The Global Ocean Observing System

GOOS Steering Committee Meeting
30 January 2024

Agenda:

13:00-13:30 Welcome and Introductions

13:30-14:30 Updates

1. GOOS
2. Essential Ocean Variable Paper (EOV) Paper and EOV Adoption process (for approval)
3. BioEco Terms of Reference
4. GOOS Projects

14:30-15:00 Planning for April Meeting

Event webpage: https://goosocean.org/event/4069

Welcome to the new Steering Committee Regional Members

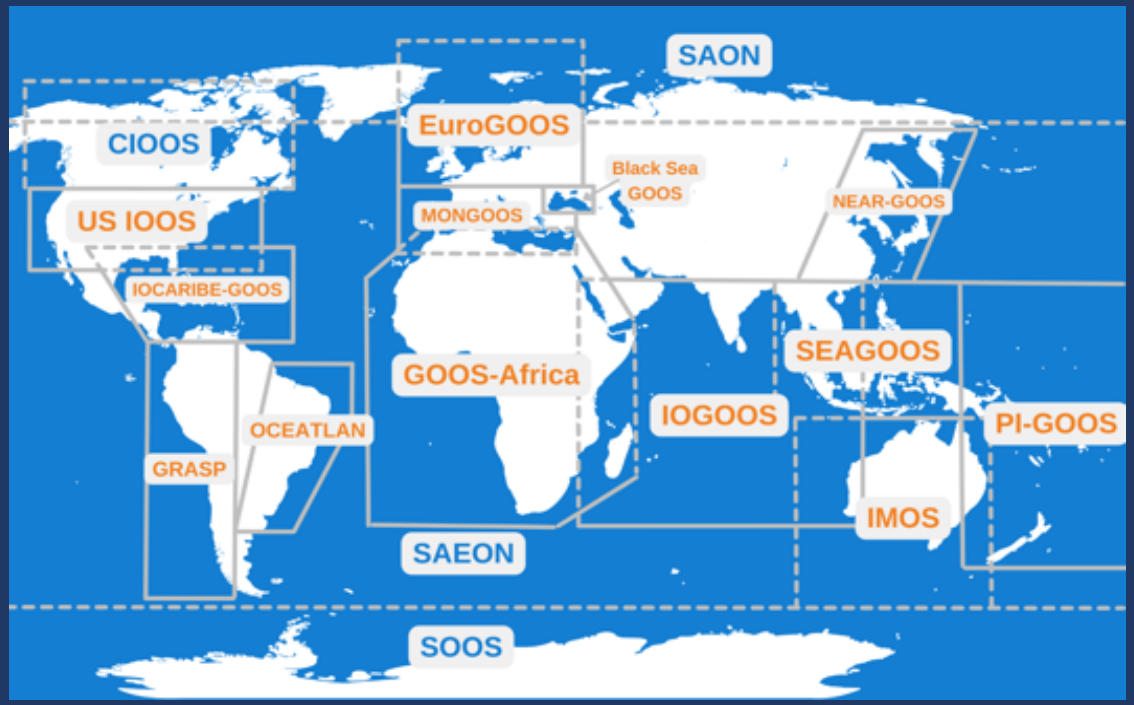
Patrick Gorringe, Region I, Sweden
Vladislav Shaimardanov, Region II, Russia
Matias Sifon, Region III, Chile
Balakrishnan Nair, Region IV, India
Suzan El-Gharabawy, Region V, Egypt

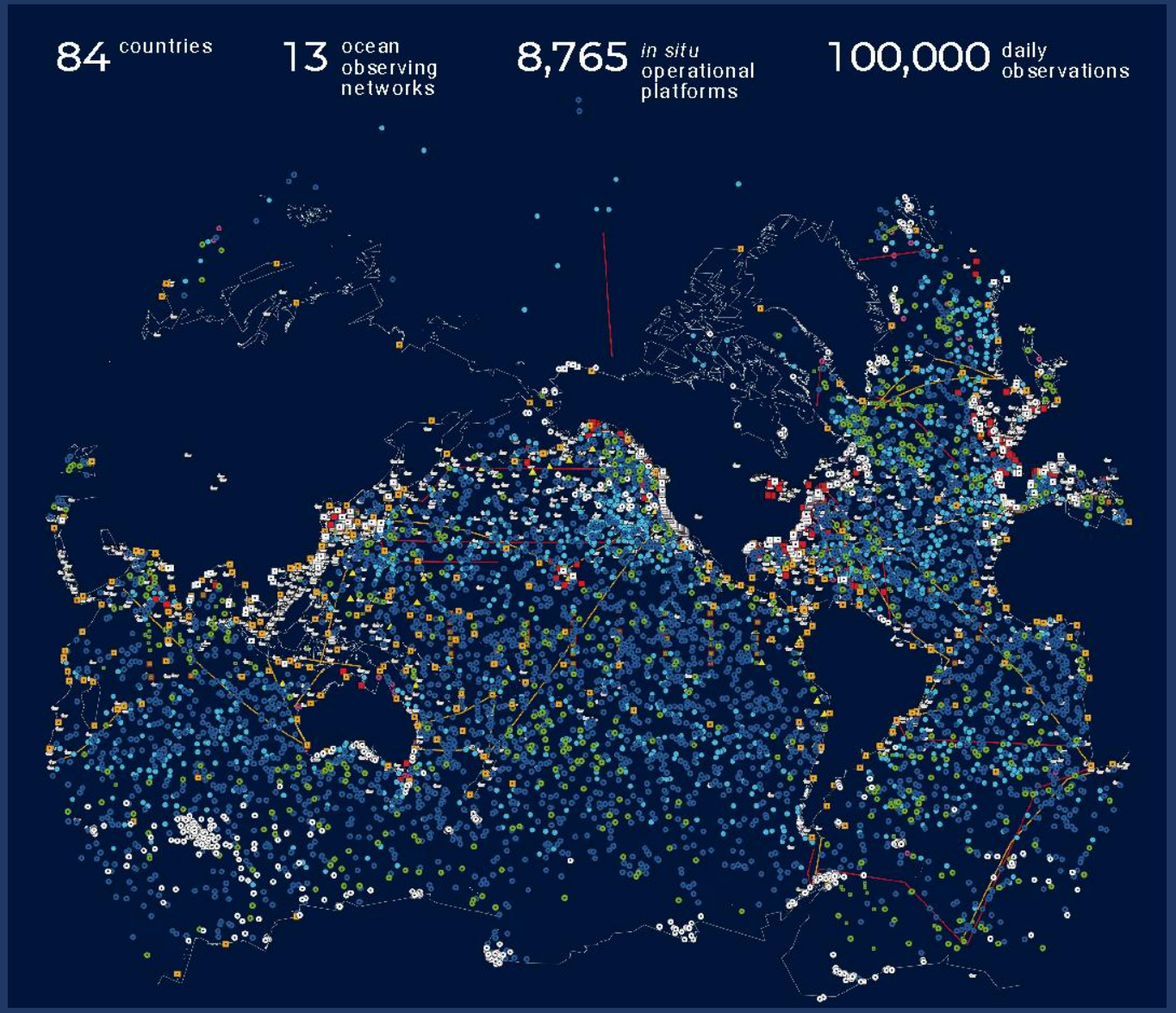
The Global Ocean Observing System

GOOS Progress Report

Joanna Post

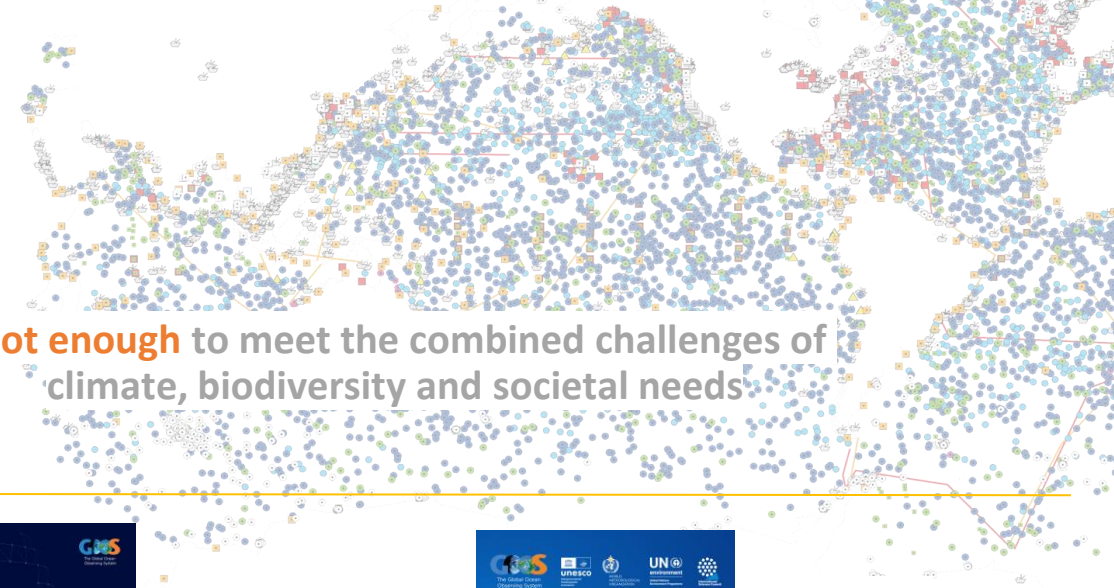
Ocean observing system





GOOS: coordinating and leading the ocean observing community

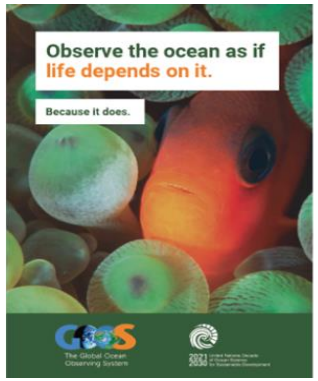
84 countries, **>100,000** daily observations for climate, weather hazards and ocean health



Not enough to meet the combined challenges of climate, biodiversity and societal needs

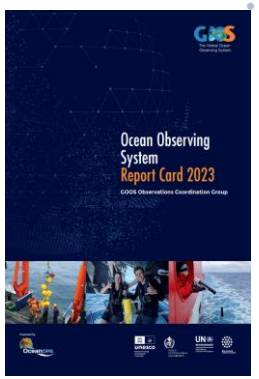
Expanding co-design of the system

3 Transformative Ocean Decade Programmes



Enhancing UN Advocacy

UNFCCC, CBD, UN Ocean Conference

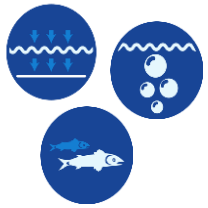


Communicating

GOOS Annual Report Card

Engaging Member States

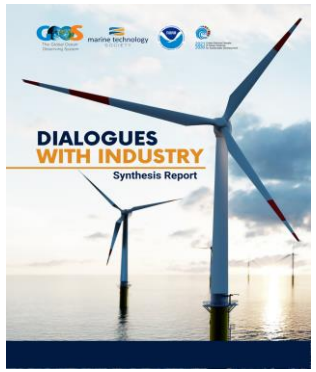
76 GOOS National Focal Points



Ocean best practices

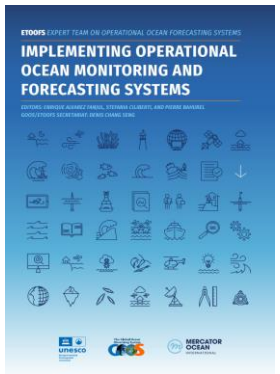
Strengthening structure & standards

34 Essential Ocean Variables & Best Practices



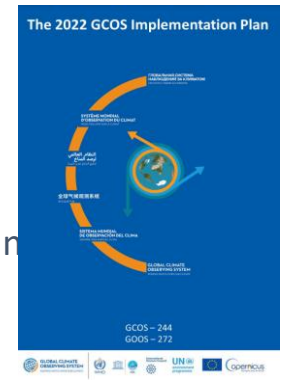
Working with private sector

Dialogues with Industry



Developing forecasting

Guide to Operational Ocean Forecasting Systems



Widening partnerships

Global Climate Observing Implementation (GCOS)

Convention on Biological Diversity

Post-2020 Biodiversity Framework

WORLD METEOROLOGICAL ORGANIZATION

United Nations Climate Change

THE LAW OF THE SEA

Biodiversity Beyond National Jurisdiction

UNEP

International Legally Binding Instrument on Plastic Pollution 2024

SENDAI FRAMEWORK FOR DISASTER RISK REDUCTION 2015-2030

Ecosystem of providers
Observation infrastructure

Ocean observing community, partners

Infrastructure and global coordination

The Global Ocean Observing System

GOOS core and components

Beneficiaries of ocean information

Member states, end-users, investors, the public

Co-design

IOC for Ocean Management

Coastal zone management and adaptation

Marine Spatial Planning/ Sustainable ocean economy

BBNJ, MPAs, reserves, LMEs, heritage sites, UCH

Management of fisheries and aquaculture

Adaptation to and mitigation of climate change, NDCs

Development of national R&D strategies & ocean policies

Real-time oceanographic, weather/climate services

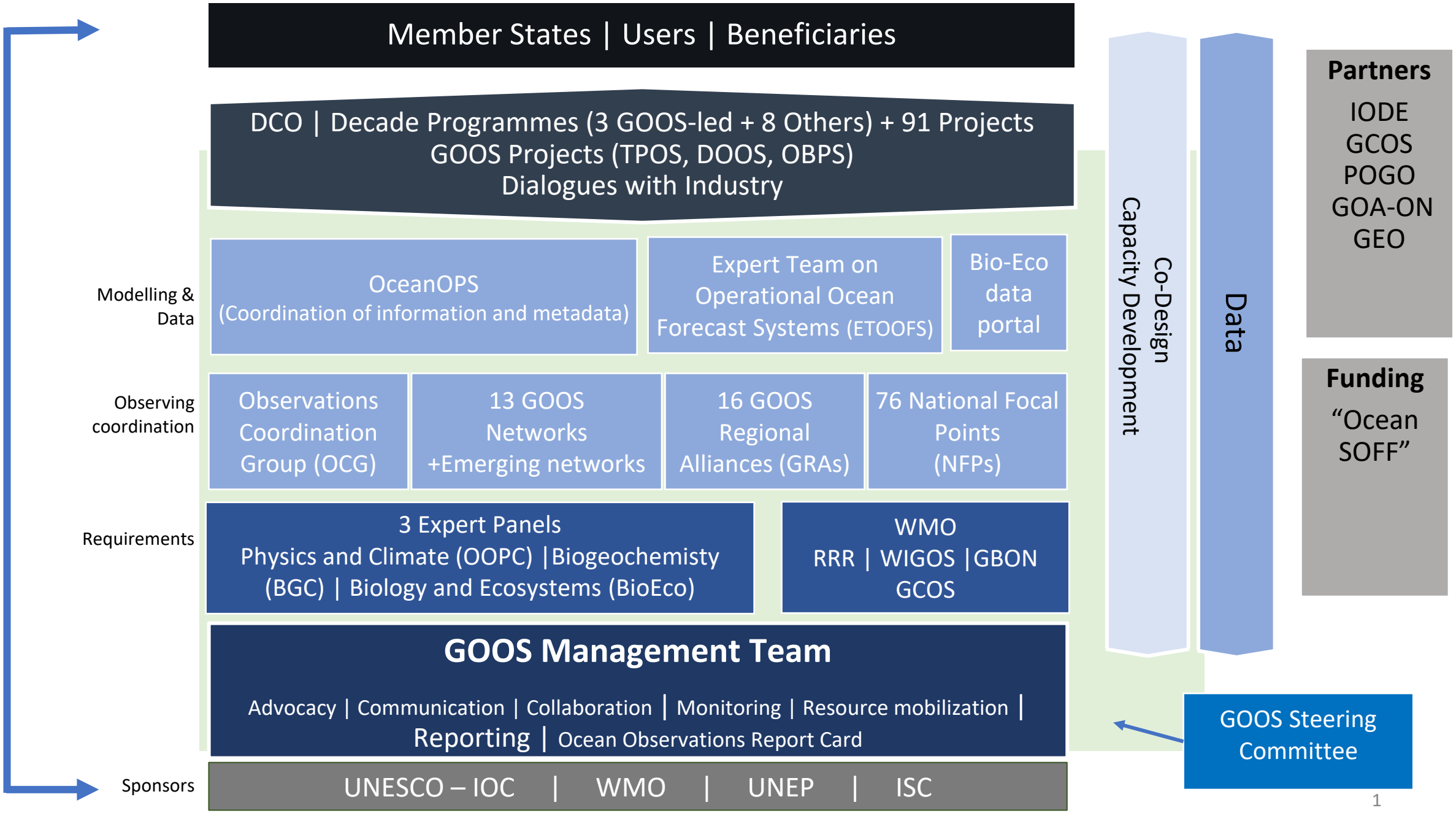
Regional and national capacity development

Early warning systems

GOOS Steering Committee April 2023

Focus areas for the next period:

- Communications and advocacy
- Regional coordination
- UN Ocean Decade - Co-Design
- Evolving GOOS Governance
- Strengthening GOOS management team support is absolutely vital (inc. OceanOPS)
- Integrated cross-GOOS approach to data and metadata
- Enhance collaboration with sponsors, particularly WMO
- Bring more rigour to GOOS project process


Member States | Users | Beneficiaries
DCO | Decade Programmes (3 GOOS-led + 8 Others) + 91 Projects
GOOS Projects (TPOS, DOOS, OBPS)
Dialogues with Industry
Modelling & Data
OceanOPS (Coordination of information and metadata)
Expert Team on Operational Ocean Forecast Systems (ETOOFS)
Bio-Eco data portal
Observing coordination
Observations Coordination Group (OCG)
13 GOOS Networks +Emerging networks
16 GOOS Regional Alliances (GRAs)
76 National Focal Points (NFPs)
Requirements
3 Expert Panels
Physics and Climate (OOPC) |Biogeochemisty (BGC) | Biology and Ecosystems (BioEco)
WMO
RRR | WIGOS |GBON
GCOS
GOOS Management Team
Advocacy | Communication | Collaboration | Monitoring | Resource mobilization | Reporting | Ocean Observations Report Card
Sponsors
UNESCO – IOC | WMO | UNEP | ISC
Co-Design
Capacity Development
Data
Partners
IODE
GCOS
POGO
GOA-ON
GEO
Funding
"Ocean SOFF"
GOOS Steering Committee

1. **Advocacy and Communications - Developing GOOS position as global authority for ocean observation**
   - Talking to Member States – increasing importance and recognition of GOOS
   - Building Funding opportunities with Member States
   - Communications toolkit - develop portfolio of messages for GOOS community representatives
2. **Governance**
   - In accordance with request from Member States and IOC Officers meeting (see next slide)
3. **Core system integration work**
   - Strengthen the system and system identity - what is a GOOS network (socialize the OCG network attributes GCOS-266)
   - Support to our panels and OceanOps to support core work and build GOOS position of authority
4. **Responding to evolving needs from nations, regions and international multilateral agreements**
   - Ongoing activities with NFPs, GRAs
   - ETOOFs (regional training in collaboration with DCC Prediction)
   - Mapping and responding to needs from relevant multilateral agreements (UNFCCC, CBD, BBNJ) and WMO activities (GGGW &EW4All)
   - Responding to GCOS IP requests / GGGW - including global C observing implementation plan
5. **Collaboration – cross panel and with wider observation community**
   - EOV paper
   - Develop Indicators (to respond to GCOS IP and Global Goal on Adaptation/GBF/BBNJ) inc evolving through relevant projects
6. **Ocean Decade – making it work for GOOS**
   - Ensure value chain across Observation / Data / Prediction
   - Provide support to GOOS decade projects – evolve as part of GOOS
7. **Integrated approach to data management (and federation)**
   - Linking with OCG / Ocean Ops / New networks
   - Metadata needs – GOOS Brand
   - Identify Requirements (inc with WMO)
8. **Enhance work with/ to support Member States**
   - Ocean Observations in Area under National Jurisdiction (OONJ)
9. **Enhance collaboration with our sponsors (IOC, WMO, UNEP, ISC)**
   - Exploit opportunities to link into NFP / GRAs and other GOOS activities

Recent IOC Mandates on Governance

- **IOC Decision A-32/4.8.1 GOOS Work Plan for 2024–2025**

- Invites GOOS Sponsors to support evolving GOOS governance that would lead to improved advice and operational support, be inclusive of additional stakeholders, and be open to advice from a process of governance change;

- Requests the Executive Secretary to review progress with reform of GOOS governance to meet the needs of Member States, including any proposed actions or otherwise in response to the nine recommendations of the 'Report of the Study on Support Provided to Global and Regional Ocean Observing Systems' by Neville Smith commissioned by GOOS as referred to in the report of the GOOS Steering Committee Part 1 (SC-10-1 section 4) in 2021, and to report progress to the IOC Executive Council at its 57th session in 2024

Governance Next steps

- Circular letter (CL 2983) sent out for new SC members
  - Letter has been shared with WMO, UNEP and ISC to send out to their constituencies
  - Nominations will be reviews by IOC executive secretary with sponsors
- Executive Secretary Report for EC57 responding to request from Assembly and IOC Officers:
  - ES report to include SWOT and Progress against Neville Smith 9 recommendations
  - Review by sponsors and SC
- Close collaboration with sponsors is vital
- Link into the decade framework / governance
- Potential for Member States to request further evolvement of GOOS governance based on this progress report
- Member states and sponsors must be involved

The Global Ocean Observing System

EOV Paper and EOV Adoption process

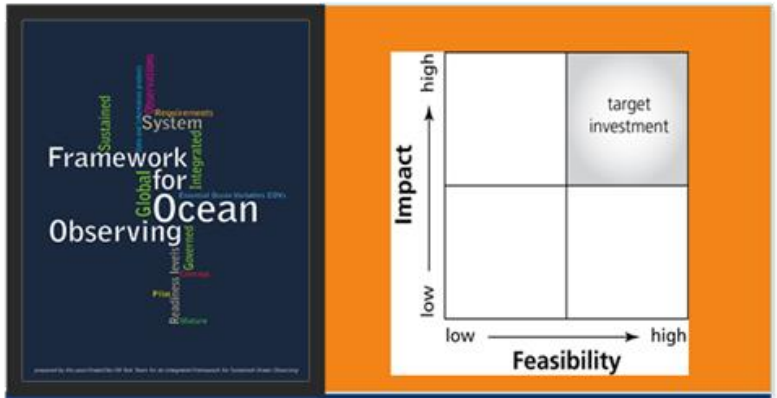
Belén Martín Míguez, Emma Heslop, Artur Palacz and many more co-authors…

Why did we need an EOV paper?

GOOS SC 8 and GOOS SC 9 decisions

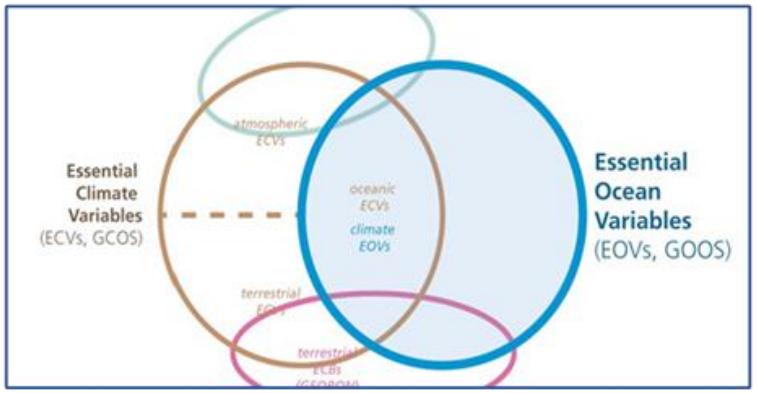
A reference paper was missing

10 year of EOV framework: successful but…



The process is not transparent

- Criteria are clear, but the assessment process isn't



Relationship with other EV frameworks needs clarified & explained

- E.g. overlap and duplication with GCOS ECV framework

Ocean communities inside and outside GOOS are proposing new variables – e.g. OO19

- Can GOOS EOV framework accommodate them all?

A little bit of history

- February 2021… first conversations: the possibility of setting up an EOV TT (with a consultant) was still on the table as well as the need for a new template for the factsheets.
- 2021: Work done at the officers levels (Artur, Lavy and myself)--- we adopted a pragmatic approach and developed the EOV template in coordination with the Wolf and Player. Quite a lot of thinking.
- Jan – April 2022: Again a pragmatic decision: focus on the paper (not on the factsheets). There was already work done (Maria Hood, B.Sloyan, several relevant working documents and reports from workshops). General acceptance first outline…
- April 2022: First time that the "EOV paper project" is presented to GOOS SC, **initial draft shared**. Ask for volunteers…
- May 2022: first consolidated draft with Figures etc.
- July 2022- December 2022 - Several rounds with Emma to improve the paper. Idea of the "satellite EOV sets"
- February 2023 – Consolidated **draft shared with GOOS Exec** and comments received. Satellite EOV sets idea discarded.
- April 2023 – Presentation at GOOS Exec (Halifax) and discussion.
- April and May 2023 – Presentation of EOV paper at DOOS and OCG meetings. Volunteers to participate.
- July 2023 – GOOS Exec: we discussion the EOV paper again and the plan to get to a final version including with whom to engage
- August 2023 – **Draft shared with GOOS Exec**
- September 2023 – **Draft shared with other communities** who showed interest: OCG, BioEco; also shared with colleagues who had provided material that we used (e.g. Maria Hood, B. Sloyan, Albert Fischer) --- There are 23 co-authors right now

Many thanks to all the contributors!

What the paper does…

1. **Takes stock:** we did not have a reference paper describing the GOOS EOVs, now we have it

2. Makes the process **more transparent**: by proposing an adoption process of new EOVs

3. **Sets the limits** between GOOS EOVs **and other sets of variables and indicators**

4. Suggests several areas for **improvement**

EOV Adoption process for GOOS EOVs

Implications:

- The proponents need **to follow the guidelines**, justify their proposals and define requirements.
- There is an **open review** process where community feedback is gathered
- The process establishes that **panels should not work in isolation**, but that mutual awareness should be guaranteed
- **GCOS SC is the final approver**, but there are cross-panel consultations too.
- The proponents must **commit to taking care of the specification shee**ts and definition of requirements, including updates

Adoption process for GOOS EOVs

1. The proposal shall be put forward by a group of experts representing a community to the relevant GOOS Expert Panel(s) under which the EOV will be managed.

2. The proposal shall justify why the EOV should be adopted, demonstrating:

    I. that the systematic and sustained observation of the EOV at a global scale is technically, politically and economically feasible using proven, scientifically understood and ethical methods;

    II. that the systematic and sustained observation of the EOV at a global scale will improve the understanding of ocean phenomena with relevance for at least one of the GOOS overarching societal benefits areas: climate, weather and hazard warnings, and ocean health. The EOVs need to address the needs of users, whether from science, government or the private sector, and the justification for observing the EOV must be supported by the broader community as detailed in articles, reports from expert meetings or workshops etc.;

    III. that the EOV is essential to address a societal problem and/or understand certain phenomena (i.e. they cannot be replaced by another variable(s), and they belong to the minimum set of variables needed to address the problem and/or observe the phenomena)..

Adoption process for GOOS EOVs

4. The proposal will consist of a 2–3-pages report and a completed specification sheet to be considered by the GOOS Expert Panel(s) under which the EOV will be managed.
    - The report shall provide the background for the proposal, including the justification mentioned in point 2.
    - The report will specify what sub-variables constitute the EOV.
    - The specification sheet shall define the observational requirements for the collection of sub-variables that constitute the EOV (see template).
5. The proponents of the new EOV will be invited to give a presentation to the relevant GOOS Expert Panel(s).
6. After a public announcement, the proposal will be open for public review announced via the GOOS website for at least 2 months. The responsible GOOS Expert Panel(s) will consider the comments received during the public review.
7. The GOOS Expert Panel(s) will then have up to 6 months to evaluate the pertinence of the proposal and, if accepted, categorise the variable as concept, pilot or mature.

Adoption process for GOOS EOVs

8. The lead Panel(s) will provide a written justification of their evaluation and categorisation to the proponents and to GOOS Steering Committee.

    - If the variable is considered to be concept or pilot, the justification will specify what aspects must be further developed to reach maturity. Concept and Pilot EOVs can still be noted in the GOOS EOV framework and be worked on towards reaching maturity and resubmitted when this has been achieved.

    - If the variable is considered to be mature, and under the guidance of the Expert Panel/s, the proponents will be invited to present the EOV to the GOOS Steering Committee who will ultimately take the decision on the final incorporation of the variable to the GOOS EOV list.

9. When the GOOS Steering Committee approves the adoption of an EOV as mature, the proponents must commit to maintaining and updating the specification sheets for that EOV in coordination with the relevant GOOS Expert Panel(s) and GOOS Secretariat to ensure that the EOV continues to be effective.

10. Additions of one or more new EOV sub-variables to an existing EOV will be the responsibility of the relevant GOOS Expert Panel(s) in charge of the EOV, who will approve or not those additions. The relevant GOOS Expert Panel(s) will inform the other panels about those additions for their awareness and opinion.

The Global Ocean Observing System

BioEco Terms of Reference Adoption

Karen Evans and Gabrielle Canonico

The Global Ocean Observing System

GOOS Project Review Update

Emily Smith

Reasoning behind review

1. *Responding to Strategic Plan:*
   SYSTEM INTEGRATION AND DELIVERY
   Deliver an integrated, ‘fit-for-purpose’ observing system built on the systems approach outlined in the Framework for Ocean Observing
   BUILDING FOR THE FUTURE
   Building for the future through innovation, capacity development, and evolving good governance

1. GOOS Structure Strategy

What is a Project?

GOOS Projects are aimed at filling ***identified gaps*** in the system. They may be **Development Projects** with a broad scope covering requirements, observations, and data systems universally relevant to GOOS, with a geographic or thematic focus; or **Pilot Projects** focused on specific areas or systems to improve readiness for sustained observations

SC-10

1. **Request** that Projects work in the GOOS planning process to capture key actions, intersections, and boundaries with Core Team components in the GOOS Implementation Plan, identifying outputs, impacts, and resourcing needs; and that these identify they key value and plans for how the projects innovate, changing and improving GOOS. [do projects need a forum as ongoing touchpoint for engagement with the rest of GOOS?]
2. **Work** with the Projects that have a regional scope (TPOS 2020, AtlantOS) and the GRAs to define the best levels of interaction with global observing networks and national systems, starting with workshop, and feeding into the structure/governance evolution work. Include some consultation with other regional governance systems: Regional Seas, LMEs, RFMOs, IOC and WMO regional structures].

Projects currently

TPOS—10 years
Best Practices—5 years
AtlantOS—3 years
DOOS—7 years
Smart Cables—NEW
IMDOS—NEW

What is missing?

1. Timelines and measurable milestones
2. Coordination or integration with other parts of GOOS
3. Promotion of Projects by GOOS (including SC)

Possible Timelines

Typical Timeline for Developmental	present idea to GOOS	workplan and potential funding reported	GOOS makes decision	Annual reporting on progress	acquire sustained/long-term funding from several partners	GOAL
	0 months	6 months-1 year	1-1.5 year	2-9 years	NLT 10years??	Transition to OCG
Typical Timeline for Pilot	present idea to GOOS	workplan and potential funding reported	GOOS makes decision	Annual reporting on progress	Goal	
	0 months	6 months-1 year	1-1.5 year	2-5 years	Turn information over to sustained systems for incorporation	

Next steps

Questions for SC and Panels to respond
Draft policy for Director to review and update at SC in April

Discussion for April meeting

Suggested ideas
Barcelona, Spain April 14-17, 2024

Day 1
New members introduction
Updates on GOOS strategy objectives and from sponsors

Day 2
Discussions on strengthening engagement (inc through guidelines) and building for the future across GRAs, projects, national focal points and networks

Day 3
Positioning and integrating the Ocean Decade and GOOS to build opportunities and synergies