Annex 2: Terms of Reference and Budget Needs Estimate – Ocean Observing Decade Coordination Office

Ocean Decade Coordination Office for Ocean Observing

Terms of Reference

The following document details the terms of reference for the **Decade Coordination Office for Ocean Observing**, in accordance with the decision made by the Global Ocean Observing System (GOOS) Steering Committee during its 11th Session on 25 April 2022, and based on the proposal submitted by the GOOS Office on 15 April 2022.

1 Overview

The core focus of the Decade Coordination Office (DCO) for Ocean Observing will be on supporting the Ocean Decade Challenge 7 to "*Ensure a sustainable ocean observing system across all ocean basins that delivers accessible, timely, and actionable data and information to all users*." This is strongly aligned with the vision of the GOOS 2030 Strategy, and the aims of the Ocean Decade.

Challenge 7 in the Ocean Decade

Ocean Decade Challenge 7 specifically identifies the need to ensure a sustainable ocean observing system across all ocean basins that delivers accessible, timely and actionable data and information to all users. However, sustained and fit for purpose ocean observations will also be key to the fulfilment of most of the remaining challenges, including for example those related to the ocean climate nexus, ecosystem management, marine pollution and resilience. A GOOS supported DCO to cover Challenge 7 fits well with GOOS 2030 Strategy to create a truly integrated global ocean observing system that delivers the essential information needed for our sustainable development, safety, wellbeing and prosperity.

There are now over 121 endorsed Ocean Decade Programmes and Projects, a significant number (56%) of which are directly contributing to meeting the Ocean Decade Challenge 7 related to observations. Many of these actions have roots in GOOS, including the Observing Air-Sea Interactions Strategy (OASIS), Ocean Practices for the Decade, Marine Life 2030, the Ocean Biomolecular Observing Network (OBON), OneArgo, GO-SHIP Evolve, AniBOS, and Odyssey. GOOS is also leading three transformative Ocean Decade Programmes that address major gaps in the system and will deliver priority elements of the GOOS 2030 Strategy; Ocean Observing Co-Design, CoastPredict and Observing Together, which together focus on capacity development, revolutionizing observing and forecasting into the coast, and at the same time evolving system design to be increasingly user and application driven, with tools to evaluate ROI. Other actions represent new entrants that are not yet connected to sustained infrastructure within GOOS or are beyond the current scope of GOOS, for example monitoring for fishing and pollution.

Why a DCO for Ocean Observing?

The quantity of Decade Actions focused on Challenge 7, highlight the pressing need to ensure connection across the Ocean Decade, and to ensure actions are built for the future, and that the coordination goes beyond GOOS' existing scope, which the DCO for Ocean Observation aims to deliver. In return, there is a clear opportunity for the DCO to have a transformational effect that will lift ocean observing capacity, help the Ocean Decade reach its aims, and lead to

transformation of GOOS within the Ocean Decade to meet the challenges beyond 2030, leaving behind a practical legacy.

The broad scope of the Ocean Decade is a major opportunity for the accelerated development of sustained observations, to identify and fill gaps in capacity, to connect the data and the use across silos, to answer the pull to deliver solutions for sustainable economic growth. There needs to be engaged oversight of what we achieve through the Decade so that we do make a difference over the next 10 years and leave users with solutions, and an integrated and sustainable legacy.

Although focused on Challenge 7, sustained and fit-for-purpose ocean observations will also be key to the fulfilment of many of the remaining Decade Challenges, including those related to the ocean climate nexus, ecosystem management, marine pollution and resilience, and development of a sustainable ocean economy. The DCO's work will support GOOS and stakeholders to enhance the coverage, breadth, quality and utility of ocean observations, and hence the societal value of ocean observing.

Role of the DCO for Ocean Observing

The role of the DCO for Ocean Observing is as follows (see also Annex 1 for a general description of a DCO within the Ocean Decade framework):

1. Coordinating synergistic efforts among the diverse stakeholders that contribute to the Ocean Decade, to ensure efforts are not duplicated and opportunities are maximised and leveraged appropriately; ensuring that intersections of the Ocean Decade actions and GOOS activities are identified, coordinated and connected, towards an improved ocean observing system and legacy of Ocean Decade actions; supporting appropriate connections and collaboration across the actions focused on Challenge 7.
2. Supporting specific identified tasks aimed at lifting GOOS and the Ocean Decade, towards achieving Challenge 7.
3. Liaising with the Decade Coordination Unit (DCU) for reporting, fundraising, other management functions for the Ocean Decade Actions focused on Challenge 7.
4. Coordinating closely with the key infrastructure coordination hubs, namely DCO for Ocean Data (IODE), and DCC for Ocean Prediction (Mercator Ocean International).
5. Providing a focal point for liaising and responding across the Ocean Decade on ocean observing related issues, to support the aims of the Ocean Decade.
6. Identifying needs or gaps to meet Challenge 7, and scoping future Ocean Decade Calls to support this.
7. Undertaking communication regarding the need for ocean observing and how meeting Challenge 7 within the Ocean Decade will deliver the Ocean we want for the future we need.

The expected duration of the DCO will be 4 to 5 years (from 25 April 2022), with possible renewal after review and depending on available resources.

2 Terms of Reference

The DCO for Ocean Observing shall carry out the following actions in support of the Decade:

COORDINATION OF DECADE ACTIONS

a) Identify opportunities and support collaboration between Decade Actions.

b) Support links between Decade Actions and existing infrastructure, such as GOOS, IODE, WMO, UNEP, etc., aiming for longevity of observing advances made under the Ocean Decade.

c) Liaise across the Ocean Decade with the help of the DCU to identify gaps in ocean observing capacity and infrastructure from the perspective of the other Ocean Decade challenges.

d) Provide strategic advice to the Decade, to the Actions and to GOOS (and other observing infrastructure), in aligning actions, in addressing gaps in existing infrastructure, and by informing future Calls for Actions.

e) Encourage the development of any technical and scientific capacities needed to support the Decade Actions.

f) Coordinate intersections of the Ocean Decade and GOOS activities leading to an improved ocean observing system and legacy of Ocean Decade Actions.

g) Maintain an updated list of relevant Decade Programmes, Projects, and Activities, as well as Decade Contributions, when they are relevant for the DCO's scope of work, including information on relevant contacts, status, partners, and its expected activities and outcomes.

FACILITATION AND ENGAGEMENT OF STAKEHOLDER COMMUNITIES

h) Support broader connection across all observing communities represented within the Ocean Decade Actions (i.e. beyond GOOS).

i) Liaise with similar bodies focused on Ocean Data (IODE DCO) and Ocean Forecasting (Mercator Ocean International DCC) to support information flow and structural planning around the connections between these components of the information delivery system.

j) Identify and share lessons learned by the observing community related to Challenge 7.

k) Proactively facilitate the structuring and engagement of a Communities of Practice around ocean observing via the Global Stakeholder Forum to facilitate dialogue and exchange between other Decade stakeholders.

SUPPORTING DECADE CALLS FOR ACTION

l) Provide advice to the DCU on scoping of future calls for Decade Actions related to ocean observing. Actions solicited through these Calls can be one-off contributions (e.g. funding) or programmes, noting that decisions on the solicitation of projects lie with the Decade Programmes.

m) Provide advice to the DCU in reviewing requests for endorsement of Decade Actions that fall within its purview.

MONITORING & REPORTING

n) Organize regular reporting by all DCCs, DIPs, programmes and projects within the scope of work of the DCO and in line with the requirements of the Monitoring and Evaluation Framework of the Ocean Decade

o) Provide advice and data to the DCU on monitoring and evaluating progress of the Decade Programs, Projects and Activities under its scope of work.

p) Deliver an annual workplan to the DCU and the GOOS Steering Committee on the first semester of each year, setting out the DCO's priorities, tasks, goals, and timing for the year, to make sure there is alignment with the Ocean Decade goals, GOOS Strategy, the other DCOs/DCCs, and other relevant Decade stakeholders.

q) Present an annual financial and activity report for the previous calendar year, to be presented during the first trimester of the following year to the DCU and GOOS Steering Committee.

r) Contribute to Decade annual reporting, including the preparation of programmatic / geographic summaries of Decade Actions under their scope of work, case studies or more in-depth thematic or geographic analyses.

Communications & Mobilization of Resources

s) Raise awareness of ocean observing, encourage stakeholder engagement, and assist with fundraising and sourcing of resources through communications activities.

t) Seek partnerships, voluntary commitments, sponsorship and funding to strengthen the implementation and impact of a truly integrated global ocean observing system.

OTHER AGREED ACTIVITIES FOR LEGACY AND IMPACT

u) Undertaking identified transformational tasks/functions that will improve the global ocean observing system, lift GOOS and the Ocean Decade, and leave a practical legacy for the work of the DCO, initially including:

   i. Supporting a cross-GOOS Data Team (see SC-11 Decision 3): working closely with GOOS components, the DCO Ocean Data, and relevant Ocean Decade actions, this cross-GOOS data team will aid GOOS and the Ocean Decade to support frictionless data flow within the global ocean observing system. The DCO will also help secure support for gaps identified in the implementation of a data strategy.

   ii. Identifying promising new technology or applications from within the Ocean Decade actions that could have the potential to enhance and evolve the global ocean observing system, and also identify ways to engage or pilot this technology within GOOS.

   iii. Others that are identified and agreed as part of the DCO Work Plan

v) Provide funding and administrative support for additional coordination meetings across GOOS to facilitate discussion about how to respond to the integration needs, gaps, ideas and requests from the Challenge 7 focused Decade Actions. This will include cross-GOOS meetings for: GOOS Expert Panels, GOOS implementers (GRAs, OCG, and ETOOFS), and GOOS Projects.

w) Encourage adherence to best practices and FAIR data principles within the Decade Actions.

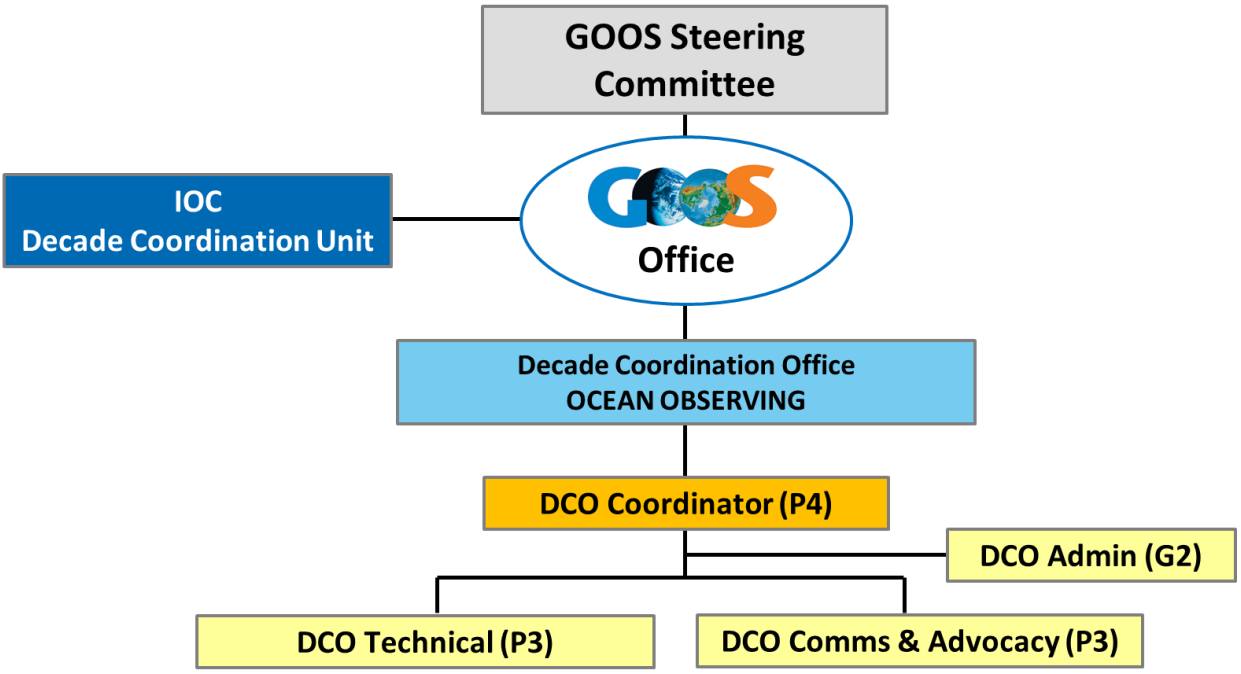
3 Governance & operating principles

The DCO's lead institution is the Global Ocean Observing System (GOOS). GOOS is led by the Intergovernmental Oceanographic Commission (IOC) of UNESCO, and co-sponsored by the World Meteorological Organization (WMO), the United Nations Environment Programme (UNEP) and the International Science Council (ISC). Oversight is provided by a multinational Steering Committee, which governs and coordinates the components of GOOS, steering its work to achieve objectives of the GOOS 2030 Strategy. GOOS terms of reference are given by IOC Resolution XXVI-8 (2011).

The DCO for Ocean Observing will be embedded within the GOOS Office. The DCO will take on integrative work across GOOS and the Ocean Decade actions with a focus on Challenge 7 to ensure close connection and non-duplication of existing work. It will report to the GOOS Office, as with other GOOS Components, and report to the GOOS Steering Committee and DCU on major decisions regarding funding, scope and direction, and to report on progress and annual Work Plan, similar to other GOOS Components.

The DCO's core team includes a full-time Coordinator who will be the Focal Point, will manage the office and provide high level support for its activities; a technical specialist in the domain of data flow; a communications / engagement specialist; and a part-time administrative assistant. The DCO Manager will act as the focal point, responsible for maintaining communications with other Decade organizations, such as the DCU and other DCOs/DCCs.

The organizational chart below provides an overview of the lines of authority and communication:



4 Support

The implementation of this DCO requires specific staffing and funding, as described in the DCO proposal, which will be sourced beyond the existing GOOS budget (see section 5 'Resourcing'). However, there are several institutions, as described below, that form an enabling environment providing support to the DCO, for example in terms of in-kind support, expertise and ongoing promotion.

The Global Ocean Observing System (GOOS) coordinates sustained ocean observing activities across the global ocean, to support the delivery of information to those taking decisions across climate adaptation and policy, regarding hazard warnings and weather, for marine resource management, and for marine transport and operations. GOOS has three key delivery areas: climate, forecasts and warnings, and ocean health.

The GOOS community encompasses local, national and regional ocean observing systems and programmes, principal investigators, scientists and technicians undertaking sustained observations within national programs and global ocean observing networks, and many individuals contributing to the work of GOOS.

Through the work of its core components, GOOS leads the community in creating the frameworks and partnerships required to meet the needs of the diverse array of end users, across climate, weather and hazard forecasts, and ocean health. They include:

- The GOOS Observations Coordination Group (OCG) strengthens implementation of 12 global ocean observing networks. Together these networks deliver common data streams from a range of the different ocean and above ocean observing platforms. Eighty-six countries support these 12 global ocean-observing networks, with some 8,900 in situ observing platforms in operation monitoring a broad range of Essential Ocean Variables (EOVs). The OCG works across the global networks to support integrated system design, efficiency, and the timely delivery of high-quality ocean data; best practices, technological innovation, and the evolution of networks to meet future requirements are important parts of this work.

- The GOOS BioEco Panel supports the development of observing networks in the biological realm, it coordinates 13 BioEco networks, such as microbes, phytoplankton, fish, marine mammals, macroalgae and seagrass.

- A technical coordination team at OceanOPS and IODE's Ocean Biodiversity Information System (OBIS) supports the implementation of GOOS through the integration and harmonization of metadata – basic information about data that makes it easier to find and use. This metadata management allows for accurate monitoring of ongoing global ocean observing activity across the 12 OCG networks and helps to ensure that data and metadata can be delivered to stakeholders.

- Fifteen GOOS Regional Alliances (GRAs), support and coordinate implementation at a regional level with the mandate to connect "Global to Regional to National level". GRAs coordinate across national systems to solve regional priorities, differing by need, resources and culture. These interact with each other to learn and share best practice in implementing observing systems.

- The Expert Team on Operational Ocean Forecasting (ETOOFS) creates guidance to improve the global quality, interoperability and capacity for ocean forecast products.

The GOOS Components and community will be part of the implementing environment that will support the work of the DCO.

5 Resourcing

Table 1 below provides an indicative budget for the implementation of the Ocean Observing DCO over the next 5 years. Resourcing and/or funding is expected to be obtained from various governmental, philanthropic or private organisations.

This budget may be increased, reduced, or modified during the DCO's tenure, following consultation and agreement with the GOOS Steering Committee and DCU.

Table 1. Proposed budget for DCO implementation

	Estimated amount in US$					
Resources	2022*	2023	2024	2025	2026	Total
Staffing costs / resource needs (1 P4 / 1,6 P3 / 0,5 G2)	296,692	540,615	540,615	540,615	540,615	2,459,154
Operational costs (including comms)	120,000	216,000	226,000	227,500	237,500	1,027,000
Total yearly	346,750	756,615	766,615	768,115	778,115	3,486,154

*Only half year considered.