Session 15:

Developing capacity for Co-Design

General Themes:
- The Program requires identifiable <u>Actions and Tracking</u> of several areas in need of capacity development (needed institutional interfaces and skill set requirements)
- The Program would benefit from the promotion of its <u>value-added</u> in order to recruit additional participation and resources
- The Program needs to generate messaging around tangible desired outcomes along with <u>pathways to participation</u>

**Requires resources and focused attention
(certainly in the near-term)**

Lead : Andrea McCurdy and Ann-Christine Zinkaan

Questions for discussion:

- What actions are needed to enhance Co-Design capacity and foster a stronger community?

- How can we best spread and implement Co-Design best practices? OBSP?

- What improvements or expansions are needed for the Network of Networks?

- What are the key priorities for the 2025 event in terms of themes, workshops, and outcomes?

- How can we ensure meaningful participation and collaboration across all networks?

- How do we include groups such as ECOPs, SIDS, and LDCs ?

- What actions are needed to enhance Co-Design capacity and foster a stronger community?
- Provide actionable links among practitioners and coordinators
    - Take opportunities to promote Co-Design leads and Exemplar members
    - Provide a path to participation or how to take advantage of outcomes
- Strongly messaged/highly visible promotion of successes
    - This should not be a long-term need/should ultimately be taken up by community

- How can we best spread and implement Co-Design best practices? OBSP?
- Request from Exemplar leads/members what works best in all areas
- Consider adopting a model of a Collective Impact Organization (Common Agenda, Shared Measurement, Mutually Reinforcing Activities, Continuous Communications, Backbone Support)
- Identify relevant best practices and promote their use as de-facto standards
    - This would require resources for coordination and oversight

- What improvements or expansions are needed for the Network of Networks?

- Identification, creation, and support for liaisons among key groups
- Agreed-to liaison Actions and outcomes
  - Based on Co-Design Engagement Plan
- Track interactions and outcomes / Report out to Project(s)
  - Demonstrate value-added through communication channels/regularly scheduled meetings
  - Seek to make liaison activity routine

- How can we ensure meaningful participation and collaboration across all networks, including NoNs?
- Identify networks and publish results
- Community agreement on strong points, vulnerabilities, and gaps
  - Will require resources to engage and iterate

- What are the key priorities for the 2025 event in terms of themes, workshops, and outcomes?
- Implementation Plans / next steps – Program and Exemplars
  - OSCAR: Facilitated by Proj Manager / Regular online sessions and Program-wide meeting
- Milestones: keys for-or- impediments to success and architectural interactions
- Acknowledge varying degree of maturation among Exemplars
  - Seek to use processes (lessons/best practices) to mature groups / methods for demonstrating value-added

- How do we include groups such as ECOPs, SIDS, and LDCs ?
- Focus on key/strategic additions and help meet their needs
  - OSCAR: Resources in place to take advice from professional coordinator / UCAR DEI is willing to advise
- Identify POC to focus on these activities (Engagement Liaison)
  - Seek early engagement for best results / as a best practice
  - Be mindful of limited funding and resources across institutions and countries (primarily volunteer participation)
- Track milestone activities and measure outcomes
  - Generate ongoing evaluation related to what works
  - Lead or contribute to best-practices being developed and adopted

Marine Carbon and Core Team Co-Design Programme

Exemplar Leads

- Richard Sanders, NORCE / ICOS, NOR

- Anya Waite, Ocean Frontier Institute, CAN

Exemplar Support

- Ronnie Noonan-Birch, Ocean Frontier Institute, CAN

Jan 16th , 2025

GOOS | Ocean Observing Co-Design
by The Global Ocean Observing System

Highlights and results achieved for 2024

- Steering committee ToR
- Carbon Exemplar Scoping Doc that outlines the purpose, structure and function of the exemplar; this document serves as the foundation of the GOOS C plan, Pillar 3, and other comms strategies
- Attending the Co-Design workshop at UNOC 2024 and engaging with researchers
- Compiling the **work done engaging intergovernmental stakeholders and the pCO2 research community into the Ocean Frontier Institute's "What We Heard Report" that describes their needs for ocean carbon data and data products**
- **Attending AAOIRA and presenting the WWHR**
- **Preparing for Horizon Europe call**

Issues and challenges 2024

What challenges hampered the progress of the Exemplar?
- Identifying and achieving funding to support a steering committee and to fund the co-design process

What are the most relevant issues preventing the implementation of the Exemplar? Issues in general?
- Lack of understanding at the intergovernmental and national level of the ocean's importance to climate change
- Uncertainty in the ocean's carbon budget
- The contradictions of intl. ocean governance policies particularly the BBNJ, the Paris Agreement and the LC/LP
- Differences in end user priorities
- **Requests for improved channel for industry stakeholders to interact with the work happening in the intergovernmental and ocean observation space**

Exemplar Activities for 2025

- Forming Horizon Europe partnerships and writing the proposal (Next 6 months)
- Establishing a formal steering committee/advisory board for the Exemplar
- Implement Section 3 of the GOOS Carbon Plan
- Engage and coordinate with the GOCO initiative
- Convene HE discussions at Once Ocean Science and UNOC

Exemplar Plans 2026 - 2027

- Following a successful HE proposal:
  - Co-design a governance system that can identify key data products that make the global ocean carbon observing system investable and that can manage public-private partnerships (pilot in the North Atlantic)
  - Co-design and implement a North Atlantic OSSE that meets the needs of end-users

What support is needed from the Programme or other organizations ?

Need Communications, visibility, and messaging to ensure proper integration

Connections (WMO, Ocean Decade, GOOS Panels, networks, GRAs, IOC, philanthropic organisations, others)?
- official endorsement from GOOS for the Exemplar work, including NACO, as part of a GOOS Ocean Carbon Plan
- clear work areas and connections with the BGC Panel

Funding for specific actions:
- Steering committee honoraria
- Workshops to engage Horizon Europe partners at Once Ocean Science and UNOC
- Fundraising for co-design workshops

Objectives & Expected outcomes

Objectives

- Explore the integration of Co-Design Programme and Exemplar observing and modeling communities towards design and delivery
- Consider what needs to be done to bridge gaps between observing and modeling communities, ensuring that observational data is effectively utilized in predictive models and decision-making tools with a focus on operational prediction systems

Expected outcomes

- Identify strategies for enhancing connectivity between observing and operational modelling communities in the Exemplars and
- towards defining the work of the Accelnet funded workshop.
-

— Questions for discussion

- What have we learnt across the different Exemplar projects and application areas, including the integration of observations and modeling, and what might constitute best practice?

  - **Do we know who are the partners and their expertise in each Exemplar?**

  - **Do we know any best practices of integrating observations-modelling from Exemplar reports?**

— Questions for discussion

- What are the main **barriers** to integrating new (and existing) observations into operational model practices, particularly regarding observation availability, accessibility, and assimilation into models?

    - **observation availability: sustainable funding, optimal sampling strategy, cost-effective monitoring platforms**

    - **accessibility: NRT delivery of ship data and BGC data, access to non-operational observations**

    - **assimilation into models: availability of read2use assimilation schemes, aggregated, quality assured, read2use observations, unbiased model system, computing resources**

— Questions for discussion

- How can **co-design principles address these challenges** and enhance the integration of observations and modeling efforts?

    - Mapping the relevant communities in individual Exemplars
        - BC: SAEON– S. Africa Forecasting center
        - TC: TC Forecasting Centers – National & Regional ocean observing system (gliders, robotics)
        - MC: BIO-Argo/RV fleets/ICOS/SOCCOM – Copernicus Marine BGC Community
        - MHW: Argo/Go-SHIP/RV cruises/Buoy arrays – SynObs systems, Copernicus MFCs, national forecasting centers
        - SS: tide gauge network – national forecasting centers, Copernicus MFCs

    - Mapping usages of observations in modelling in Exemplars

    - Briding observing community and modelling community in individual Exemplar

    - Briding Exemplar (BC, TC, MHW) observation community with SynObs in case The Exemplars do not have capacity of OSE/OSSE

— Questions for discussion

• What types of observational data are most critical for operational models, and where are the gaps in observations, availability, accessibility, and integration?

	Variables	Spatial area
BC	T/S/currents	Areas with BCs: shelf-Abyssal sea continuum
TC	Met-ocean, T/currents	Tropical/subtropical, esp. areas within 72h warning range
MHW	Met-ocean, T/currents	Global esp. subsurface & coastal shelf seas
SS	Sea level, waves	Coastal seas and nearshore
MC	pCO2,POC/PIC,DOC/DIC, PH, BGC	Global, esp. river2sea continuum
ML	BGC,LTL,biodiversity	Global, esp. high productivity areas eg those with BCs, estuaries

— Questions for discussion

• What do we learn from SynObs?

SynObs OSE/OSSEs tell impacts of ocean observations on improving large-scale model results. However, most of them are designed to tell general impacts so that little practical suggestions are obtained for identifying gaps and how to improving existing networks based on the OSE/OSSEs. Furthermore, there are few interactions between SynObs and Exemplars. Hence SynObs should work more with observation communities, esp. in Exemplars, to perform fit-for-purpose (responsive) OSE/OSSEs

— Questions for discussion

- How can the observing and modeling community work together more effectively?

The observing and modelling communities should co-design and co-develop impact assessment and optimization of ocean observing systems.

- The observation communities should present to the modelling community with existing observing capacity and data availability, and future plans and challenges such as where to deploy the sensors to monitor key processes.

- Both communities co-design OSE/OSSE experiments

- Observation community provide data to modelling community

- Modelling community perform modelling experiments with and without observations

- Both communities co-analyze results, assess impacts of existing/proposed sampling strategy, identify areas with largest model uncertainties, and propose improved sampling strategy.

DCO – OCEAN OBSERVING

VISION & STRATEGY

DCO – OCEAN OBSERVING VISION

Institutional strategy: Cohesive, coordinated and interoperable ocean observing systems; global, regional and national

Prioritization of societally relevant observing requirements: Geographic & Thematic.

END-USER APPLICATIONS

Standardization around universally agreed EOVs, ECVs and measurement & data management best practice.

Community Engagement: Private sector and societal participants in the Blue Economy and a healthy Ocean

WHAT

HOW

Capacity Development: Ensure equitable access to observational data and technology for all stakeholders

Sustained Ocean financing: Innovative, long-term finance for a sustainable Global Ocean Observing system

Technology Development: Autonomous & low-cost sensors. Complementary use of remotely sensed & in-situ data

WHy?

A global ocean observing system responsive to the needs of end users; enabling a healthy, resilient ocean and sustainable blue economies.

Ocean Observing — Ocean Decade Coordination Office

Ocean Prediction — UN DECADE COLLABORATIVE CENTRE

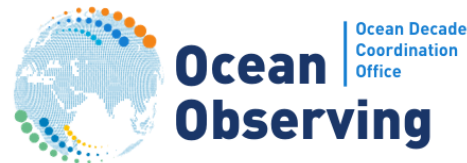Ocean Data Sharing — Decade Coordination Office

A truly global ocean observing system

responsive to the needs of end users;

enabling a healthy, resilient ocean and

a sustainable Blue Economy.

DCO – Ocean Observing

Prioritization of societally relevant observing requirements: Geographic & Thematic.

Standardization around universally agreed EOVs, ECVs and measurement & data management best practice.

Capacity Development: Ensure equitable access to observational data and technology for all stakeholders

Technology Development: Autonomous & low-cost sensors. Complementary use of remotely sensed & in-situ data

DCO – Ocean Observing

How we achieve this vision
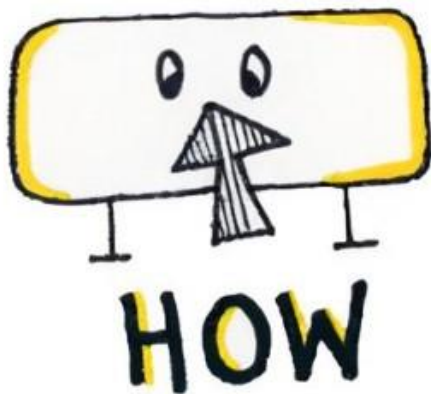
Institutional strategy:

Cohesive, coordinated and interoperable ocean observing systems; global, regional and national

Community Engagement:

Private sector and societal participants in the Blue Economy and a healthy Ocean

Sustained Ocean financing:

Innovative, long-term finance for a sustainable Global Ocean Observing system
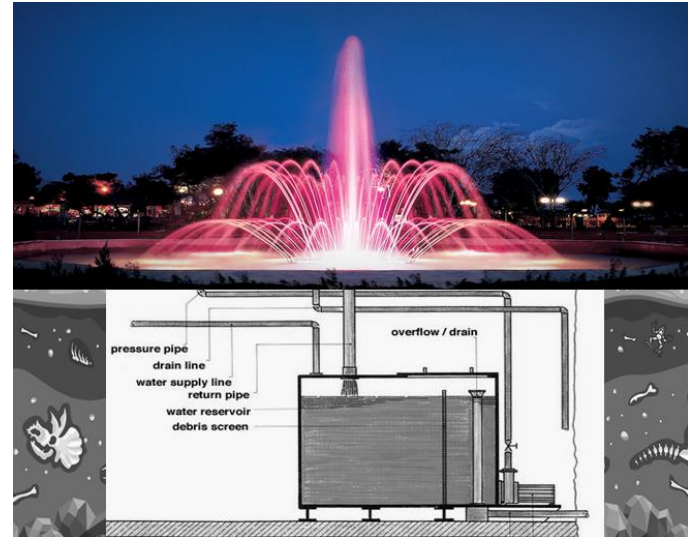
DCO – OCEAN OBSERVING

PLAN FOR YEAR-2

KEY MESSAGES

The Ocean Observing system of today was designed to answer the questions we had about the ocean yesterday

Sparkly fountains

require

robust plumbing systems

Ocean Data Digital Ecosystem

•Communication of Status: Phase I completion

- Develop a communications package for the Decade community:

  "Phase I is now complete; we are now moving to Phase II"

•Go-to-Market Strategy: Phase II Implementation

- Develop the strategy to socialize the concepts and benefits of the proposed decentralized but interoperable digital ecosystem.

- Commence implementation of the strategy

THREE PILLARS OF OCEAN OBSERVING

Develop the strategy for a fit-for-purpose global ocean observing system:

- Scientific / Governmental Pillar:
  - GOOS 2.0
  - Support mentoring of Scientific Leads in communicating with non-scientists.

- Corporate Sector Pillar
  - IOC membership in ORRAA
    - Organize two (2) ORRAA Workshops:
  - Continue engagement with the Corporate Data Group via Peter Burger, DCU
 - Continue engagement with the World Ocean Council

- Bluetech Pillar:
  - Possibility Ocean Summit.
  - Engage with the Technology & Innovation Working Group re their Bluetech contacts
  - Engage with MTS / Ocean Enterprise Initiative
  - Engage with the three (3) currently endorsed Bluetech Projects in the Decade. ODN / FVON

THE THREE PILLARS OF OCEAN OBSERVING

Sustainable Blue Economy

Scientific / Governmental | Corporate | BlueTech / Financial

Global Ocean Observing System
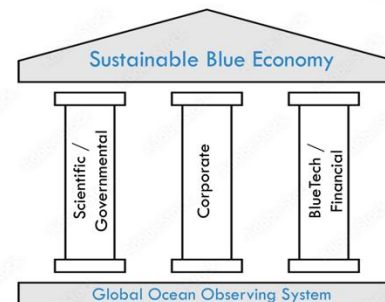
TRANSFORMATIONAL ALIGNMENT

Ocean Decade Coordination Office

Ocean Observing

Description

Form ad hoc communities that assesses the key areas of importance for the Decade with regard to Ocean Observing.

- ○ Focus to be on a handful of **Transformational projects**

- ○ **Leverage** off our most proactive Programmes, our DIPs, some external groups (COL, OEI, etc.)

- ○ Focus on end-user **beneficial outcomes**

Objectives & Key Results:

- A **concept paper** is created and agreed upon; setting forth the purpose, strategy, and membership of an OOCC

- Desired members are 'signed on' by **end January 2025**

- **First meeting** in February 2025

- **First initiatives** planned and implemented by April, 2025

DCO – OCEAN OBSERVING

Alignment with & Support for
the Co-design Programme
and the Exemplars

OCEAN DECADE STRATEGIC COMMUNICATIONS GROUP

MENTORSHIP PROGRAM
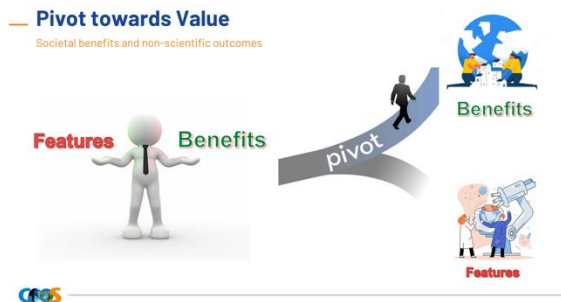
Requirement

Resource

Programme Uptake

- Co-Design:
- DOOS:
- CoastPredict
- OASIS:
- MarineLife2030

Implementation
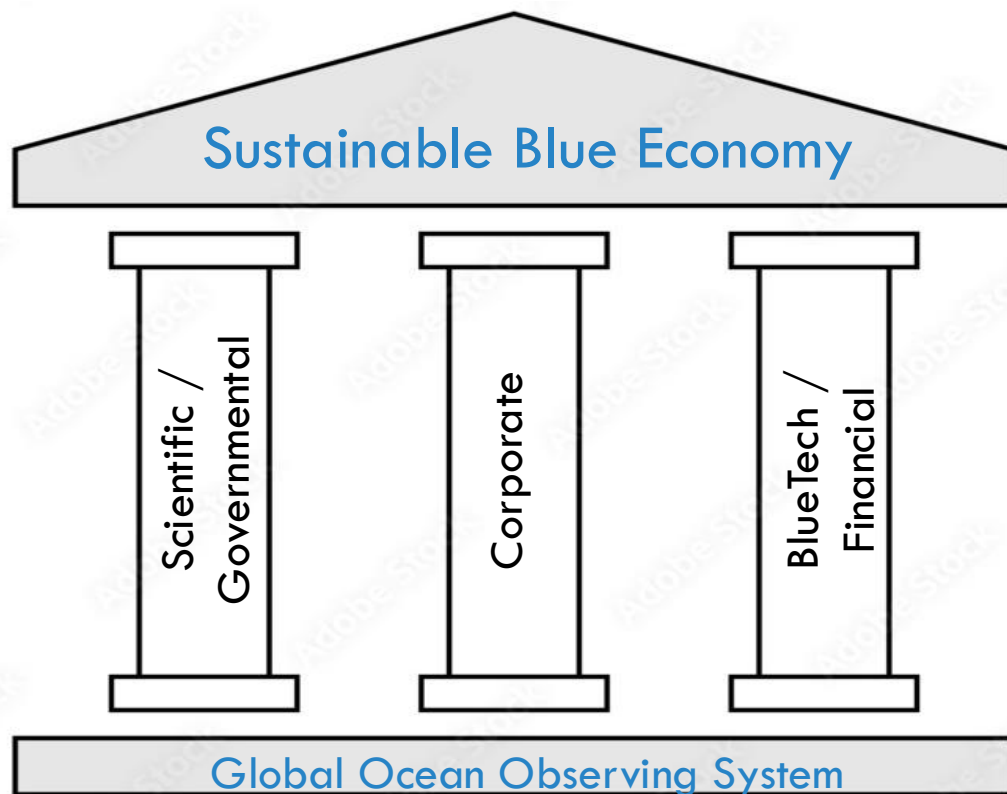
SCIENTIFIC / GOVERNMENTAL
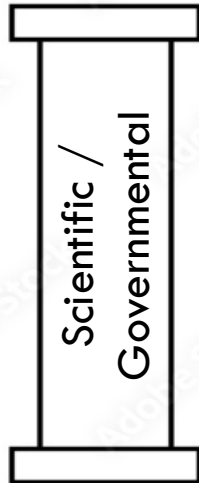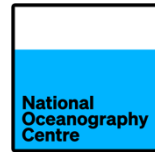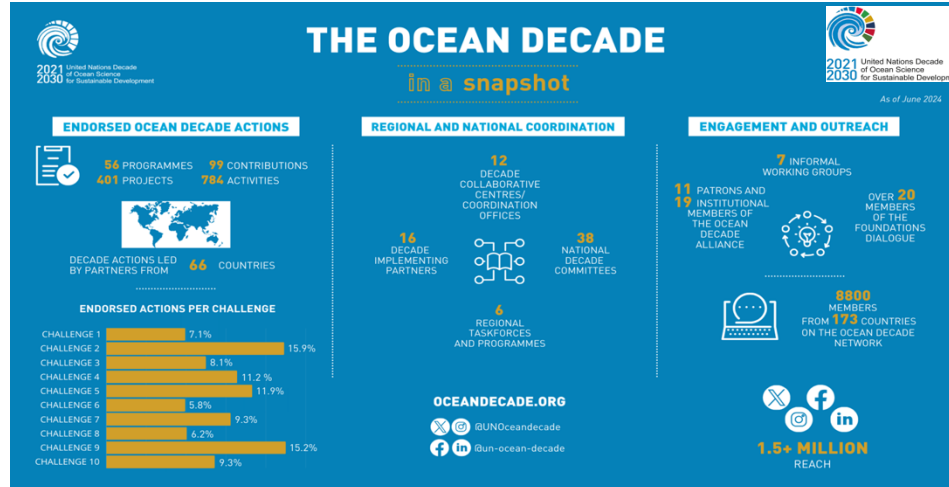
CORPORATE

Corporate

OCEAN DECADE CORPORATE DATA GROUP

Unlocking privately-held ocean data for the benefit of science
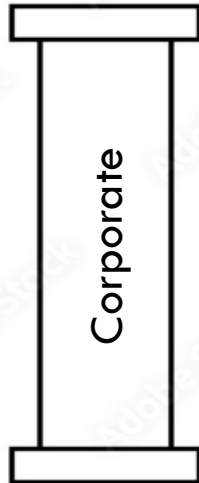
Ocean Decade Corporate Data Group

Institutional members

BlueTech / Financial
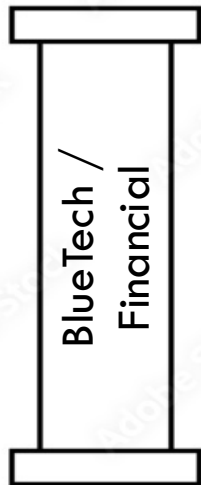
POSSIBILITY OCEAN

DESIGNING FOR GLOBAL IMPACT WITH OCEAN OBSERVING

Possibility Ocean

"By bridging the gap between the public and private sectors, we can create a coordinated ecosystem that accelerates the collection, synthesis, and application of ocean data."

Ocean Decade Coordination Office
Ocean Observing

1000 OCEAN STARTUPS
1000 Ocean Start-Ups Coalition - Ocean Decade

SEAWORTHY COLLECTIVE
OCEAN SCIENCE & EXPLORATION · INNOVATION & ENTREPRENEURSHIP
Seaworthy Collective - Ocean Decade

MTS marine technology society
OCEAN ENTERPRISE INITIATIVE

ORRAA

OCEAN RISK & RESILIENCE ACTION ALLIANCE

Our membership includes private finance and insurance partners representing trillions of dollars of assets under management, as well as governments, multilateral institutions and civil society.

Our core focus is to drive investment into building coastal and ocean resilience through finance and insurance products that reduce risk and create more financially and socially resilient communities – an avenue to sustainable development.

Institutional Partner

Three Pillars engagement
- Insurance (AXA, etc.)
- Finance

Member workshops:
- Biodiversity Credits & EOVs
- Carbon Credits

Funding & Partnership Opportunities

POSSIBILITY OCEAN

BLUETECH / CORPORATE / SCIENCE

Ocean Observing
Ocean Decade Coordination Office

TURNING UNCERTAINTY TO OPPORTUNITY WITH OCEAN DATA

The Possibility Ocean Summit invites business leaders, innovators, and decision-makers to unite around a shared challenge: understanding and harnessing the power of our oceans to navigate unpredictable risks and unlock untapped opportunities.

INNOVATORS & INVESTORS

Engage with a dynamic ecosystem of Bluetech companies and corporate leaders to uncover opportunities for scaling transformative solutions.

CORPORATE & INDUSTRY EXECUTIVES

Unlock competitive advantages and mitigate risks by connecting with entrepreneurs and partners to shape markets and revolutionize industries.

COASTAL & OCEAN BUSINESSES

Strengthen your competitive edge with ocean observation and data-driven strategies to mitigate the increasing threats of climate-related disruptions.

REGIONAL & NATIONAL POLICYMAKERS

Leverage innovative solutions and forge partnerships to enhance weather prediction, drive conservation efforts, and safeguard commerce and national security.

[Possibility Ocean](#)

VIRTUAL SUMMIT | MARCH 18, 2025 | 1-4PM ET

Session 19:

Discussion on Programme Communications

Lead :

Cristina Miño

— Previous Discussions in Communications

Action areas:

Representation and Visibility:

- Update our messaging (tackle perception that this is a US programme) focus on improving visibility and representation reflecting global nature, partners, support, evolution, governance and work ahead.

Communication materials

- Develop updated Co-design PPT
- Update Programme page on GOOS website
- Visual of Work Plan
- Map with locations and contacts
- Create short briefs (PPT or PDF or both) on the exemplars and the programme
- Create an integrated timeline as a comms piece that they put into and a map with locations and contacts - what is coming up this year…

Questions for discussion:

- What updates are needed for the Co-Design Programme website to ensure it reflects current activities, partners, and goals?
- What should our first pitch deck contain? How can we create a unified and effective pitch for the Co-Design Programme, and what specific "asks" should be included for each Exemplar? Can we apply the suggestions of the Strategic Communications Group
- Should we develop mini pitches for Exemplars using materials from events like the Ocean Decade Conference? If so, what format would work best for the website and outreach?
- How can we ensure PowerPoint templates remain up-to-date and adaptable, including slides on Exemplars, locations, and partners?
- What communication strategies should we prioritize for key events like UNOC to showcase Co-Design and GOOS in the Ocean Decade effectively?
- How can we maintain a consistent and professional approach to all Programme-related communication materials?

Session 20:

Review and Refinement of the Work Plan

Lead :

Bernadette Sloyan

— Questions for discussion:

- Which areas of the draft work plan require greater emphasis or additional detail?
- Are there any areas where the proposed actions or resources could be reduced or streamlined?
- Do the priorities outlined in the work plan align with the Programme's strategic goals and needs?
- Are there any gaps in the work plan that need to be addressed to ensure its effectiveness?
- How can we ensure the work plan remains adaptable and responsive to emerging needs and opportunities?