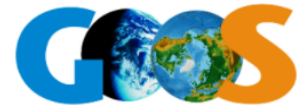




International Marine Science Conference on IOCARIBE GOOS



Recommendation SC-IOCARIBE-17

Initiatives to Develop a Sustainable Ocean Observing and Forecasting System for the Tropical Americas and Caribbean Region

The IOC Sub-Commission for the Caribbean and Adjacent Regions (IOCARIBE),

Aware of the critical importance of the seven outcomes of the UN Decade to all aspects of life, safety, and economy of the member states of IOCARIBE;

Acknowledge the progress made since the establishment of IOCARIBE GOOS in 1999, the kickoff of the UN Decade of Ocean Science for Sustainable Development in 2021, and other major ocean observing initiatives in the Caribbean;

Recognizing that “*Ocean observations, data management, analysis, models and products, are foundational to our approach to sustainable development*”, as declared by the 2021 IOCARIBE UN Decade Kickoff Conference;

Recognizing that ocean measurements of Essential Ocean Variables (EOVs) are needed to improve extreme events like hurricane and tsunami intensity forecasts;

Recalling that opportunities are abundant due to the existence of UN Decade Programmes, the advancement in capacity of regional activities, and the endorsement of TAC-OOS UN Decade project;

Welcomes the IOCARIBE-GOOS establishment of a pilot project on Improvement of Hurricane Observing Forecasting Capacity;

Urges IOCARIBE Member States to:

- (i) Take action to support the re-establishment of a sustained regional ocean observing and forecasting system and nominate experts to this group through a Circular Letter;
- (ii) Identify and inventory priority needs within the region while considering available resources and avoiding the duplication of previous work;
- (iii) Report activities taken by National Committees to better inform the Tropical Americas and Caribbean (TAC) region;
- (iv) Establish a sustainable governance structure and Terms of Reference to share experience and activity among IOCARIBE Member States;
- (v) Seeks active representation and participation from each of the IOCARIBE Member States;
- (vi) Leverage ongoing regional and international activities and partnerships, including CIMH and CARICOOS;

- (vii) Develop a Regional Strategy for ocean observing and forecasting - based on needs, existing expertise, and partners;
- (viii) Promote best practices for data standardization for stakeholders across the region, including particularly the private sector and local communities;
- (ix) Include communications, social science and ocean literacy when assessing ocean observing needs.
- (x) Engage and invite youth, such as Early Career Ocean Professional (ECOP), from the region to engage in IOCARIBE-GOOS governance structure.
- (xi) Report deployment opportunities and facilities to OceanOPS (formerly JCOMMOPS) in order to maintain a sustained observing system for improved weather forecasting and ocean state estimation.
- (xii) Encourage the facilitation of domestic marine scientific research clearances to facilitate instrument deployments.

Introductions & Opening Remarks

Speakers:

- Dr. Vladimir Ryabinin - Executive Secretary of IOC
- Dr. Lorna Inniss - Head IOCARIBE Secretariat
- Dr. John Cortinas - Chair of IOCARIBE GOOS
- Dr. Ann-Christine Zinkann - ECOPs Representative (NOAA GOMO)

High Level Takeaways:

- IOC and IOCARIBE leadership provided an overview on GOOS and the UN Decade, and a brief presentation on IOCARIBE GOOS' vision for the region. The Executive Secretary particularly noted the importance of heightened engagement from youth and ECOPs.
- It was recognized by the speakers that a sustainable ocean observing system is fundamental to tackling many of the issues faced by the Caribbean today, including disaster risk reduction, Sargassum, oil spills, and marine pollution.
- A sustained IOCARIBE-GOOS is needed to improve weather forecasts, understand currents, expand our blue economy, detect climate change, protect society, and improve satellite observations for the region.

GOOS Program Overview and Regional Alliances

Speakers:

- Emma Heslop - GOOS Project Office Perspective
- Joaquin Tintore - Readout from the GOOS SC meeting
- Doug Wilson - Brief History of IOCARIBE - GOOS

High Level Takeaways:

- IOCARIBE-GOOS was officially established in 1999. It is important to build on the progress from experts in the region.
- There is a growing recognition of the strength of the GOOS Regional Alliances (GRA) system and the need to coordinate more closely at a regional level. The UN Decade has highlighted and accelerated this need.
- The GOOS Steering Committee noted regional activity as a priority, the need for better synergy among observing needs and Decade Actions, and a call for better data integration across GRA's.

IOCARIBE Programs and Decade Actions in the TAC Region

Speakers:

- Edgard Cabrera - Seabed Mapping
- Paula Sierra - Clean/Healthy/Productive Ocean
- Christa von Hillebrandt-Andrade - Safe/Predicted/ Transparent Ocean
- Doug Wilson - TAC-OOS Endorsed Decade Activity

High Level Takeaways:

- Mr. Cabrera made note of the progress on implementation of the Decade in the Caribbean, including the Western Tropical Atlantic Regional Workshop held in April 2020 which led to creation of the eight IOCARIBE Decade Actions.
- Experts from the region provided an update on four of the eight IOCARIBE-led Decade Actions that have been endorsed by the IOC. The eight projects are focused around three themes: (1) knowledge and solutions, (2) essential infrastructure, and (3) foundational challenges.
- It is recommended IOCARIBE develop initial tasks for each of the Decade Actions, including outlining projects of importance, strategy for their implementation, and funding sources for initial and long-term sustainability of the project.
- The speakers suggested that a sustainable ocean observing system must include a robust capacity building program that identifies: regional assets, regional observing needs, key partnerships, and gaps and extension of a need identification process.

Leveraging regional and international networks and furthering engagement in the TAC

Speakers:

- Emma Heslop - Setting the stage + GOOS CoDesign
- Emily Smith - ARGO Representative
- Scott Glenn - Uncrewed systems in TAC
- Nadia Pinardi - Coast Predict

- Annie Zaino - EarthScope
- David Farrell - Caribbean Institute for Meteorology and Hydrology
- Patricia Chardon - CariCOOS
- Christa von Hillebrandt-Andrade - Tsunami and Tide Gauges

High Level Takeaways:

- Beyond the Decade, there is extensive regional and international activity that should be leveraged.
- Experts from the region presented on these opportunities, including ongoing work related to GOOS Co-Design, Argo, uncrewed systems, CoastPredict, EarthScope, the Caribbean Institute for Meteorology and Hydrology, CariCOOS, and tsunami and tide gauges.
- Regional needs identified by the speakers include funding and other resources for deploying instrumentation, training and continued capacity to sustain the network, increased inclusion from the private sector, data standardization and FAIR data access.
- It was highlighted that the Caribbean needs to further leverage resources and networks from both the IOC and the WMO.
- Instrumentation deployment and floating into Exclusive Economic Zones of other countries continues to be an issue. A preliminary discussion on how to address this through open discussion and partnership was explored.

Guided Q&A / Open Discussion and Recommendations for the 17th Session of IOCARIBE

High Level Takeaways:

- Need to be able to make data and information more accessible to non-scientific audiences, including particularly the private sector and local communities;
- Targeted education must be provided to coastal communities - specifically K-12 education so they can find opportunities and make climate-smart decisions in their communities.
- Ocean literacy and the transfer of marine technology are major components of the UN Decade and other IOC activities from educating youth, businesses, decision makers, etc.
- Important not to duplicate efforts within the region - identify gaps, do not reinvent the wheel.
- Define what is meant by youth (age, class of education, etc.) and be better at including youth voices and ECOPs. Require working groups to have an ECOP co-lead; help them develop this experience and networking structure for them.
- Important to include communications, social science and ocean literacy when assessing ocean observing needs.