



The Global Ocean Observing System



Session 6: Optimising synergy with the Ocean Decade

Part 1: The Decade Conference on Challenge 7 Vision

(Presenter and/or contributor Name+Affiliations)

Thirteenth GOOS Steering Committee Meeting [SC-13]
Barcelona 13th-16th April 2024

Challenge 7



Sustainably expand the Global Ocean Observing System

Ensure a sustainable ocean observing system across all ocean basins that delivers accessible, timely, and actionable data and information to all users.



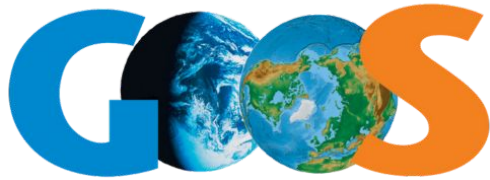
Challenge 7 Whitepaper

Working Group 7 Co-chairs:

Dr. Patricia Miloslavich (East Antarctic Monitoring Program) & Dr. Joe O'Callaghan (Oceanly Science)

Expert members:

Aridane G. González (Instituto de Oceanografía y Cambio Global, Spain), Erin Satterthwaite (Scripps Institution of Oceanography, UCSD, USA), Irene Schloss (Austral Center for Scientific Research from the National Council of Scientific Research (CONICET), Argentina), Isa Olalekan Elegbede (Brandenburg University of Technology (BTU), Germany/Nigeria), Jerome Aucan (Pacific Community Center for Ocean Science (PCCOS), Pacific Community-SPC, New Caledonia), **Laura Lorenzoni** (NASA, USA) Marcos Fontela (Spanish National Research Council, Spain), **Michelle Heupel** (IMOS, University of Tasmania, Australia), **Nicholas Rome** (University Corporation for Atmospheric Research, USA), Peter Brickell (Queens University, Canada), **Pierre Testor** (Pierre and Marie Curie University, France), **Steve Widdicombe** (Plymouth Marine Lab, UK), **Emma Heslop** (IOC/OOS, France), **Terry McConnell** (IOC/OOS, Canada), **Mathieu Belbeoch** (IOC/OOS, France)



The Global Ocean
Observing System

Climate
Weather and hazard warnings
Ocean health

OceanObs Conferences

'99, '09, '19

Global fleet of autonomous floats
Framework for Ocean Observing
Collection of community White Papers



2021 United Nations Decade
2030 of Ocean Science
for Sustainable Development

DCO - Ocean Observing
Programmes
Projects

Challenge 7 Whitepaper

Ambition: a clear roadmap to achieving a sustainable, co-designed, fit-for purpose, multidisciplinary, and geographically expanded global ocean observing system that delivers accessible data to all nations and users.

Access here:

<https://oceanexpert.org/document/33599>



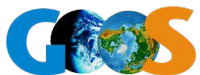
The Ocean Decade

Vision 2030 White Paper

Challenge 7

Expand the Global Ocean Observing Systems

Version 1.0 - April 2024



unesco

Intergovernmental
Oceanographic
Commission

Strategic ambition





WG7: Key themes

- Improve global observation capabilities
- Improve translation of data into information
- Technology and innovation will be a pillar
- New economic thinking is critical
- Co-design and partnership are key
- Operational approach and cultural change
- Expanded, capable, and diversified workforce underpins success



WG7: Recommendation 1



- Upgrade and expand ocean observing capacity in poorly-observed ocean basins: polar regions, the Global South, island-nations, and priority coastal systems.
- Thematic priorities for ocean observing are weather (including events), hazards, ocean health and marine biodiversity and resources.
- Training and capacity development will be critical at all levels of the stream, from data collection to data analysis and modeling.



WG7: Recommendation 2



- Increase national, regional and global coordination, focusing on co-design and partnerships.
- Improved coordination that uses the GOOS framework to ensure standards, best practices for an expanded global ocean observing system.



WG7: Recommendation 3



- Develop and expand the use of autonomous technology, sensors and platforms.
- Ocean observing needs easy to use, reliable, robust and affordable technology.
- Technology and innovation underpin the democratization of generation, access and use of ocean observations.



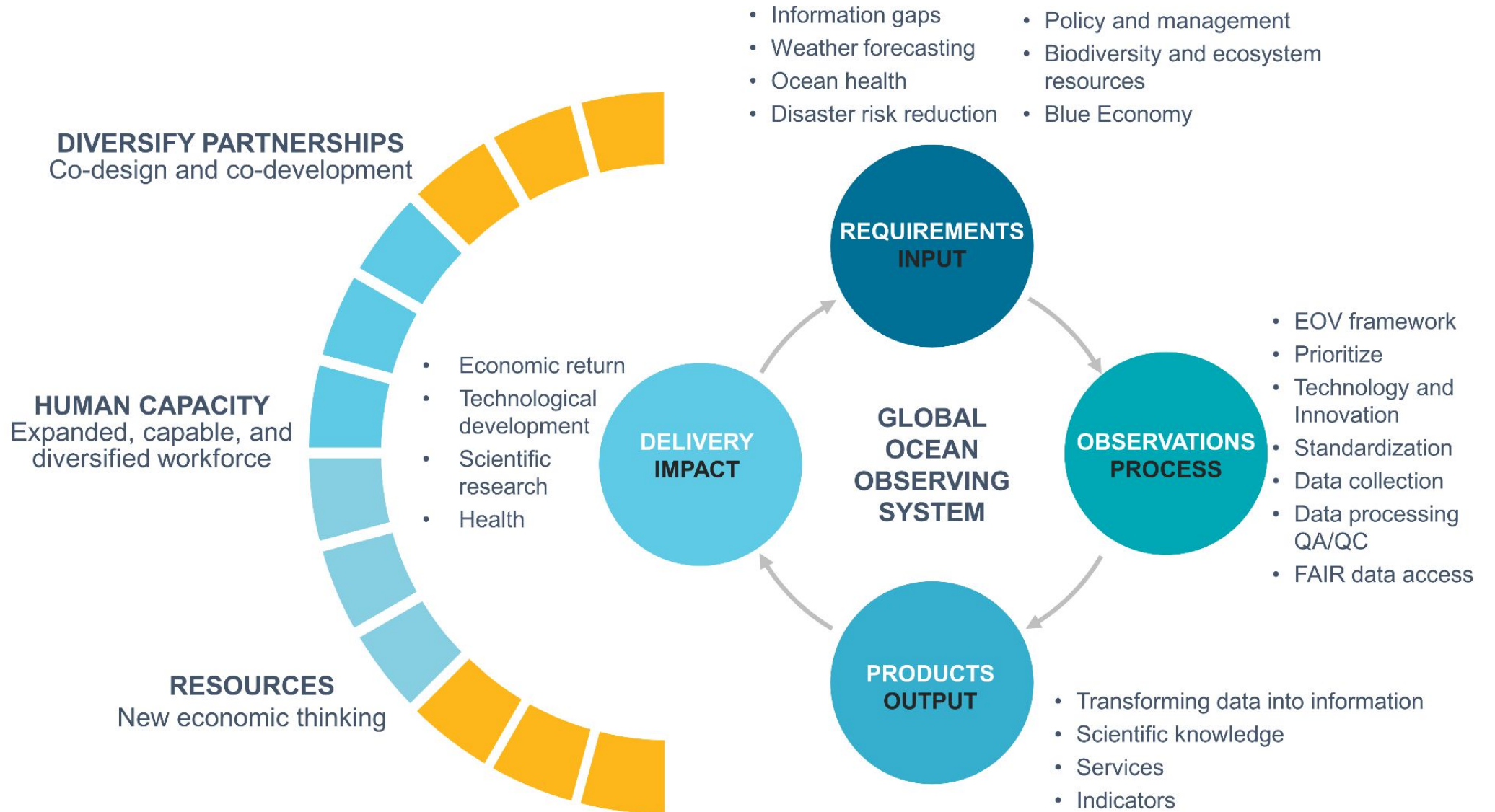
WG7: Recommendation 4



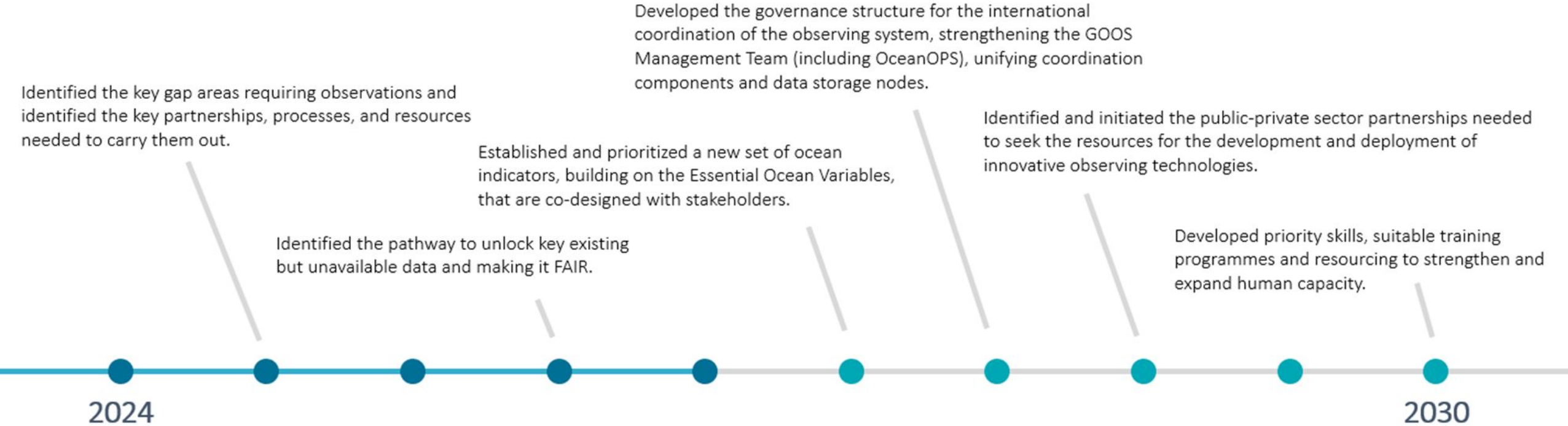
- Establish new and sustained financing mechanisms for global ocean observing, including resourcing for SIDS, LDCs.
- Use economic models for ocean investment to diversify and accelerate investment in ocean observing and infrastructure from new actors.



Expanding the Global Ocean Observing System



Measures of Success



Feedback from the Conference

- **Act on known big needs we can do now**, while the community evolves observing design based on societal priorities (social EOVs for Planet Health). **Foster global priority observations** (climate, carbon, biodiversity, deep, coast, polar regions, island nations).
- Adopt new economic thinking: **Diversify our partnerships** across sectors (economic, public, private, science, etc) to **co-design, co-develop, and co-deliver observations** that translate into the information required by these sectors - science can't do this alone.
- **Optimise and harmonise observations across platforms (in situ, satellite, emerging networks)**. Develop **innovative autonomous and cost-effective technologies** to maximise reach ensuring standardisation and best practices. Leverage and learn from other components and processes of the value chain (e.g. Ocean Predict, CMEMS, future Digital Twins) for evolving priority observations for the global ocean observing system to 2030 and beyond.
- **Expand and diversify the workforce** of skilled and trained ocean professionals.

What can contribute?

Currently underway - GOOS

Programmes:

Co-Design (pilots SIDS, Africa)

CoastPredict (pilots SIDS)

DOOS

MarineLife 2030 (inc. SIDS)

OBON

OASIS

Projects:

Dialogues with Industry

Cost Effective Technologies

Also

Challenger 150

OneDeepOcean

Gaps not being addressed - solutions?

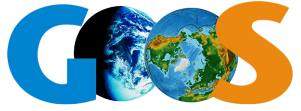
- **Setting clear priorities regular basis** for ocean observing requirements thematic and spatial, requested multiple sources Decade, G7, EuroSea stakeholders
 - **New economic thinking**, new and sustained financing mechanisms for SIDS, LDS, new economic models for financing observing
 - **Systematic training/workforce**, observing, data processing, modelling, operational
 - **Technology should have more focus**, cost effective and autonomous
 - **Polar regions**, not well represented in the programmes
- **GOOS develop process to set priorities?**
 - **Use Decade (and Sponsors) to develop a structured dialogue around new economic thinking?**
 - **Work with partners IODE/POGO, Decade DCCs, IOC regional offices to deliver training?**
 - **Elevate current work in technology area - assess and speed progress?**
 - **Identify polar projects - Decade Call?**

GOOS looking forward - to 2030

- **Increase use of the Decade visibility** to highlight existing programmes addressing recommendations and vision:
 - **Barcelona Statement** - investment in infrastructure, observations, data, etc. New economic thinking
 - **Vision Papers** - recommendations and response
- **DCO Ocean Observing** lead in:
 - Foster new partnerships (funding/industry) already underway
 - Digital ecosystem already underway
 - Foster dialogue on new economic thinking - within Decade
- **Leverage support across Decade:**
 - DCC network support programmes, national committees
 - Financed calls for gaps, matchmaker tool, use convening power



Feedback on the WG7 Vision Paper, before it is finalised...



The Global Ocean Observing System

Thank you

goosocean.org



unesco
Intergovernmental
Oceanographic
Commission

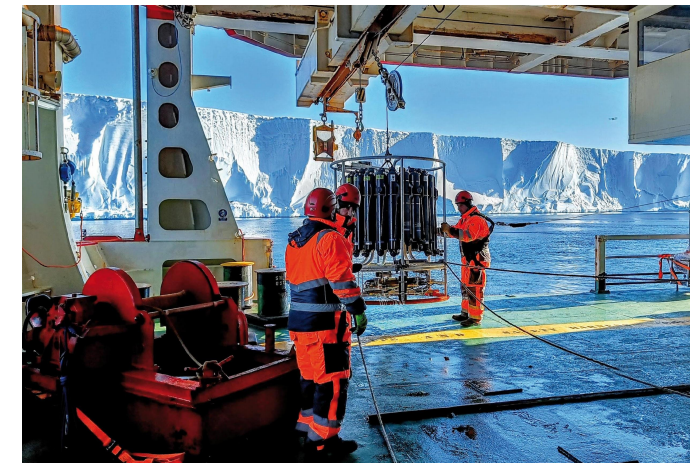


WORLD
METEOROLOGICAL
ORGANIZATION



UN
environment
programme

International
Science Council



Whitepaper 7 structure

PRIORITY DATASETS	KNOWLEDGE GENERATION AND SHARING	INFRASTRUCTURE AND PROCESS REQUIREMENT	RESOURCES AND PARTNERSHIPS	CAPACITY DEVELOPMENT AND EXCHANGE NEEDS	TECHNOLOGY AND INNOVATION SOLUTIONS
Weather forecasting Vision 2030 priorities Guide mitigation and adaptation	Fit for purpose codesign Inter-sectorial dialogues Collaboration with citizens and indigenous communities	Expand current capacity Test value Data processing and modelling capacity Use of AI Strengthen GOOS and DCOs	Strengthen /develop partnerships New economic thinking Champions	Training in broad range of skills – army of people Expand current training programs / curricula Sharing of software and analytical tools Multiple languages	More automated technologies Expansion of current observing fleet Low cost technologies Evolution of Argo to ONEArgo

MILESTONES

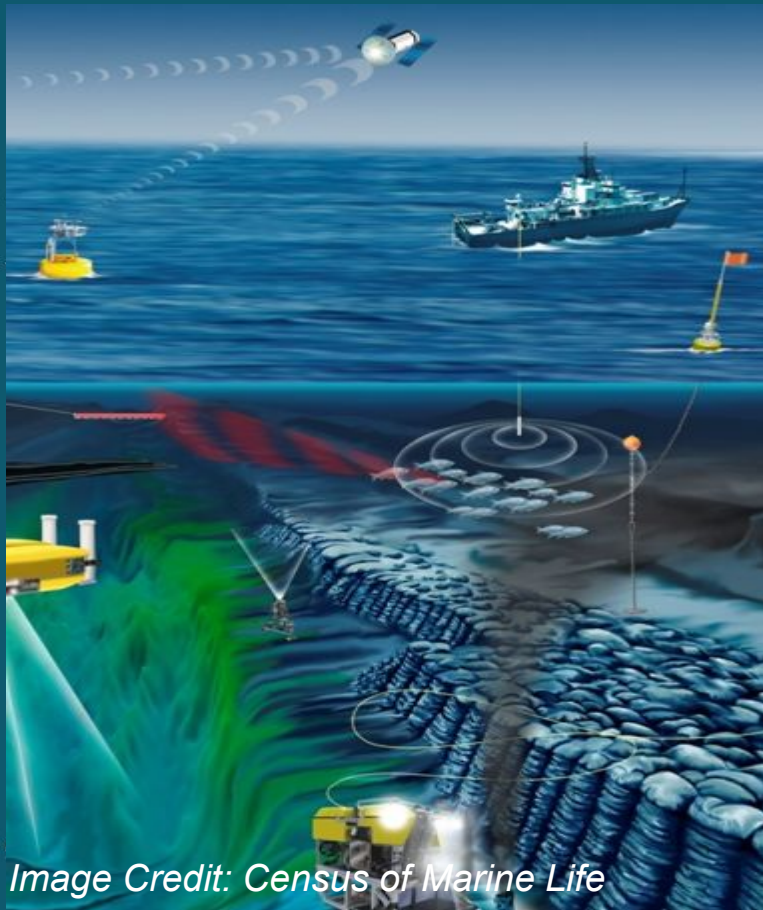


Image Credit: Census of Marine Life

Milestone 1. Improved and expanded observing capabilities globally, specifically in developing nations and under-observed ocean regions using standards and best practices.

Milestone 3. Deployed innovative technologies, sensors and platforms that have complemented existing observing programmes and, together, have filled priority data gaps.

Milestone 5. Sustained existing partnerships and built new international partnerships across the public and private sectors which combined have shared and strengthened responsibilities for ocean observing.

Milestone 2. Developed products that translate data into usable information and knowledge for a range of users. This will include integrating data, streamlined and improved online portals and visualization tools.


Milestone 4. Accelerated and diversified investment in ocean observing, infrastructure, training and capacity development with the use of economic models for ocean investment.

Milestone 6. Increased and diversified the global ocean observing workforce so that it truly reflects all aspects of the ocean observing value chain.

Co-Design in the Decade

Co-designing the Science We Need for the Ocean We Want

Guidance and Recommendations for Collaborative Approaches to Designing & Implementing Decade Actions



SAVE THE DATE



#OceanDecade24


2024 UN OCEAN DECADE CONFERENCE

Delivering the science we need for the ocean we want

10-12 April 2024
Barcelona, Spain



The Ocean Decade



Vision 2030 White Paper

Challenge 7
Expand the Global Ocean Observing Systems

Version 1.0 - April 2024



Ocean Observing Co-Design

by The Global Ocean Observing System

