Global Ocean Observing System

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2. Update from GRAs - Summary of Reports

Description: *This report aims to capture the current status of individual GRA. It invites basic information on the GRA (Section 1), an overview of its role and linkages (Section 2), a snapshot of key achievements in 2024–2025 (Section 3), a simple self-assessment of EOV measurements (Section 4), and a forward look at plans and support needs for 2026–2027 (Section 5). The template provides a common structure to support consistent inputs across regions.*

Also, the purpose of this document is to have a comprehensive tool for reporting to the GOOS Steering Committee and to sustain an updated and collaborative mechanism between GRAs. It is expected for individual GRA to report annually on Sections that have relevant information to be known by the GRA Council and the GOOS Steering Committee.

GRAs are encouraged to complete it to the best of their ability, gathering information from all members of the organization.

Global Ocean Observing System

GRA Report

2024-2025

Section 1: Basic information

Section 2: GRA Overview

Section 3: Achievements since last GRA Forum (April 2024)

Section 4: Essential Ocean Variables (EOVs) Measurement

Section 5: Planning and Support

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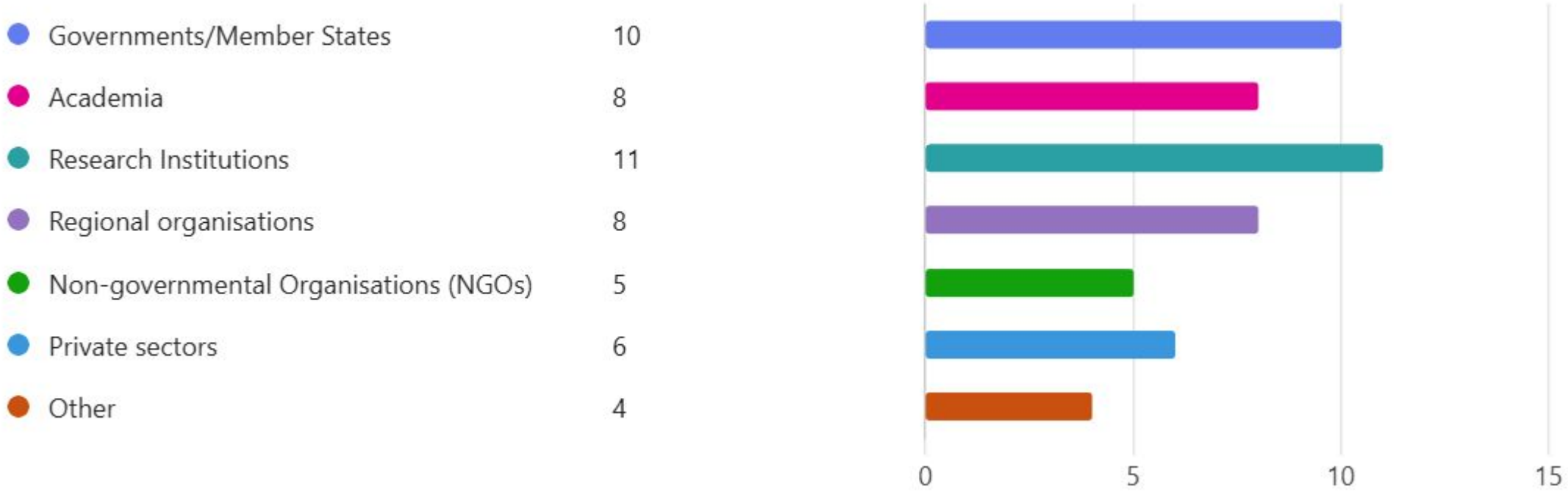
Vision and Mision

GRA	Vision	Mision
IMOS	Australia's healthy oceans, thriving blue economy, and climate actions	Supporting solutions to environmental, climate, social and economic challenges
IOCARIBE GOOS	Deliver a comprehensive, interoperable ocean observation system to support early warning and sustainable development	
CIOOS	Connections for a sustainable ocean future	Foster partnerships and grow a powerful online platform that generates information, knowledge, and place-based solutions
PIGOOS	Raise awareness of and support ocean observing systems in the Pacific Islands, identify and address gaps in the Pacific Ocean observing network, and ensure Pacific observations contribute to and benefit from the GOOS.	
OCEATLAN	Planning and implementation of an operational system aimed at monitoring and studying oceanic processes in the South and Tropical Atlantic Ocean.	
GOOS Africa	Harnessing ocean Observation to protect Africa's coasts, empower communities, and unlock sustainable blue economy opportunities	
NEARGOOS	Regional implementation arm of GOOS, connecting global strategy with local requirements to deliver a responsive and inclusive ocean observing system.	
GRASP	Integrates operational data and product systems to mitigate climate change, protect ocean health, and contribute to sustainable growth and development.	Promote operational oceanography and marine meteorology in the Southeast Pacific region, using a regional network to acquire, integrate, and distribute systematic ocean obs.
IOGOOS	Developing programmes for the implementation of GOOS in the Indian Ocean, to address the shared challenges faced by our member countries around the Indian Ocean rim.	
EuroGOOS	Sustained Ocean Observing and operational oceanography services that benefit the European society.	To lead the development and implementation of sustained and coordinated operational oceanography across Europe.
IOOS	Ocean, coastal, and Great Lakes information that improves lives and livelihoods.	To produce, integrate, and communicate high quality ocean, coastal and Great Lakes information.
SOOS	Sustained observations of dynamics and change of the physics, chemistry, biology and geology of the SO.	Facilitate the sustained collection and delivery of essential observations of the SO to all stakeholders.

Affiliated organisations and agencies of the GRA



- GRAs are composed of **national research institutes, hydrographic offices, meteorological agencies, universities, and regional organizations**.
- Some alliances are hosted by **regional intergovernmental bodies** .
- Membership typically includes **government agencies and scientific institutions**.

How does the GRA connect to GOOS National Focal Points (NFPs) in the respective countries?

- Several GRAs have **direct involvement of NFPs** in governance or working groups.
- In some regions:
  - NFPs **serve as GRA representatives or delegates**.
  - Engagement occurs through **national ocean agencies or committees**.
- Some regions **lack formally designated NFPs**, creating coordination challenges.

SOOS is predominantly connected with National Antarctic Programs which vary to the GOOS focal points who have more temperate latitude focus. However, SOOS has a strong connection and collaboration with IMOS

I am also the National Focal Point.

Several of the technical experts on the working group are not GOOS focal points, and we are working to make the connections in each country

Most of the GOOS NFPs from Europe are members of EuroGOOS and sit on the EuroGOOS General Assembly and various committees

We haven't yet connected to any National Focal Points of GOOS

maintain close communication through their respective NFPs

Currently, there are no designated GOOS NFPs in the PIGOOS membership. Engagement with national priorities occurs through other established mechanisms

Strategic documents of the GRA

Typical documents

- **Strategic plans (multi-year)**
- **Implementation or action plans**
- **Terms of reference / MoUs**
- **Data policies**

46 documents were described and linked

IMOS	IMOS Strategy 2025-2035. https://imos.org.au/about/strategy-and-plans/imos-strategy IMOS Five Year Plan 2022-2027. https://imos.org.au/about/strategy-and-plans/imos-five-year-plan-2022-2027
IOCARIBE GOOS	Terms of Reference that include goals and objectives, Ocean Decade project document, Proposal to the Caribbean Development Bank for funding the Ocean Glider Caribbean project, CoastPredict Concept Note, AAORIA Beacons Plus approved proposal
CIOOS	CIOOS 2026-2031 Strategic Plan will soon be published, however, the previous 2021-2026 Strategic Plan can be found here https://cioos.ca/strategic-plan/ CIOOS Data Management Plan (DMP) template can be found here https://guide.cioos.ca/latest/en/pgd/pgdcioos/
PIGOOS	SPC's broader Strategic Plan 2022-2031 (https://www.spc.int/strategic-plan) provides the overarching institutional framework. Pacific Islands Meteorological Strategy (PIMS) 2017-2026 (https://www.pacificclimatechange.net/document/pacific-islands-meteorological-strategy-2017-2026-sustaining-weather-climate-water-and): Provides the overarching framework for ocean services in the region, directly guiding PIGOOS's alignment with national meteorological and ocean service priorities. SPC Geoscience, Energy and Maritime (GEM) Division Business Plan (https://gem.spc.int/about/business-plan): Guides the work of the host
OCEATLAN	Implementation Plan (last revision/update December 2024) Letter of Intent (last revision/update December 2024) Action Plan (last revision/update December 2024)
GOOS Africa	1- (MOU) is currently under review and undergoing revision 2- Mandate Building up the African Critical Integrated Infrastructures and Human Capital for Ocean Observations, Forecasting, and Predictions Services for a Robust Blue Economic for Society and People as a contribution to the relevant African Agendas and Conventions, and international frameworks. GOOS-AFRICA is first and foremost the African Union Framework for a united integration of African Oceans and Coasts through ocean sciences, observations, monitoring, forecasting and predictions services for sustainable development in Africa. With the establishment of the IOCAFRICA Sub-Commission, GOOS-AFRICA contributes to its operationalization from inception, achieving its institutional building for a robust sustainability. Objectives: GOOS AFRICA aims to provide Ocean and Coastal Services to Africa, including: • Effective management of coastal environments and resources • Controlling pollution and safeguarding human health • Supporting expansion of economic activities in the coastal and offshore areas • Protection of the growing coastal populations and infrastructure, especially in the Great Harbour Cities of Africa • Effective management of living marine resources • Mitigation of natural disasters and extreme events and the impacts of climate change • Promoting operational oceanography with a multi-modular mechanism including stand alone and interconnected work packages. • In-situ observing stations in the coastal areas • Satellite remote sensing of marine and coastal environments • Ocean data assimilation, modelling & forecasting • End-to-end communications & information delivery systems • Strategic Business and Industry Partnerships Project management integration and coordination. 3- Action plan: is currently under review and undergoing revision 4- GOOS Africa does not have its own data policy. However, the affiliated institutions each have their own data policies 5- Each of the five working groups has been requested to develop its own work plan
NEAR-GOOS	The following are the most recently updated strategic and governing documents for NEAR-GOOS:

Name	Responses
	1. Strategic Plan * Title: A Strategic Plan for NEAR-GOOS in its Second Phase (GOOS REPORT NO.166) * Date: 2008 * link: https://ds.data.jma.go.jp/goos/data/rrtdb/documents.html 2. Data Policy & OperationsTitle: NEAR-GOOS Operations ManualRelevant Info: Details the data exchange protocols and roles of the Regional Real Time Data Base (RRTDB) and Regional Delayed Mode Data Base (RDMDB).Link: https://ds.data.jma.go.jp/goos/data/rrtdb/documents.html d
GRASP	Terms of Reference for GRASP (Términos de Referencia de la GRASP) https://archivo.cpps-int.org/index.php/s/jjNDt7jQcpY14Cb Strategic Plan 2026 - 2030 (Plan Estratégico 2026 - 2030) https://archivo.cpps-int.org/index.php/s/YZUY7NFiJCPKUfA
SEAGOOS	-
IOGOOS	IOGOOS Strategic documents: https://incois.gov.in/IIW/IOGOOS/home.jsp (Strategy Tab) IOGOOS Meeting documents: https://incois.gov.in/IIW/IOGOOS/meetings.jsp IOGOOS Revised MoU: https://incois.gov.in/documents/iogoos/pdfs/Revised_IOGOOS_MOU_IOGOOS20-Amendment.pdf
EuroGOOS	A selection of EuroGOOS Strategic Publications: • Affordable Technologies for Marine Observation: Low-Cost and Cost-Effective Approaches. EuroGOOS White Paper (2026) https://zenodo.org/records/18679671 • Ocean Literacy: The Foundation for the Success of the Ocean Decade, Volume I Transforming Education, Research, and Engagement – EuroGOOS Chapter 'Scientists for Ocean Literacy' (14 co-authors from 8 EuroGOOS Member Organisations) https://link.springer.com/book/9783031981449 • EOOS Technology Forum (2025) "Catching the momentum in ocean observing technology: optimising value and data provision" https://www.eoos-ocean.eu/events/eoos-technology-forum-2024/ • EuroGOOS UNOC-3 Voluntary Commitment (2025) https://sdgs.un.org/partnerships/eurogoos-voluntary-commitment-strengthening-ocean-observing-data-integration-and-ocean • EOOS Strategy 2023-2027 https://eurogoos.eu/documents/strategic-documents/ • EOOS Implementation Roadmap 2023-2027 https://eurogoos.eu/documents/strategic-documents/ • EuroGOOS Data Policy (2023) signed by all members EuroGOOS Data Policy 2023. • EuroGOOS International Conference Proceedings (triannual conference serving as a milestone for European operational oceanography with a strong global outlook) https://eurogoos.eu/documents/conference-and-workshops-proceedings/

Name	Responses
	(latest 2023 setting out the vision for the community in the Conference statement) • EuroGOOS 2030 Strategy (2021) https://eurogoos.eu/documents/strategic-documents/ • Ocean Literacy in European Oceanographic Agencies: EuroGOOS Priorities for the Ocean Decade. EuroGOOS Policy Brief. (2021) https://eurogoos.eu/documents/strategic-documents/ • EuroGOOS White Paper on Ferry Box observations (2017) https://eurogoos.eu/documents/strategic-documents/ EuroGOOS in Community papers (selected publications): • Towards a sustained and fit-for-purpose European ocean observing and forecasting system (2024) https://eurogoos.eu/documents/scientific-papers/ • The role of the marine research infrastructures in the European marine observation landscape: present and future perspectives (2023) https://eurogoos.eu/documents/scientific-papers/ • The Mediterranean Sea we want (2021) https://eurogoos.eu/documents/scientific-papers/ • Operational Modeling Capacity in European Seas: A EuroGOOS Perspective and Recommendations for Improvement (2020) https://eurogoos.eu/documents/scientific-papers/ • The Role of Stakeholders in Creating Societal Value From Coastal and Ocean Observations (2019) https://eurogoos.eu/documents/scientific-papers/ • An Integrated All-Atlantic Ocean Observing System in 2030 (2019) https://eurogoos.eu/documents/scientific-papers/ • • What We Have Learned From the Framework for Ocean Observing: Evolution of the Global Ocean Observing System (2019) https://eurogoos.eu/documents/scientific-papers/
IOOS	ICOOS Act - US IOOS authorizing legislation was passed in 2009 and the Coordinated Ocean Observations and Research Act of 2020 (P.L. 116-271), signed on December 31, 2020, reauthorizing the Integrated Ocean Observing System (IOOS): https://www.congress.gov/bill/116th-congress/senatebill/914 U.S. IOOS Strategic Plan 2022-2025: https://cdn.ioos.noaa.gov/media/2022/06/V2.1-IOOS-Strategic-Plan-2022-.pdf IOOS Implementation Plan – "U.S. IOOS Blueprint for Full Capability, Version 1.0" (November 2012) https://cdn.ioos.noaa.gov/media/2017/12/us_ioos_blueprint_ver1.pdf IOOS Development Plan – "The First U.S. Integrated Ocean Observing System (IOOS) Development Plan" (January 2006) https://cdn.ioos.noaa.gov/media/2017/12/ioos_devplan.pdf

Communication tools of the GRA

Main communication channels

- Official **websites and data portals**
- **Newsletters and mailing lists**
- **Social media platforms**
- **Annual meetings and reports**
- Dedicated **communication officers or contact points** in some GRAs.

GRA	Communication tools
IMOS	https://imos.org.au/
IOCARIBE GOOS	https://iocaribe.ioc-unesco.org/en/IOCARIBEGOOS
CIOOS	https://www.linkedin.com/company/cioos-siooc/
PIGOOS	https://www.spc.int/pigoos
OCEATLAN	http://www.oceatlan.org/
GOOS Africa	https://goosafrica.appli.edu.ci/
NEARGOOS	https://goosocean.org/who-we-are/goos-regional-alliances/gra-near-goos/
GRASP	https://cpps-int.org/index.php/grasp-inicio
IOGOOS	https://incois.gov.in/IIW/IOGOOS/home.jsp
EuroGOOS	https://eurogoos.eu/
IOOS	https://ioos.noaa.gov/
MonGOOS	https://mongoos.eurogoos.eu/
SOOS	https://soos.aq/
SAEON	https://egagasini.saeon.ac.za/ https://smcri.saeon.ac.za/ https://www.sapri.ac.za/

Primary financial sources of the GRA

Funding patterns

- National government funding
- Membership contributions
- Regional or international projects
- In-kind contributions from member institutions
- Research grants and partnerships.

Contribution/Integration to the Global Ocean Observing Networks

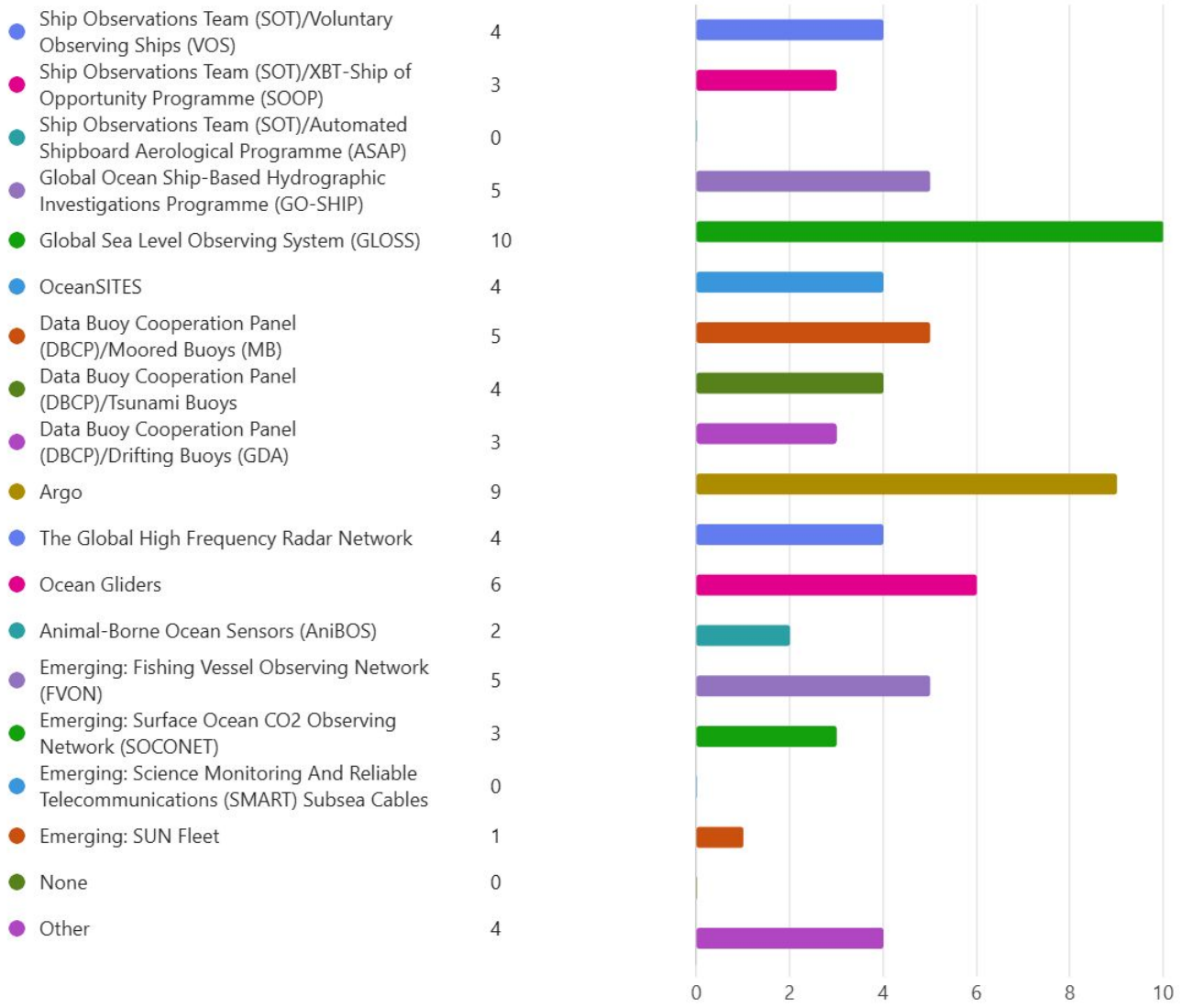
GLOSS: 10 GRAs

ARGO: 9 GRAs

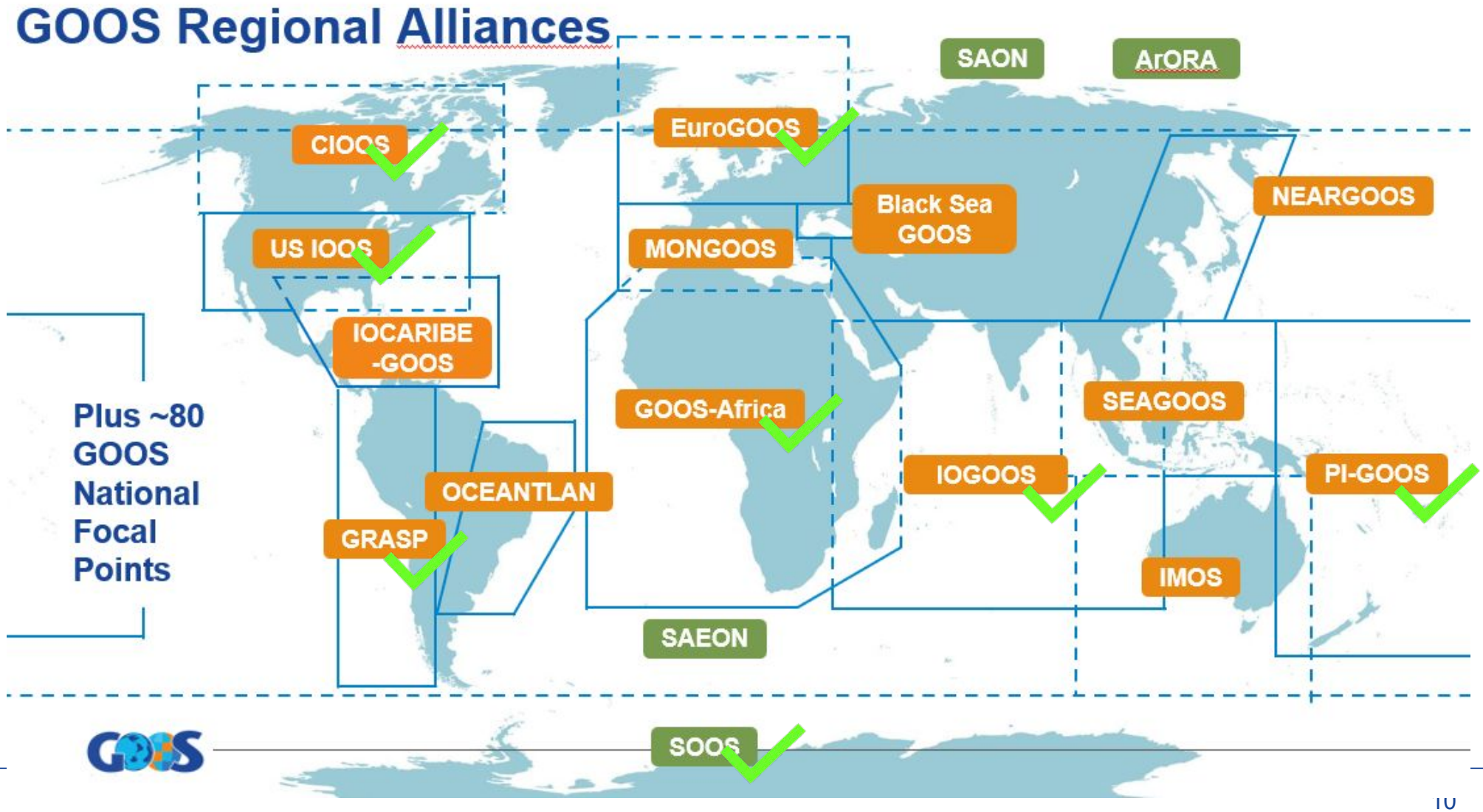
Ocean Gliders: 6 GRAs

GO-SHIP / FVON: 5 GRAs

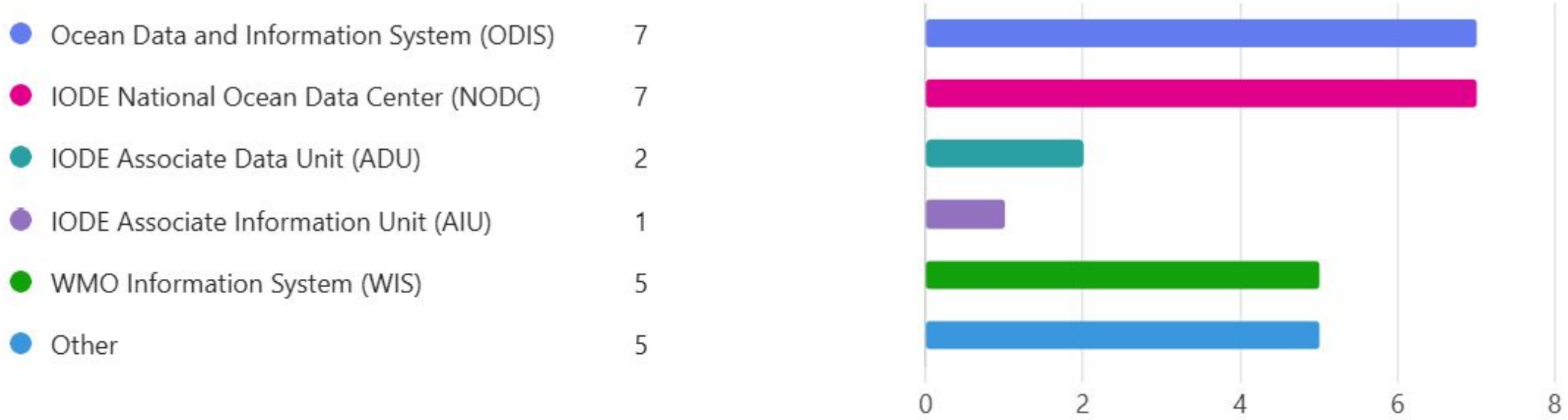
ASAP / SMART Cables / None: 0 GRAs



Any other ocean observation projects and activities uniquely conducted by the GRA?



Contribution of data at local/national/regional/global level

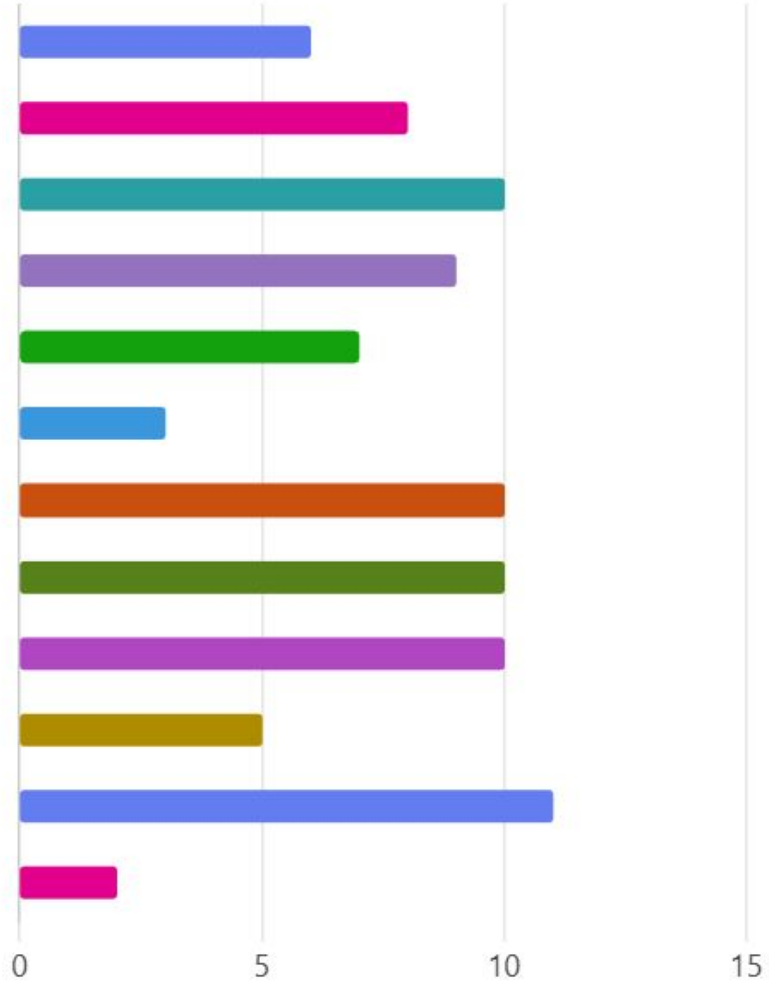


Key points

- Data shared at **local, national, regional, and global levels**.
- Many GRAs operate **regional data portals or repositories**.
- Increasing adoption of **open data and interoperability standards**.

In what areas (checklist is below) does the GRA enable co-designed/co-produced ocean observing solutions?

Biodiversity conservation	6
Sustainable fisheries	8
Coastal resilience	10
Climate resilience mitigation and adaptation	9
Sustainable ocean planning	7
Marine carbon capture and storage	3
Safety of life at sea	10
Coastal hazard warnings	10
Disaster risk reductions	10
Human health	5
Ocean science	11
Other	2



Please list new Best Practice documents completed in 2025 (and submitted to the OBPS)

IMOS: IMOS Animal Tagging QA/QC document IMOS Fishing Vessels as Ships of Opportunity (FishSOOP)

GRASP: Several Best Practice documents were developed or finalized during 2025 within the framework of GRASP technical activities and regional expert groups. However, these documents have not yet been formally submitted to OBPS. The Secretariat is currently reviewing and consolidating these materials to facilitate their future submission and broader dissemination through OBPS.

EuroGOOS:

- A strategy forward document describing the way forward towards an integrated EU Research Infrastructure. MINKE Deliverable D1.3.
- Report on the statuses of harmonization and interoperability in the current Calibration-Validation landscape for ocean variables (D2.4), Version 1.0.
- Recommendation Report 2 on improved common procedures for HFR QC analysis. JERICO-NEXT WP5-Data Management, Deliverable 5.14, Version 2.0.
- An ocean practices maturity model: from good to best practices.
- Promoting best practices in ocean forecasting through an Operational Readiness Level.

Best Practice documents completed in 2025

IMOS Animal Tagging QA/QC document IMOS Fishing Vessels as Ships of Opportunity (FishSOOP)

Several Best Practice documents were developed or finalized during 2025. Not yet been formally submitted to OBPS.

Integrated EU Research Infrastructure. MINKE Deliverable D1.3.

Report in the current Calibration-Validation landscape for ocean variables (D2.4), Version 1.0.

Recommendation Report 2 on improved common procedures for HFR QC analysis.

An ocean practices maturity model: from good to best practices.

Promoting best practices in ocean forecasting through an Operational Readiness Level.

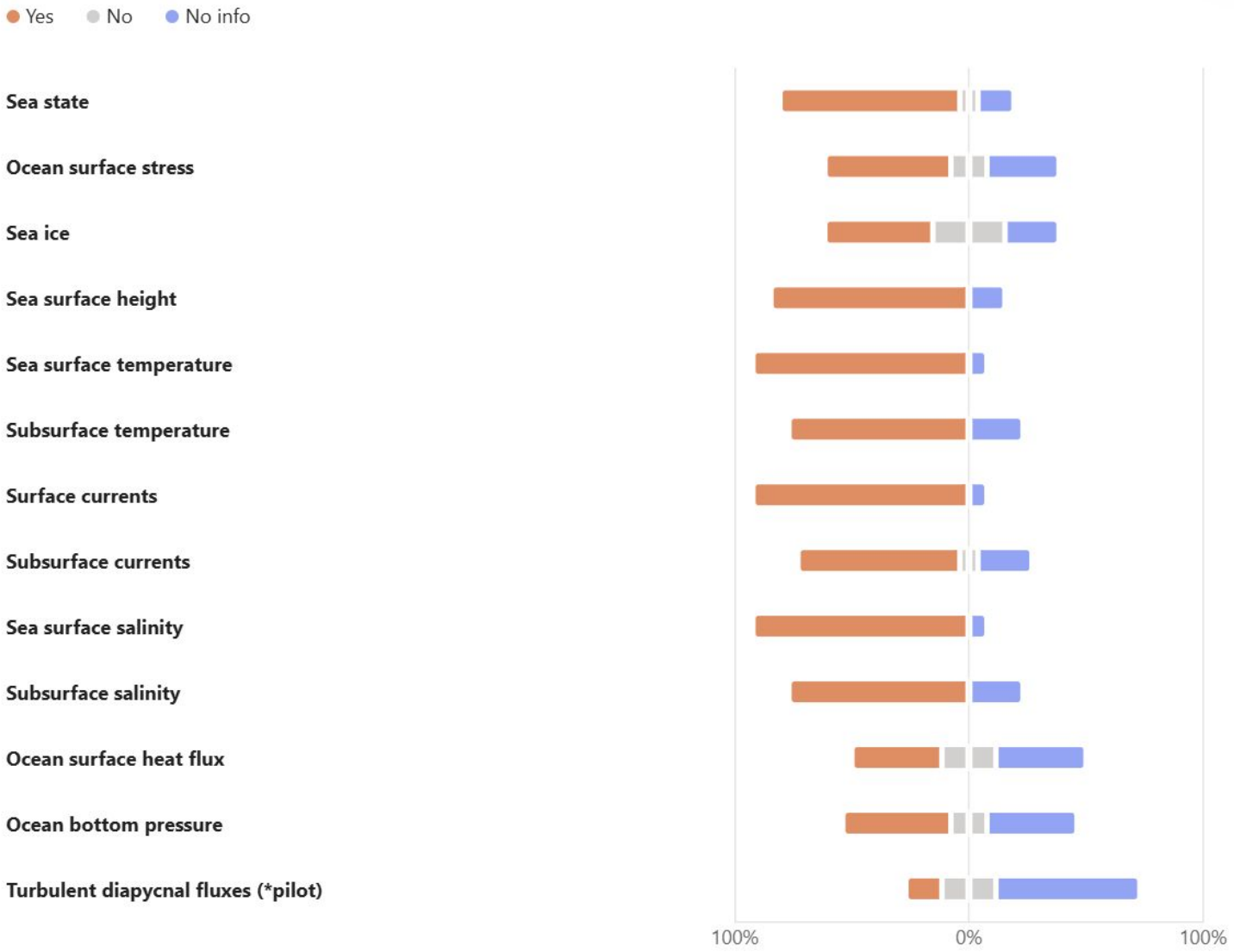
A Brief Guide to Publishing Data for the Polar Research Community – not submitted to the OBPS

Capacity Building and Knowledge Sharing

Main activities

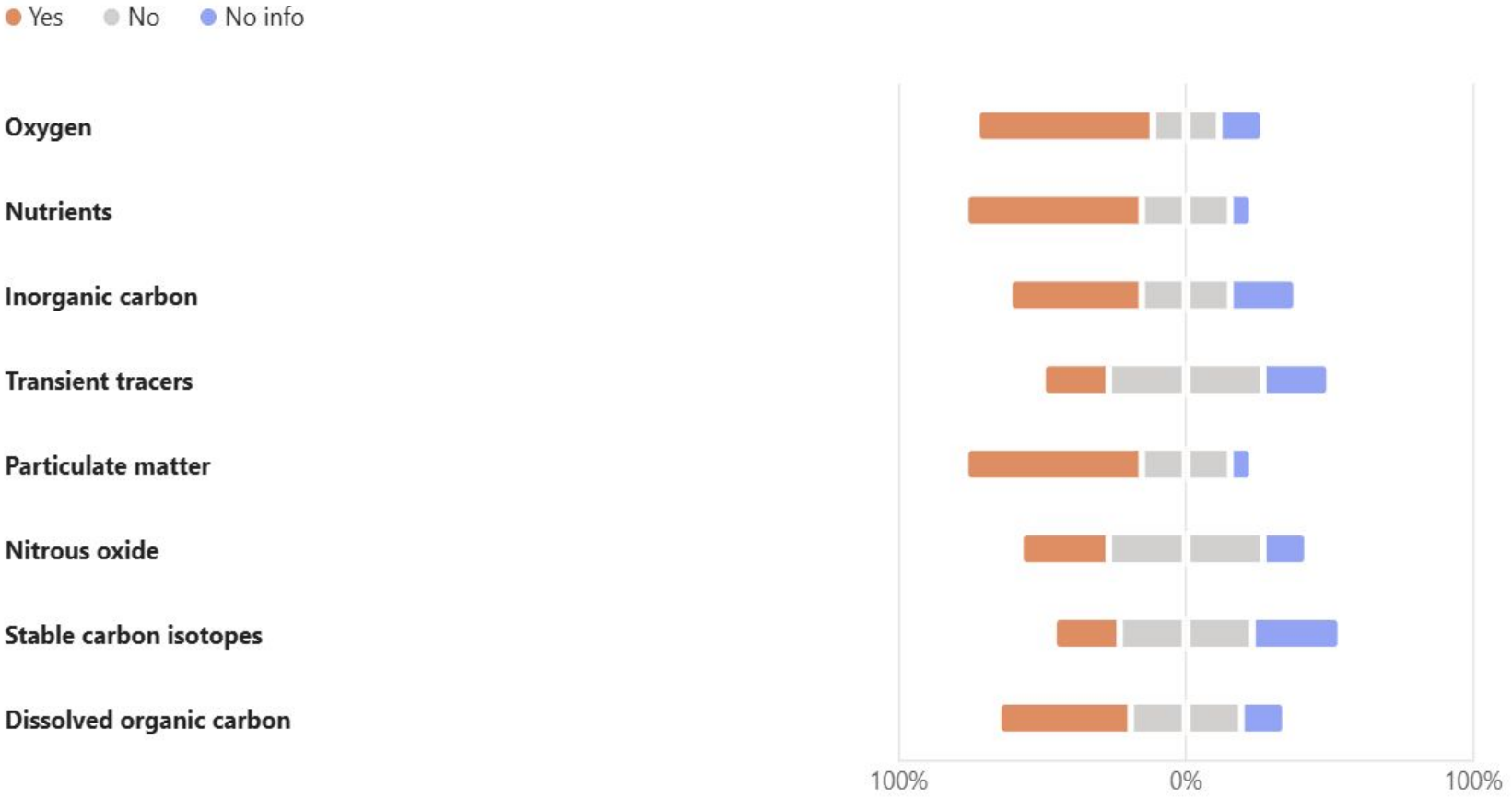
- Regional **training workshops**
- **Technical training on ocean observation technologies**
- **Data management and modelling training**
- **Early-career capacity development**.

Please indicate the **physics and climate EOVs** that have been/are being measured by your GRA



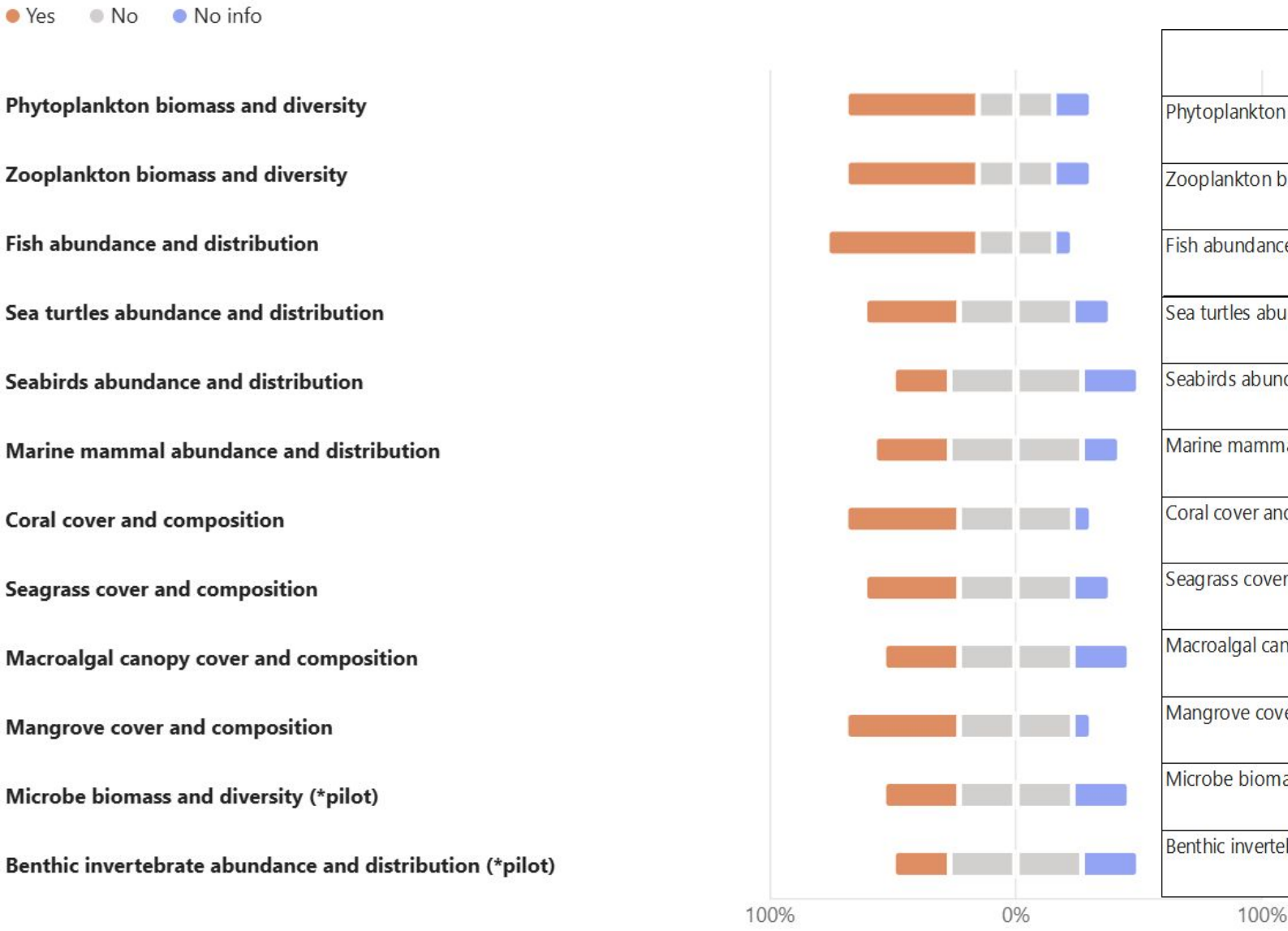
	Yes	No	No info
Sea state	10	1	2
Ocean surface stress	7	2	4
Sea ice	6	4	3
Sea surface height	11	0	2
Sea surface temperature	12	0	1
Subsurface temperature	10	0	3
Surface currents	12	0	1
Subsurface currents	9	1	3
Sea surface salinity	12	0	1
Subsurface salinity	10	0	3
Ocean surface heat flux	5	3	5
Ocean bottom pressure	6	2	5
Turbulent diapycnal fluxes (*pilot)	2	3	8

Please indicate the **biochemistry EOVs** that have been/are being measured by your GRA



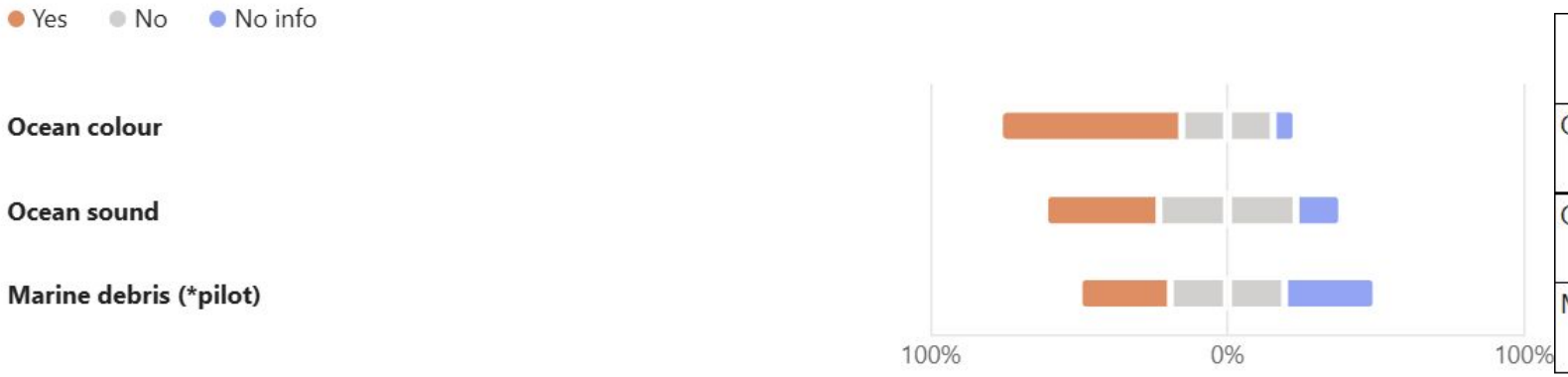
	Yes	No	No info
Oxygen	8	3	2
Nutrients	8	4	1
Inorganic carbon	6	4	3
Transient tracers	3	7	3
Particulate matter	8	4	1
Nitrous oxide	4	7	2
Stable carbon isotopes	3	6	4
Dissolved organic carb	6	5	2

Please indicate the **BioEco EOVs** that have been/are being measured by your GRA



	Yes	No	No info
Phytoplankton biomass and diversity	7	4	2
Zooplankton biomass and diversity	7	4	2
Fish abundance and distribution	8	4	1
Sea turtles abundance and distribution	5	6	2
Seabirds abundance and distribution	3	7	3
Marine mammal abundance and distribution	4	7	2
Coral cover and composition	6	6	1
Seagrass cover and composition	5	6	2
Macroalgal canopy cover and composition	4	6	3
Mangrove cover and composition	6	6	1
Microbe biomass and diversity (*pilot)	4	6	3
Benthic invertebrate abundance and distribution (*pilot)	3	7	3

Please indicate the **cross-disciplinary (including human impact) EOVs** that have been/are being measured by your GRA



	Yes	No	No info
Ocean colour	8	4	1
Ocean sound	5	6	2
Marine debris (*pilot)	4	5	4

Top 3 Challenges and Opportunities

Main Challenges

- **Sustained funding**
- **Data integration and interoperability**
- **Limited technical capacity**
- **Geopolitical constraints in some regions**
- **Maintaining observing infrastructure**.

Opportunities

- **UN Ocean Decade initiatives**
- **Blue economy growth**
- **Advances in ocean technology and AI**
- **Regional and international partnerships**.

Planning for 2026-2027

Priority actions

- Expand **observing networks and data coverage**
- Improve **data management and interoperability**
- Strengthen **regional collaboration**
- Increase **capacity building**
- Secure **long-term funding and partnerships**.

Requested Support from GOOS

- Improved coordination and collaboration among GRAs.
- Development of common communication strategies about GOOS.
- Identification of shared global observing priorities.
- Greater engagement and support from GOOS / IOC member states.
- Continued formal recognition by GOOS.
- Support for **international networking, training, and communication visibility**.
- Opportunities for **peer exchange with other GRAs**.
- Capacity-building support.
- Guidance on **best practices and technical standards**.
- Assistance to expand **VOS and SOOP observing systems**.

Global Ocean Observing System

Thank you

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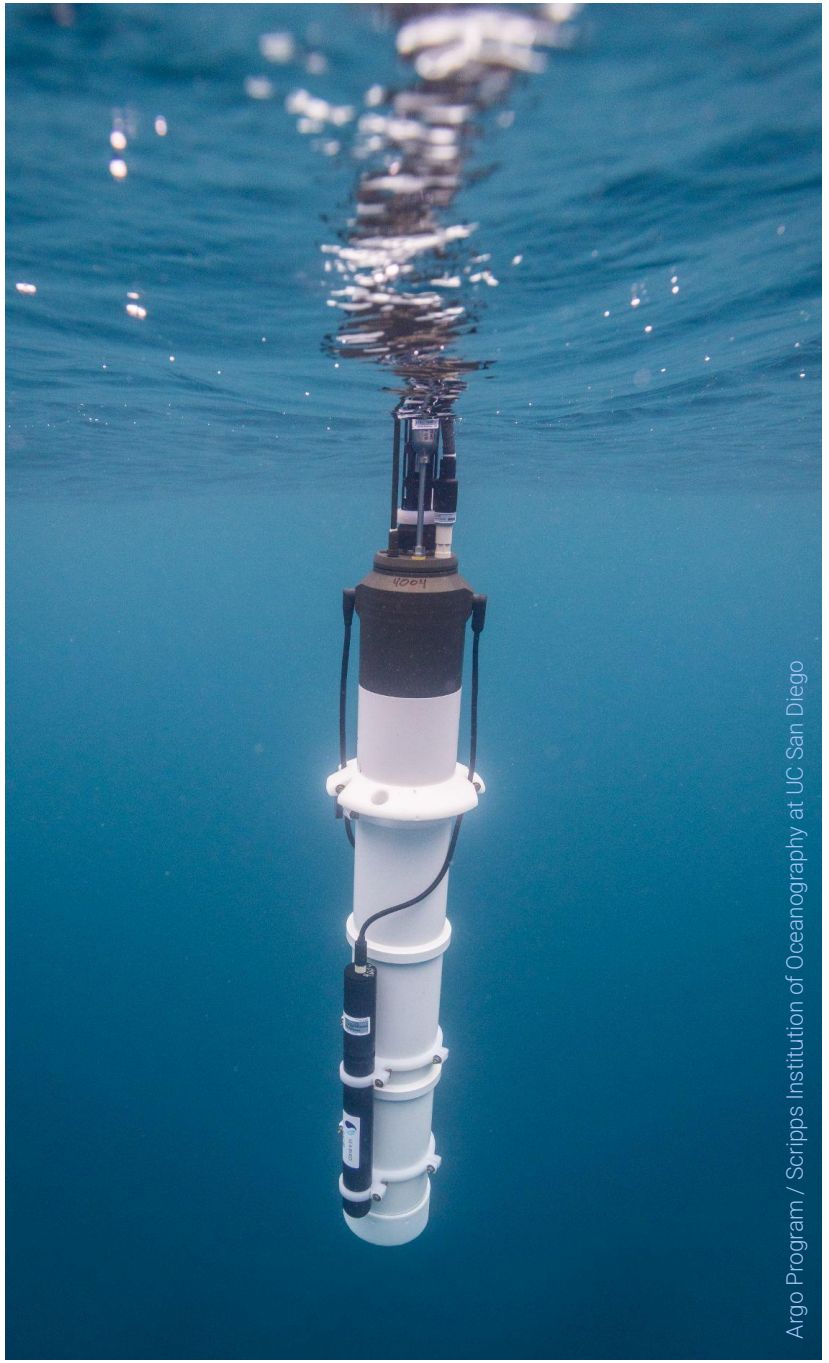

Argo Program / Scripps Institution of Oceanography at UC San Diego