



The Global Ocean Observing System
goosocean.org

The Global Ocean Observing System **2030 Strategy**

Toste Tanhua

GOOS co-chair

Albert Fisher

GOOS Director



IOC



WMO



UN
environment

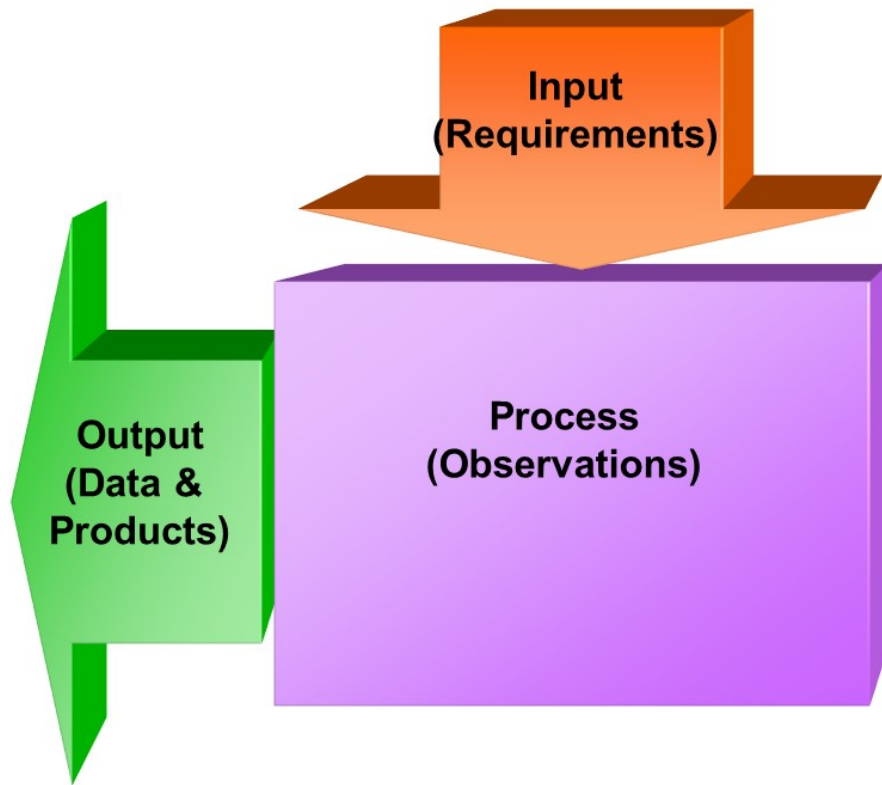


International
Science Council

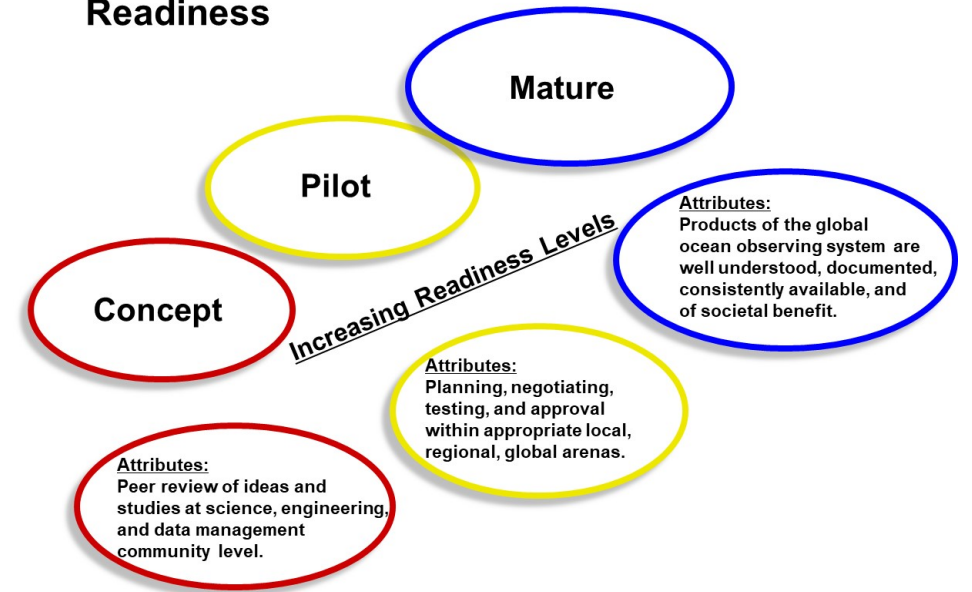
The Framework for Ocean Observing has transformed ocean observing the last decade

Framework for Ocean Observing

A simple system

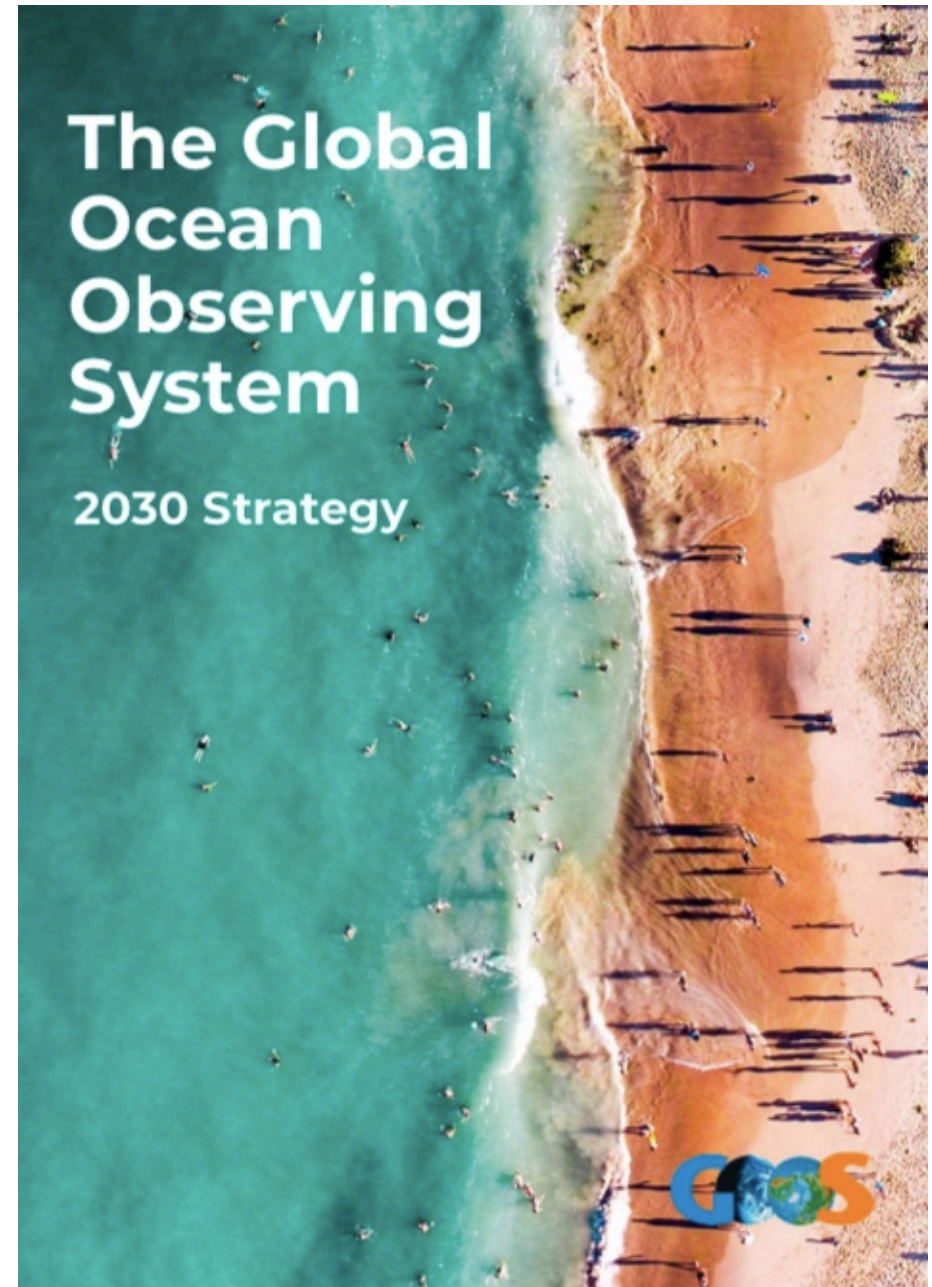


Towards sustained system: requirements, observations, data management
Readiness



An ambitious strategy for the Global Ocean Observing System

Implementing this strategy will demand a step change in the level of effectiveness of partnerships across the scientific and end-user communities.



Why a new strategy?

Increasing demand for an improved evidence and information base for:

- Policy
- Sustainable development
- Environmental management
- Safety, industry, defence

Ocean information will be essential to supporting evidence-based decisions on the pathway to sustainable development.



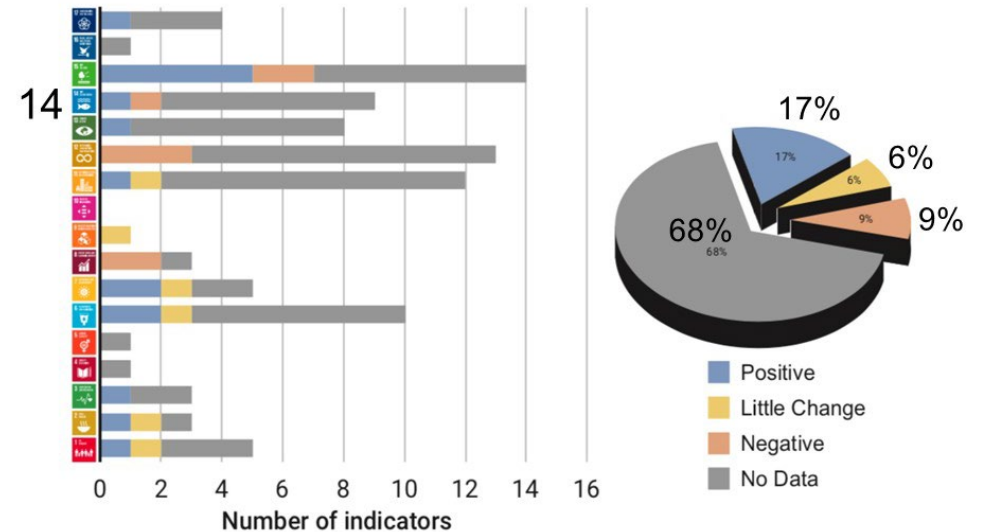
Why an improved Ocean Observing System



Greater knowledge based on continuous ocean observations will be needed to better understand climate change & variability, and ocean, weather and environmental hazards.



Figure 1. SDG Tree



We need a step change in ocean observing

We will need:

- Growing integrated observing capacity
- Proliferation of output systems
- Improved connection from observations to users

We struggle to get the recognition and support required to build and sustain the ocean observing, data and information system the world needs.





The need for expansion of a global ocean observing system, designed to meet the requirements of a broad suite of users, is clear and urgent.

Vision

A truly global ocean observing system that delivers the essential information needed for our sustainable development, safety, wellbeing and prosperity.



Mission



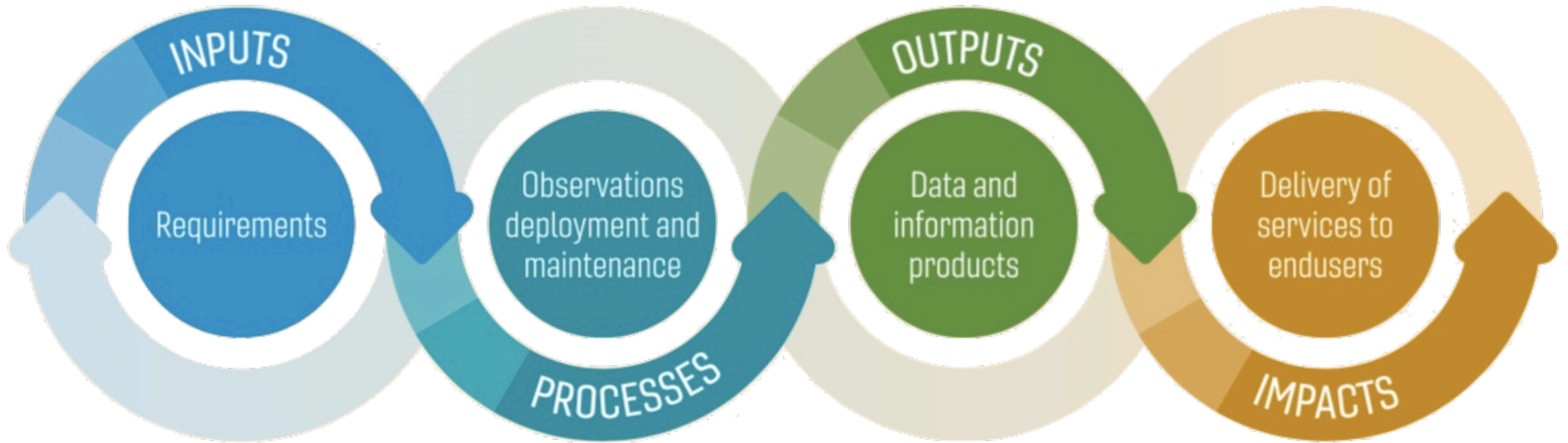
To lead the ocean observing community and create the partnerships to grow an integrated, responsive and sustained observing system.

3 Key application areas

Climate

Ocean health

Operational services



11 Strategic objectives

- Deepening Engagement and Impact
- System Integration and Delivery
- Building for the Future



The Strategic Objectives

<p><i>Deepening Engagement & Impact</i></p>	<p>SO1: Strengthen partnerships to improve delivery of forecasts, services, and scientific assessments.</p>	<p>SO2: Build advocacy and visibility with stakeholders through communicating with key users and national funders.</p>	<p>SO3: Regularly evaluate system impact to assess fit for purpose.</p>	<p>SO4: Strengthen knowledge and exchange around services and products, to boost local uptake.</p>
<p><i>System Integration & Delivery</i></p>	<p>SO5: Provide authoritative guidance on integrated observing system design, synthesizing across evolving requirements and identifying gaps.</p>	<p>SO6: Sustain, strengthen and expand observing system implementation through GOOS and partner communities, promoting standards and best practice, and developing metrics to measure success.</p>		<p>SO7: Ensure GOOS ocean observing data and information are findable, accessible, interoperable, and reusable, with appropriate quality and latency.</p>
<p><i>Building for the future</i></p>	<p>SO8: Support innovation in observing technologies and networks.</p>	<p>SO9: Develop capacity to ensure a broader range of beneficial stakeholders participation.</p>	<p>SO10: Extend systematic observations to understand human impacts on the ocean.</p>	<p>SO11: Champion effective governance for global in situ and satellite observing, together with partners and stakeholders.</p>

Working together for a better future



The Strategy is grounded in building effective **partnerships for delivery**

We envision this fully integrated 2030 ocean observing system as providing the critical ocean information needed to address climate change, generate forecasts, protect ocean health and support sustainable growth, and with participation involving all nations.

A fully-integrated ocean observing system will deliver ocean information across three key application areas: operational services, climate and ocean health.



Vision

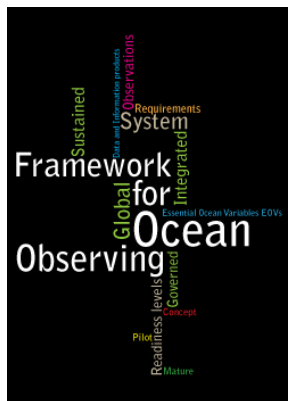
A truly global ocean observing system that delivers the essential information needed for our sustainable development, safety, wellbeing and prosperity

Mission

To lead the ocean observing community and create the partnerships to grow an integrated, responsive and sustained observing system



GOOS structure 2019



Sponsors: IOC/UNESCO, WMO, UN Envi, ICS

GOOS Steering Committee

Requirements & Evaluation

- GCOS-GOOS-WCRP Physics & Climate (OOPC)
- GOOS Biogeochemical Panel (IOCCP)
- GOOS Biology & Ecosystems Panel

Data & Information

links to IODE, WMO Information System

Observations

- JCOMM Observations Coordination Group
- JCOMMOPS
- Observing networks
- GOOS Regional Alliances
- National systems

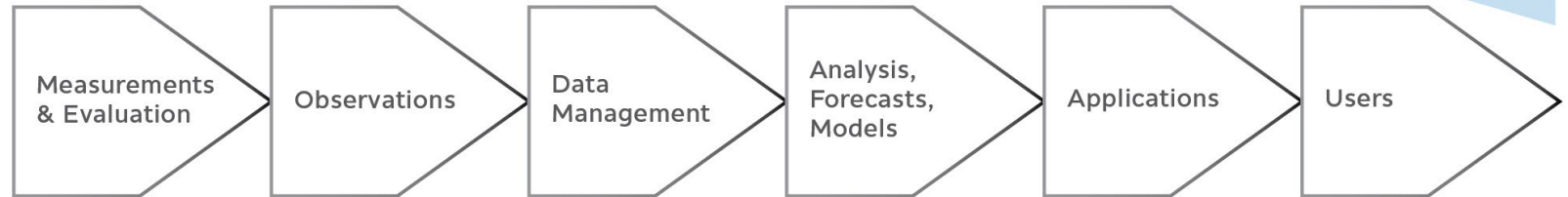
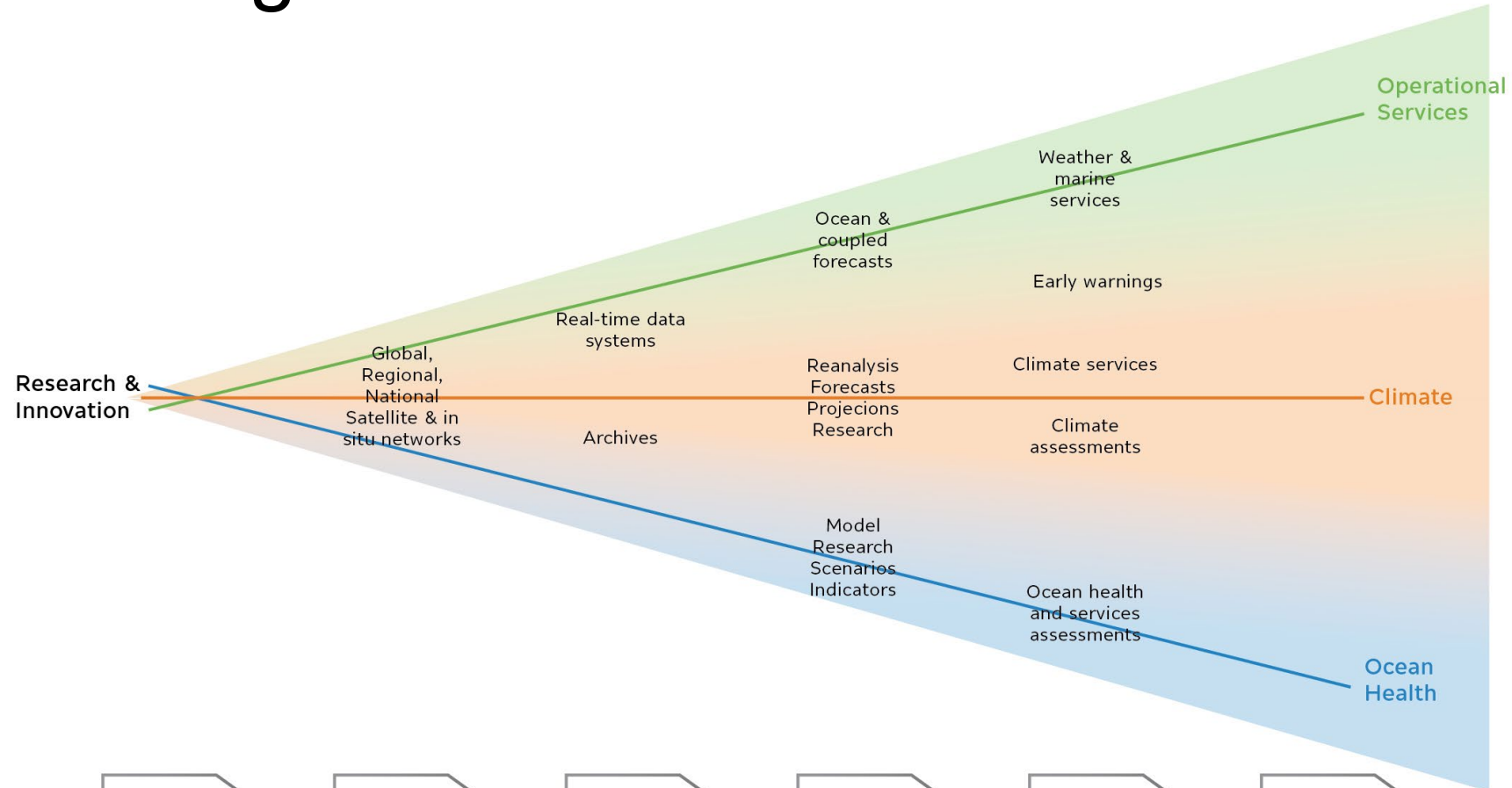
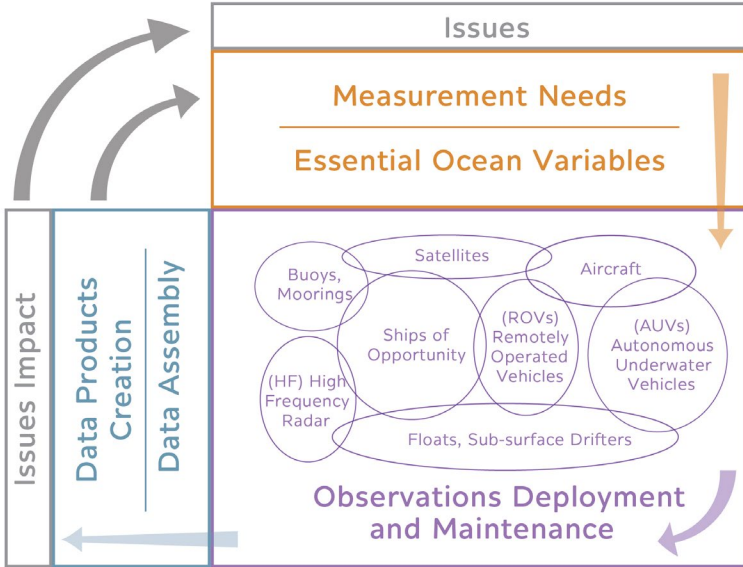
Projects

- TPOS 2020
- DOOS
- AtlantOS
- MESCAT



The Ocean Observing Value Chain

Framework for Ocean Observing Process Diagram



GOOS Value Chain





A Roadmap for the Implementation of the Global Ocean Observing System 2030

August 2019 Draft for an open planning process



The Implementation Plan - „A Roadmap“

Built on the 11 Strategic Objectives, this is a roadmap to develop an implementation plan with our partners, and harvesting the input from the larger OO community to OceanObs'19

- Initial phase through 2019; evolution of the current draft document with input from the community.
- An Initial Implementation Plan in early 2020, with input from partners and from the OceanObs'19. Definition of some partner roles and including 3-5 year large scale actions
- Regular and ongoing cycles of evaluation, which will adapt to the evolving governance process

The Implementation Plan - Priorities

GOOS PRIORITIES

- SO1. Strengthen partnerships for delivery
- SO2. Advocacy and communication
- SO6. Strengthen observing implementation
- SO7. Open data (FAIR data)
- SO9. Guide capacity development

These five priority Strategic Objectives are the most developed in this initial Implementation Plan, along with current core GOOS activity areas:

- SO5. Authoritative guidance on design

In addition, as collaboration and partnership expand and this plan evolves, a broader governance for a truly integrated Global Ocean Observing System will also need to evolve.

- SO11. Champion Effective Governance



The Implementation Plan – SO1 as example

GOAL 1: Strengthen partnerships to improve delivery of forecasts, services, and scientific assessments

Deepen engagement and partnership through the value chain from observations to end users, in order to advance the impact and use of the observations, and to improve visibility of the work of the observing system.

Meeting the four strategic objectives under this goal will require increased partnership along the value chain, and between observing communities at different scales, from local, to national, regional and global.

Issue:

- Fundamental lack of connection across the value chain,
- Limits our ability to implement end-to-end design and ensure fit for purpose delivery of information,
- Limits our ability for the system to be responsive to users through feedback loops.

Implementation:

- GOOS and the community to work on building strengthened engagement with new and existing partners to improve the interface from ocean observing networks and data systems to key intermediate users across climate, operational services and marine ecosystem health applications and services.
- Establishing partnerships with key ‘super’ or ‘intermediary’ users supporting end-users in areas that have a high societal impact in order to enhance the value chain from observations to end use.
- Make a major leap forward in establishing partnerships to link sustained observations and scientific assessment for sustaining threatened ocean ecosystem services.

The Implementation Plan – SO1 as example

Outcomes:

- A strengthened, responsive and delivery-focused observing system;
- An increase in fit-for-purpose ocean information products (forecasts, indicators, coastal warning) based on sustained observations
- Ability to evaluate system for adequacy in meeting societal needs
- Improvement in the sustainability of the observing system individual components through visibility of how observational data contributes to critical services

Role of GOOS (to stimulate discussion)

- GOOS will actively develop partnerships with key organizations to develop connection and feedback loops along the value chain, initially concentrating on data delivery to key intermediate service providers and areas that are high societal priorities

Potential partners (to stimulate discussion)

- WMO is a key delivery partner for weather, maritime and climate services, the global modelling community is also a key partner across the delivery areas