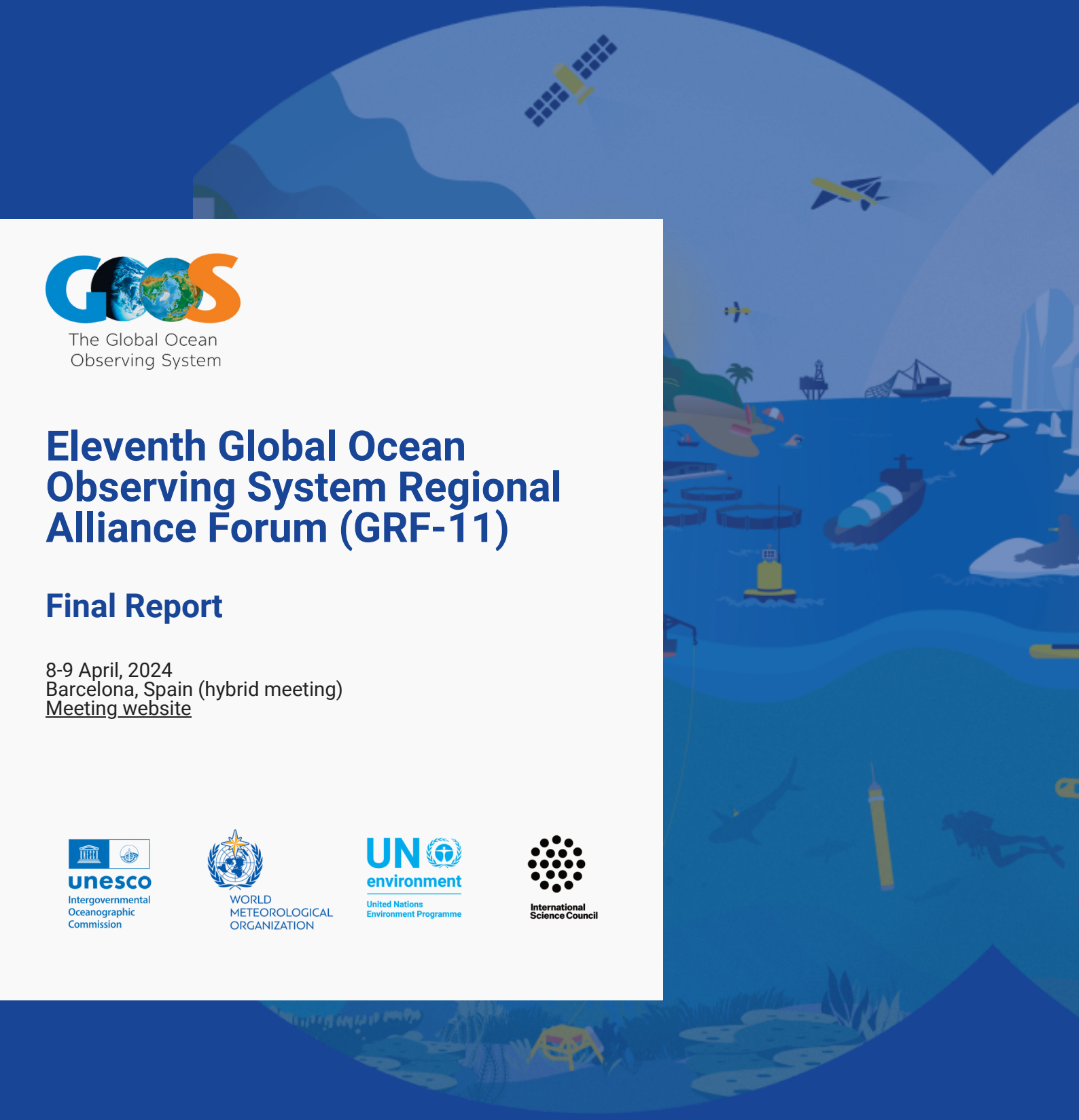
# GOOS MEETING REPORT



The Global Ocean Observing System

# Eleventh Global Ocean Observing System Regional Alliance Forum (GRF-11)

## Final Report

8-9 April, 2024
Barcelona, Spain (hybrid meeting)
Meeting website

unesco Intergovernmental Oceanographic Commission

WORLD METEOROLOGICAL ORGANIZATION

UN environment United Nations Environment Programme

International Science Council

**SEPTEMBER 2024**
**REPORT NO.: GOOS-302**

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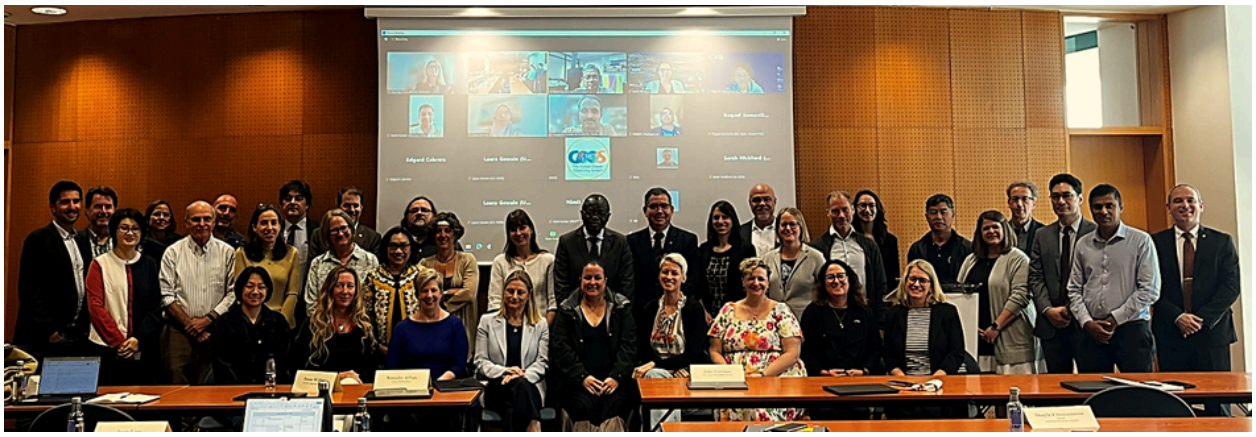

### Executive Summary

**The 11th GOOS Regional Alliance Forum (GRF-11)** was held in Barcelona, Spain, in April 2024. The meeting focused on reinvigorating relationships among the GRAs and strengthening GRA collaboration, assessing the progress of the GOOS Strategy 2030, and exploring opportunities across the GOOS Panels, Projects, and Networks. Participants exchanged insights on capacity development and knowledge sharing, with a particular emphasis on supporting emerging GRAs. Comprehensive reports from each GRA highlighted regional achievements and challenges. To ensure continuity and effective leadership, Carl Gouldman will continue on as Chair of the GRA Council for an additional two years, and Alvaro Scardilli from Argentina (OCEATLAN) was elected as Vice Chair.

**Key outcomes and actions include:**

- **Strengthening GRAs:** Increased communication among GRAs and the GOOS Secretariat, support for emerging GRAs, and identification of recommendations for the GOOS Steering Committee.
- **Capacity building and knowledge sharing:** Emphasis on developing a toolkit for capacity sharing, enhancing communication among GRAs and GOOS components, and updating the GRA GOOS website.
- **Collaboration:** Identification of specific collaboration opportunities between GRAs, particularly for Small Island Developing States (SIDS), and establishing a regular meeting schedule.

## Report

*Note that this is an interactive document with links to recordings, presentations, and background and working documents. Click the blue underlined hyperlinks to reach those resources. The Report covers the discussions and follows the GRF-11 Agenda (here), the actions arising from these discussions are noted in the text and compiled in the Actions Table. The meeting was held daily (8th of April - 9th of April, 2024) in Barcelona, Spain at the World Trade Center with a virtual option for participation. Each substantive agenda item below captures a short summary, the main points of discussion and action items of each session.*

*Please refer to the action list (Annex 1) for the compiled list and additional information on the actions, including teams, identified priorities, and responsibilities.*

### 1. Opening

Carl Gouldman opened the meeting and welcomed participants to Barcelona from 13 GRAs. We conducted introductions around the room and online, reviewed meeting logistics, discussed key objectives of the meeting, and adopted the meeting agenda.

### 2. GOOS Strategy 2030 and Implementation Plans

Joanna Post presented on the GOOS 2030 Strategy including key progress, challenges and opportunities and iImportance of GRAs to ocean observing and advancing the strategy. While Essential Ocean Variables (EOVs) are a key component of GOOS, we need to evolve the variables in order to evolve GOOS and the implementation plan of the GOOS 2030 Strategy. The EOVs do well to describe data, but the data needs to be matched to goals for the information.

Joanna discussed her new role in GOOS and work she is advancing with the GOOS Programme office to advance GOOS development. Discussed what is GOOS, what GOOS is doing, and how the various parts of GOOS fit together. Joanna discussed the various parts and groups associated with GOOS including the Member States, Decade Coordination and GOOS Projects and community, Metadata and modeling groups (OceanOPS, ETOOFS, OBIS/BioEco Hub), Observations coordination (OCG, GOOS Networks, GOOS Regional Alliances (GRAs) and National Focal Points), Requirements groups (3 expert panels and WMO groups), the GOOS Management Team, and the GOOS Steering Committee.

Joanna spoke on how GOOS is deepening engagement and impact along with system integration and delivery - how we can evolve around requirements, data and standards, and operational oceanographic forecasting.

Joanna also spoke about engagement of the GRAs at national level and the reinvigoration of the IOCARIBE-GOOS and GOOS Africa GRAs.

Joanna posed the question to the group - is Global Ocean Observing System sufficient to meet accelerating climate impacts and societal needs? An important role of GOOS is providing the

global view of ocean observing to address societal needs and mitigate risks from climate impacts. Providing global coordination.

*Resulting action/Recommendations*

**GOOS Updates**

- Develop communications toolkit for describing GOOS and clarify stance on key risks and the associated observations needed to address them
- GOOS to strategically engage with satellite and remote sensing community

## 3. Reflections on past Forums and progress

Emily provided a summary from the survey sent out prior to the meeting about priorities for the next few years. Several were identified including:

- Capacity development
- Access to technological development
- Improvement of regional and global coordination
- Delivering seamless observations from the open ocean into estuaries
- Developing tools and products to help non-experts access and use ocean observations for planning and decision-making
- Increasing the amount of data delivered in near real-time to support forecasting and prediction.
- Sustaining growth of the network
- Fair and equitable service delivery
- Scaling up coastal resilience services, all within the scope of growing the Ocean Enterprise.

Sarah Nickford (NOAA) provided a presentation on the status of the BOOC (Benefits of Ocean Observing Catalog) and discussed the Beta Version of the catalog.The benefits and updates of the BOOC: developing the ability to generate a synthesized report of all use cases that result from the user search by using IA. As of now there are only 11 cases, but there will be more very soon.Sarah requested the f GRAs provide use cases for the pilot.

- This could be a way to help share information and increase communication across entities.
- It was suggested to use tsunamis as a test case and link Tsunamis warning system and the GOOS community.
- GOOS strategy/next step: collaboration opportunity. The question is to know where the delivery areas for observations are. For example, Tsunamis have to be mitigated, through observation but where are the other risks? (where to put solar energy, extreme event warning etc). Finally, there is a need for Member States to invest in observing plans for determined spaces (with risks being identified by the MS)

*Resulting actions*

- **ACTION:** Discussion of need for more communication across the GRAs - more frequent calls for the purpose of information sharing.
- **ACTION**: Creation and development of a Linked In group for the GRAs and/or GOOS

## 4. Blue Economy

Michelle Heupel, Director of IMOS, introduced the Blue Economy discussion and chose to focus on what it is and how to leverage Ocean GDP. She reaffirmed that the Ocean will be critical to solving the climate crisis leading to the key question of how to fund the programmes dedicated to reaching that goal. Related, it is essential to address the issue of the transformation of data into information, for it to be useful for a non-expert. She underlined that this information plays a critical role as it informs inter alia case studies, briefs to government, and public communication needed to help address complex ecological questions.
Furthermore, Michelle took a concrete example to illustrate the benefit of investment for ocean observation. She highlighted that IMOS 'return on investment was a benefit to cost ratio of 12:1 with approximately $4.70 of benefits generated for every dollar of cost to IMOS and partners. It triggers the reflection on how we can use economic return as an argument for government or industry investment in ocean observing programs? Michelle explained that IMOS hired economists to conduct a report while also working with governments to build partnership and trust to ensure the data is publicly available. On that, Michelle proposed to share the IMOS report with the idea that others could use it because the return on investment should not be country specific.

*Resulting action*

**System integration**

- Participate in workshops targeting the quantification of the impact of ocean obs. GOAP hosts for example workshops on sustainable ocean development.

## 5. Round Table Discussion #1 | How can GRAs coordinate to help evolve capacity and sharing of knowledge?

The room was divided into 3 groups to discuss the following questions:

a) What can GMT (GOOS Management Team) or other well funded GRAs help/support/share knowledge?
b) What regions can be connected? Ex. IMOS to help support PIGOOS
c) What is a way to facilitate intra-coordination for the regions?

d) What are the observations needed in your region to support the blue economy?
e) Funding–to support jobs within countries vs. buying equipment.
    (1) How to message to governments the importance of hiring ocean positions?
    (2) Use cases for sustained observing
f) What can GOOS say/share with Member States for support in regions with needs?

Groups answers combined:

Answering the question of what can the GMT and GRAs help/support:

- GMT as a group could help set priorities for all the groups and incorporate them into specific regional areas.
- GMT could provide case studies that other well funded GRAs have done to be used as a model.
- GMT could share resources and make sure that data is open source
- Put in place a clearer IOC Secretarial role linking the Decade, the GCCs with other GOOS and GRAs

To facilitate intra-coordination for the regions:

- Identify thematic priority areas that regions could coordinate on
- Have better standards, open source code, working better with IODE
- Form informal working groups based on platforms or emerging technologies and conduct useful training for the GRA on these platforms
- Improve the sharing of data across nations within a GRA and across GRAs

What regions can be connected:

- Indian Ocean
- Pacific

To facilitate intra-coordination for the regions:

- Centralization of data: having some sort of way to access the different data portals or data centers.
- Varying GRA governance - institutions, member states, academia etc.

To share with Members States for support in regions in needs:

- Consistent messaging from the bottom but also top level messaging
- A need to be proactive and not reactive
- Tie in how contributions have improved weather forecasting
- Advocating for the ocean obs value chain
- Sharing platforms/training on technologies
- Articulating how a functional observing system benefits society and how the loss or absence of a functional system, in a country is detrimental

Message to governments on the importance of hiring ocean positions:

- Need to make sure that we are supporting young graduates, supporting capacity development and also capacity retention. Idea of developing a community of practice around community retention.

To support the blue economy in the respective regions:

- Funding for data management and help the GRAs to distribute their data
- Adoption of widely adopted standards
- Encouraging, disseminating and updating IODE training

Other materials:

- GRF11 RoundTable 1

*Resulting action*

- GOOS Office will compile the notes from the break out groups into a report.
- Think about how we can communicate better - including a tool kit for communicating the importance of GOOS but also improving capacity sharing across the GRAs.
- Think about how we can meet intersessionally to advance GRA activities - what is the best way to evolve these conversations
- GOOS Steering committee to help with messaging and coordination and prioritization of the GRAs.

  Pass on data management recommendations to the steering committee

## 6. GRA Work Plan Part 1

Group Discussion on action items for future

A. Actions from the day
B. Key points
C. Reactions/recommendations to the GOOS SC

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Resulting action

- It would be beneficial for GRAs to share advice on success on establishing and getting funding for a GRA
- Creating MOUs or SLA between nations with a GRA would be helpful
- Coordination of the GRAs: one potential area for coordination is through sharing best practices
- Hiring personnel where needed
- A connection with WMO may be beneficial in promoting ocean jobs
- Provide more information on how the GRAs are structured, who is chair and put the information on the GRA/GOOS website. Need to make sure that the GOOS Website is more user friendly
- Update of Terms of Reference

## 7. GRA Reports

GRAs presented on success stories, near-term and long-term priorities, and discussed their needs from the GOOS structures, from other GRAs, and from the GRA forum.

Below are the responses from GRAs on the question "**What do the GRAs need from GOOS?"**

General agreement that the GRAs need:

- increased governance structures and framework from the GOOS structures and GOOS Steering committee
- better understanding of GOOS priorities and linkages to the UN Ocean Decade and other GOOS projects where GRAs may be able to add expertise
- financial support to assist with capacity building
- better coordination across the GOOS structures

Between the GRAs, the GRAs desire to increase partnerships and sharing of best practices. It would be useful to identify common issues in order to work collaboratively to advance ocean observing capability. GRAs also desire to strengthen linkages with neighboring GOOS Regions:

Through the GRA Forum, the GRAs expect to make connections into the international community, identify opportunities for collaboration, connect together and make new friends.

Other materials:

- GRA Presentation
- IMOS GRA Report
- NEAR-GOOS Report
- GRA XI Report Template IOGOOS
- GRA Report EuroGOOS
- GRA Report OCEATLAN
- GOOS Africa Report
- SOOS GOOS
- GRA Report PIGOOS
- GRA Report IOCARIBE GOOS
- GRA Report MonGOOS

*Action items identified:*

- ☐ Survey the GRA network to better capture the sustained observing contributions of member infrastructure, as this is currently not well represented. Work with GRAs to help capture this information.
- ☐ Define core elements of a standard GRA terms of reference that each GRA can then modify depending on their priorities and strategies.
- ☐ Launch a discussion on better connecting WMO regions and GRAs within the IOC-WMO-UNESCO DBC collaborative board, whose work is resuming with a September 2022 in-person meeting in India.

☐ Consider a revised description of what constitutes a GRA to help inform these discussions.

## 8. Panels and Projects update

**GOOS Biology and Ecosystems Panel**

There are different goals from 2021 to 2029:

- Communicate the value proposition across stakeholders.
- Strengthen partnerships and develop leadership across networks.
- Build the foundation for implementation of the EOV: resources, best practices, fair data, capacity, metrics.
- Implement technological developments: multivariable across platforms, novel, automated, calibration and QC.
- Expand network coverage: sustain strengthen, expand – Pilots – sentinel sites
- Advance use and impact for observations
- Best practices, connecting and sharing observations, strengthening connection with GRAs (e.g., work with GRAs to progress GOOS Strategic Objectives, integration of observation of BioEco EOVs) and build strategic alliances

**OOPC**

OOPC's main activities for 2024-2028 are:

- Observing System Evaluation and Strategy for Ocean-Atmosphere Fluxes
- Observing System Evaluation and Strategy for Boundary Systems
- Global Ocean Indicators Framework
- Observing System Evaluation and Strategy for Ocean Heat and Freshwater Storage and Transport
- Pan-tropical Observing System (with CLIVAR)

OOPC interested in deepening its relation with GRAs:

- Must attend each other's meetings
- Experts involved both in OOPC and in GRAs
- GOOS provides multiple opportunities for interaction too: GOOS Executive, GOOS Steering Committee
- OOPC is interested in learning about initiatives taking place at the GRAs and also willing to get feedback from the GRAs, in particular when preparing the next GOOS Implementation Plan.

**Global Marine Carbon and Biogeochemistry Observing Capacity and Data products.**

The goals are multiple:

- Requirement to rapidly and operationally link ocean data through to policy makers and minimize mitigation/adaptation costs
- Free, open and FAIR access to data
- Regional contribution to global data synthesis product
- Building regional coordination, promoting regional PIs, support in joining OCG network

- Augmenting regional observing capability with regards to regional need
- Technical capacity building: use of sensors, access to intercomparison exercises.

**AtlantOS: Co-design in the Atlantic**

AtlantOS has several goals:

- Build a community and community of practice across observing, modeling and predictions
- Provide a fit-for-purpose and responsive observing system to enhance the value of ocean observing to serve end-users
- Connect and internet with Atlantic partners and key stakeholders to ensure co-design and their interest are served at national, regional and international level.
- Promote open sharing and exchange of information

Concerning recent developments AtlantOS:

- Produce AtlantOS Ocean Hours to provide community engagement
- Endorsed UN Decade Project “AtlantOS Connect”
- Start of Consultation process – e.g., barriers, user needs

The next steps are:

- Finalize means to engage with AAORIA and existing Atlantic ocean efforts
- Work closely with the Ocean Decade Programmes Ocean Observing Co-Design and Observing Together
- Continue AtlantOS Ocean Hours to provide community engagement
- Stakeholder Workshop in Summer 2024

**TPOS: Tropical Pacific Observing System**

TPOS is facing challenges:

- TPOS Sustainability (e.g. establishing longevity and sustainability mechanisms for implementing and tracking recommendations
- Stakeholder Advocacy (e.g., building and sustaining advocacy for regional investments with involvement in design and implementation, address the remaining/not yet done components of TPOS 2020
- Pan-Tropics Connectivity (e.g., addressing shared challenges and identifying synergies to strengthen connections within and across the global tropics, GOOS-led: leverage regional efforts and identifyy opportunities to build engagement

TPOS desires to engage with GRAs

- Top-level goal ( e.g., establish relationships within the three most TPOS-relevant GRAs to make connections for any future engagements, explore GRA and WMO Regional connections)
- NEAR-GOOS (e.g., increase stakeholder advocacy to address and sustain observing system requirements)
- GRASP (e.g.., build on previous work with WMO RA-IV in the Eastern Pacific to promote data cooperation, data sharing etc.)
- PI-GOOS (e.g., establish connections and incorporate Pacific Islands perspectives, priorities, contributions)

**IOC-Ocean Best Practice System:**

To achieve a global, sustained and trusted hub of ocean know-how, there needs to:

- Expand work with developing nations, remote regions and Indigenous peoples
- Motivate and focus a global conversation around practices
- Encourage organizations to endorse what “is best” for them
- Harmonize metadata and structures (FAIR BP)
- Promote federated network of methodological management systems
- Synergize best practices and standards

**DOOS**

DOOS is undertaking actions for an accessible Ocean Technology:

- Leading network coordination to synergize efforts
- Creating standards and goal-driven timelines across stakeholders to rapidly expand accessible ocean tech
- Producing synthesis reports to assess gaps and prioritize technology maturation to observe EOVs
- Co-Creating an online community hub to connect accessible providers and user
- Ecological mapping: gridded regional habitat characterization maps
- Science to policy translation
- Integrating modeling and observing

**Smart cables**

Smart cables has short term priorities (2+years):

- Keep promoting synergies between science, industry, governments and other related stakeholders
- Have SOOS and other GRA as allies to promote SMART cables in a organized way
- Be officially an emerging network
- Be part of the GOOS Public Outreach process
- Develop the process for smart data

Smart cables also has long term priorities:

- Have 4 SMART cable systems around the world
- Have synergies between telecom and science with the Arctic, Pacific Islands, Caribe and South East Pacific Communities
- Have a standardized process for Smart data

**IMDOS**

IMDOS had 3 Strategic Objectives :

- System Integration and delivery by inter alia enhancing synergies between in-situ and remote sensing or integrating modeling and observing capabilities
- Engagement and coordination by inter alia coordinating existing and new initiatives, engaging with relevant science and decision-making stakeholders
- Authoritative guidance by inter alia providing recommendations on design and evolution or guiding assessment and harmonization of methodology

IMDOS highlighted that successful implantation of the IMDOS vision globally depends on how well we coordinate regional observing efforts, in close collaboration with the GRAs where

relevant. Addressing marine litter pollution requires regional implementation of globally accepted strategic methodologies and data management solutions. IMDOS provided elements related to the question of how to better engage with the GRAs.

- Provide recommendation for the design and evolution of the observing system for marine debris
- Promote the development of a global network of marine debris observations
- Promote the use of harmonized sampling protocols, common metadata and data requirements

Other materials:

- DOOS Update
- GOOS BioEco Briefing
- AtlantOS - Co-designing the atlantic
- Smart Cable Report
- IOCCP Report
- OOPC Report
- TPOS Report
- IMDOS Report

*Resulting action*

- GOOS structures (Steering Committee, panels, the Observations Coordination Group and JCOMMOPS, GOOS Office) need to provide framework and guidance
- Other GRAs need to share lesson learned and best practices
- Improve communication of information between the different entities
- Facilitate coordination between panels, projects and GRAs
- To help identify pathways from emerging network to becoming a mature network

## 9. Round Table Discussion #2 | Strengthening Capacity between GRAs, GOOS Panels, Projects, and Networks

In order to strengthen the capacity of GRAs, networks, projects and panels to support each other it was recommended to hold a technical discussion with GRAs on observing needs and specifically on the EOVs with the panels. Better engagement could also go through more communication between the GRAs, the GOOS management Team and the different panels and projects (e.g., the establishment of a regular cadence on sharing information.
The observing needs in regions that align with Projects, Panels and Networks were multiple. It was noted that it is complex to figure out what the GRAs need help with as there are varying priorities and capabilities. There is a key need for the panels to understand the priority areas for each GRAs as they are the regional lens for understanding what EOVs to observe in particular regions or basins. The group could identify a few priorities to focus the collaboration efforts on to advance connections between the GRAs and the panels/projects.
To be more specific:

- In Africa the focus is more on pollution and coastal erosion, and in the open ocean the focus is on fishing and how to manage illegal fishing.
- The question of emerging technologies and collection of data was also raised.
- There was a discussion concerning the revision of EOV specification sheets leading to the conduct of a review and revision of the EOVto capture the needs and capabilities from emerging technologies.
- There was a discussion concerning developing ocean indicators as unifying frameworks for connecting the GRAs.

To enhance GRA observing, the idea of categorizing the types of priorities was raised: technical capability vs. data management vs. capacity development etc. The GRA could play a key role in outlining the priorities each GRA provided to see if there are priorities which align. Identifying top 2-3 priorities for each GRA may be more useful to match the need and expertise. Each region has different capacity gaps, so by understanding those gaps in capacity may allow for more tailored efforts to build capacity.

Finally to the question related to the collection of information, the group highlighted that:

- DOOS would like to provide training on how to get data into OBIS
- They are trying to make OBIS more automated and they would like to work with others to test the system as well as teach how to add data
- The BioEco panel could help to develop data flows/data schemes to get the biological data into OBIS.

Discussion questions:

- What are the observing needs in regions that align with Projects, Panels, and Networks?
- What additional information would you need to better engage with these groups?
- Questions from panels, projects, and networks? How can GRAs help advance work you are doing?
- What priority actions could be made with partners over the next 2 years to enhance GRA observing?
- What biological information are you collecting, planning to collect, and/or want to collect?
- Do you have any other questions?

Other materials:

- GRF 11 RoundTable 2

*Resulting action*

- Holding a technical discussion with GRAs on observing needs and specifically on the EOVs with the panels
- OCG. Cultivating the relationship between the GOOS umbrella, GRAs, and the OCG could be a priority action for this group
- Prioritizing holding regular meetings - agreement to hold more frequent meetings to develop and advance priorities.

- Develop a communications plan to include sharing more information about meetings so that GRAs and the panels/projects can engage with each other.
- It would be interesting for the GRAs, rather than saying what they need, to inform the panels on what they have (what EOVs are measured, what technologies are used, etc.).

## 10. Election of Vice Chair

The current Vice Chair, Michelle Heupel is stepping down in order to support other IOC activities. Floor was open for nominations, including self-nominations. Alvaro Scardilli from Argentina was unanimously voted in.

*Resulting action*

Alvaro Scardilli from Argentina was elected as Vice Chair.

## Annex 1: Action List

1. Think about how we can communicate better - including a tool kit for communicating the importance of GOOS but also for improving capacity sharing across the GRAs. **(Secretariat with support from GRAs)**
2. Increase communications across the GRAs and GOOS components- more frequent calls for the purpose of information sharing. Meet intersessionally to advance GRA activities - what is the best way to evolve these conversations from the Forum?
    a. Creation and development of a Linkedin group for the GRAs and/or GOOS community would be part of the current GNFP one. **(Secretariat Communications)**
3. Updating the GRA GOOS website - currently documents and contact information is uploaded to Ocean Expert and linked. **(Secretariat with support from GRAs)**
4. Check to see if it is still a GRA function to propose emerging technologies to be endorsed as a GOOS network by the GOOS OCG eg HF Radar, gliders and Anibos and if it is then to insure that the GRAs are clear of this and aware of what networks are proposed in advance. **(agenda item for upcoming meeting)**
5. Revise and update the GOOS Regional Policy **(Inga, Carl, Alvaro, Michelle**…)
6. Report from the meeting to finalize in next 2 weeks **(Secretariat) Complete**
7. Identify specific collaboration opportunities between GRAs addressing shared challenges, particularly for Small Island Developing States (SIDS). Representatives from various GRAs [Throughout] Regular agenda item (update a spreadsheet as a living document) **Chair**
8. Meeting frequency–quarterly at first to see if it works with rotating times (secretariat to plan times) with a focus area for each **NEXT MEETING WILL BE early Sept 90 mins**
9. Consider providing a different update method than at the quarterly meetings / possibly in connection with a regional meeting / if people are already planning to meet somewhere to try and gather GRAs together **(Secretariat to look at possible upcoming opportunities)**

## Annex 2: List of participants

| Name | Email | Affiliation | Role | Note |
|---|---|---|---|---|
| Alvaro Santiago SCARDILLI | asscardilli@hidro.gov.ar | OCEATL | Participant | In person |
| Alyce Hancock | hancock@soos.aq | SOOS | Speaker | Online |
| Ann-Christine Zinkann | ann-christine.zinkann@noaa.gov | NOAA | Speaker | In person |
| Audrey Hasson | ahasson@geoblueplanet.org | IMDOS | Speaker | In person |
| Belen Martin Miguez | bmartinmiguez@wmo.int | OOPC | Participant | Online |
| Bipen Prakash | bipen.prakash@met.gov.fj | PI-GOOS | Speaker | In person |
| Bruce Howe | bhowe@hawaii.edu | Smart Cables | Speaker | In person |
| Carl Gouldman | carl.gouldman@noaa.gov | US. IOOS | Chair | In person |
| Cheyenne Steinbarger | cheyenne.steinbarger@noaa.gov | TPOS | Speaker | Online |
| Dennis Chang | d.chang-send@unesco.org | IOC | Moderator | In person |
| Emily Smith | e.smith1@unesco.org | IOC/GOOS | Organizer | In person |
| Emma Heslop | e.heslop@unesco.org | IOC/GOOS | Participant | In person |
| Guimei LIU | liugm@nmefc.gov.cn | NEAR-GOOS | Speaker | In person |
| Inga Lips | inga.lips@eurogoos.eu | EuroGOOS | Speaker | In person |
| Jerome Aucan | jeromea@spc.int | PI-GOOS | Participant | In person |
| Jessica Snowden | jessica.snowden@noaa.gov | AtlanOS | Speaker | Online |
| Joanna Post | j.post@unesco.org | IOC/GOOS | Organizer | In person |
| Johannes Karstensen | jkarstensen@geomar.de | Ocean Best Practices | Speaker | Online |
| John Cortinas | john.cortinas@noaa.gov | IOCARIBE-GOOS | Speaker | In person |
| Juliet Hermes | juliet@saeon.ac.za | SAEON | Participant | In person |
| Karen Evans | karen.evans@csiro.au | BioEco Panel | Speaker | In person |
| Kevin O'Brien | kevin.m.o'brien@noaa.gov | NOAA | Speaker | In person |
| Kouadio Affian | k_affian@yahoo.fr | GOOS Africa | Speaker | In person |
| Laura STUKONYTE | l.stukonyte@unesco.org | GOOS | Speaker | In person |
| Leslie Smith | leslie.smith@youroceanconsulting.com | Deep ocean observing strategy | Speaker | In person |
| Lorna Inniss | l.inniss@unesco.org | IOCARIBE | Participant | In person |
| Maciej Telszewski | m.telszewski@ioccp.org | IOCCP Panel | Speaker | Online |
| Michelle Heupel | michelle.heupel@utas.edu.au | IMOS | Vice-Chair | In person |
| Nagaraja Kumar | raja@incois.gov.in | IOGOOS | Speaker | On line |

| | | | | |
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| Sarah Nickford | sarah.nickford@noaa.gov | U.S. IOOS | Speaker | In person |
| Shayla Firzsimmons | shayla.fitzsimmons@cioosatlantic.ca | CIOOS | Speaker | In person |
| Tammy Morris | tamaryn.morris@weathersa.co.za | GOOS Africa | Participant | In person |
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| Bope Bope Lapwong Jean Marie | jmbope2lap@gmail.com | GOOS Africa | Participant | In person |
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| Dava Amrina | dava.amrina@bmkg.go.id | SEAGOOS | Participant | In person |
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| Enric Pallas Sanz | epallas@cicese.mx | US IOOS | Participant | Online |
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The Global Ocean Observing System

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