Resources, and a new Project Proposal (the PROCARIBE+ Project) was submitted to the GEF Council in June 2021 and a GEF PPG was approved in September 2021.

The IOCARIBE Secretary continues participating and chairing the "Interim Coordination Mechanism for the Sustainable Management, Use and Protection of Shared Living Marine Resources in the Caribbean and North Brazil Shelf Large Marine Ecosystems", created in 2017 through the CLME+ Project as a predecessor for the "Ocean Coordination Mechanism."

Memoranda of Understanding and UN2UN

- MoU for the creation of an Ocean Coordination Mechanism (OCM) for the wider Caribbean
- MoU CLME+ Interim Coordination Mechanism
- UN2UN between IOC of UNESCO and UNOPS to host the UNDP/GEF

PROCARIBE+ PPG Phase Coordination Unit at the IOCARIBE Secretariat in Cartagena as a contribution to the PROCARIBE+ Project. This is an extension of the IOC of UNESCO and UNOPS UN2UN for CLME+ Project with the same conditions valid until June 2022.

13. SARGASSO SEA

In the GEF supported Project “Strengthening the Stewardship of an Economically and Biologically Significant Area- the Sargasso Sea” IOC is the Executive Agency, and IOCARIBE is an Implementation Partner. IOCARIBE should continue actively working with the development and implementation of this important Project.

The increasing activity in the Sargasso Sea demonstrates the importance of addressing the cumulative impacts of human activities [on the high seas]. Some of the recognised and potential threats to the ecosystem and its marine life include A. Impacts from Fisheries; B. Impacts from Shipping; C. Impacts from other Commercial Activities (e.g. seabed exploration/exploitation, Sargassum harvesting, cable-laying, etc.); and D. Impacts from Climate Change and Ocean Acidification.

This Project aims to undertake a detailed diagnostic analysis which will identify science-based evidence of threats and potential impacts and will then further provide a concrete demonstration of how cooperation and associated partnerships can play a leading role in sustaining and restoring the health, productivity and resilience of such an area beyond the jurisdiction of any one country but encompassed by the regime established within the mandate of the UN Convention on the Law of the Sea, consistent with the associated precautionary approach and the concepts of duty and cooperation of States to adopt measures for the conservation and management of living resources in the area beyond national jurisdiction.

The demonstration of the sustainable use of living resources in areas beyond national jurisdiction (ABNJ) and improved conservation of biodiversity and ecosystem services within the Sargasso Sea marine ecosystem arising from the Project and the medium-term continuation of effective cooperation, scientific monitoring and associated socioeconomic and food security benefits will provide a model for achieving the overall Project Goal that can be replicated and scaled up elsewhere as applicable.

15. OCEAN TEACHER GLOBAL ACADEMY OTGA

(Ref: Recommendation SC-IOCARIBE-XVI. 5_OTGA) Main contacts:

OceanTeacher Global Academy provides a comprehensive web-based training platform that supports classroom training (face-to-face), blended training (combining classroom and distance learning), and online (distance) learning.

OceanTeacher Global Academy courses cover a range of topics related to the IOC programmes, contributing to the IOC Mandate and the implementation of the IOC Capacity Development Strategy, enabling equitable participation of all IOC Member States and IOC Programmes. RTC-Colombia at INVEMAR is part of the 16 Regional or Specialized Training Centres around the world. The LAC Region include the Marine and Coastal Research Institute in Colombia (INVEMAR), Colombia. Several online courses were held during 2021, even though field training was curtailed.

Challenges include the need to clearly identify information, data, and training priorities for the region; Increase training opportunities through OTGA RTC; Increase regional cooperation between formal (universities) and non-formal training courses, Strengthen the coordination and cooperation with other OTGA RTCs and Specialized Training Centers STCs, and continuing increasing the offer and participation of students from English speaking countries; and to reduce students dropping-out while attending online courses.

16. Ocean Acidification

(Ref: Recommendation SC-IOCARIBE-XVI. 4_Ocean Acidification)

IOC continues to provide active support to Member States in developing capacity to act towards, and to report on, SDG Indicator 14.3.1, which focuses on ocean acidification.

It was foreseen that IOC would continue ocean acidification training in the region for the period from 2021 to 2023, organised together with its partners and the local experts. However, during the transition period of 2022 at the Sub-Commission, these activities are expected to be continued during 2023.

Challenges and Next Steps

- Lack of trained staff and lab capacity to carry out monitoring activities in ocean acidification.
- The need to produce well-crafted ocean acidification monitoring guidelines and standard operating procedures has been addressed by IOC and partners.
- It is also necessary to link the LAC OA Programme to the Ocean Decade TAC Regional Ocean Actions, and in particular with the IOCARIBE, UNEP CEP and Partners project proposal “Developing a Tropical Americas and Caribbean Region Pollutants Observatory.”

IOCARIBE Budget for 2021-2023

IOCARIBE XVI Proposal 6 May 2021

#	Programme / Activity	TOTAL	RP	EXB	*EXB 1*	*EXB 2*	Funding Gap
1	UN Decade Coordination	160,000					160,000
2	Ocean Acidification	200,000					200,000
3	IODE						0
4	OIH LAC	70,000					70,000
5	HAB-ANCA	45,000					45,000
6	OTGA	50,000					50,000
7	IBCCA	830,000					830,000
8	IOCARIBE-GOOS New Pilot	1,000,000					1,000,000
9	SARGASSUM	250,000					250,000
10	OIL SPILLS	200,000					200,000
11	CIFI-C	80,000					80,000
12	MSP	120,000					120,000
13	OCEAN LITERACY	80,000					80,000
14	PROCARIBE+	300,000					300,000
15	IOCARIBE MACHC SeaBed2030	250,000					250,000
17	IOCARIBE INT CONFERENCE	40,000					40,000
18	OBIS	40,000					40,000
							0
	TOTAL	3,315,000	0	0	0	0	3,315,000

*__EXB1__ Cash investment by partners. Funds not directly managed by IOC / IOCARIBE

*__EXB2__ in-kind investment by partners. Funds not directly managed by IOC / IOCARIBE

**__REGULAR PROGRAMME 2021-2023__

The IOC REGULAR PROGRAMME BUDGET 2021-2023 WILL BE PROVIDED AFTER UNESCO BUDGET ADOPTION

*Programmes in RED received in-kind support