



*Vision*

# *The science we need for the ocean we want*

The United Nations Decade of Ocean Science for Sustainable Development (2021-2030)



*Mission*



United Nations  
Decade of  
Ocean Science  
for Sustainable  
Development

*To generate and use knowledge for the transformational action needed to achieve a healthy, safe, and resilient ocean for sustainable development by 2030 and beyond*

# Transforming from the 'Ocean we have' to the 'Ocean we want'

***"The ocean we have"***

***"The science we need"***  
UN Decade of Ocean  
Science for Sustainable  
Development

Decade Scientific  
Objectives

***"The ocean we want"***

*A clean ocean*  
*A healthy and resilient ocean*  
*A predicted ocean*  
*A safe ocean*  
*A sustainably harvested and productive ocean*  
*A transparent and accessible ocean*

# Decade Action Hierarchy



## Decade Programme

- Global or regional in scale
- To fulfil one or more of the Decade objectives.
- It is long-term (multi-year), interdisciplinary and typically multi-national.

## Decade Project

- Discrete and focused undertaking of a shorter duration.
- It may stand alone, but will typically contribute to an identified Decade programme

## Decade Activity

- In support of an outcome, objective, programme, or project.
- Typically a one-off standalone activity
- It can form part of a programme or project or can relate directly to a Decade objective.

## Decade Contribution

- Supports the Decade through provision of a necessary resource
- A contribution can support implementation of a Decade Action or for coordination costs, and be in-kind or financial.



# ForeSea – The Ocean Prediction Capacity of the Future

***Vision:*** Strong international coordination and community building of the ocean prediction capacity for the future.

## ***Overarching goals***

- Improve the science, capacity, efficacy, use, and impact of ocean prediction systems.
  - Build a seamless ocean information value chain, from observations to end users, for economic and societal benefit.
- => make ocean prediction science more impactful and relevant.

*Lead institution:* OceanPredict (OceanPredict.org)  
*Co-Chairs:* E. Chassignet, F. Davidson, Vinayachandran P.N.



# ForeSea: Transformative and beyond “business as usual”

## ➤ OceanPredict:

- International coordination mechanism across national centers to exchange on & improve prediction system science
- However, the impact and relevance of advances in ocean prediction towards *societal benefits* are not quantified, evaluated, or communicated.

## ➤ ForeSea's Vision:

- Strong international community building of the ocean prediction of the future that not only:
  - advances prediction science, but also
  - increases capacity, efficacy, use, and impacts of the ocean predictions systems.
- An effective and sustainable operational oceanography ecosystem environment responsive to user needs.





# ForeSea: Transformative and beyond “business as usual”

- Democratization of ocean information to enable more impactful engagement
- Creation of an effective and sustainable operational oceanography ecosystem environment responsive to user needs.
- Establishment of a framework for operational oceanography that enables scientists and stakeholders to engage and collaborate with
  - all components of the value chain and
  - the UN Decade programmes associated with these components
- Enhancement of communication of the impact and relevance of ocean prediction



# Foresea: Transformative and beyond “business as usual” of OceanPredict

- ForeSea will co-create a framework for operational oceanography enabling scientists to engage/collaborate with
  - all components of the value chain as well as
  - the UN Decade programs associated with these componentsto create an effective and sustainable operational oceanography ecosystem environment responsive to user needs.
- ForeSea will enhance communication of the impact and relevance of ocean prediction



# ForeSea will engage above and beyond national prediction center activities

- Democratize ocean information to enable more impactful engagement:
- ForeSea will collaborate with and leverage data access platform programs (e.g. DITTO, CoastPredict, ObsCoDe) to provide inclusive
  - fit for purpose accessibility ease to ocean observations, ocean prediction outputs, and ocean system information
  - In an equitable manner enabling least developed countries and small island development states to access and benefit from ocean information.
- Engage diverse stakeholders in co-design processes via existing or emerging partnerships with UNEP, Geo Blue Planet, WOC, WMO, and IOC GOOS and with other decade programs such as CoastPredict and Marine Life 2030.
- Call for projects – building on OP TTs and new working groups.





# Capacity Development

Distributed capacity across the globe,  
generations, and genders



Reverse asymmetry in knowledge,  
skills and access to technology



Focus on capacity to do the science, to understand relevance to society,  
and to exploit it for informed decisions for sustainable development

# A ForeSea Objective: A Centralized Information Platform

- ForeSea will be the centralized international platform that assembles and advertises ocean prediction capabilities, its impact and where/how to find it.
- ForeSea will work with the DCC for Ocean Prediction at Mercator Ocean International to establish a global forum to support ocean prediction collaboration, to provide a forum for creating standards and best practices for ocean prediction products and ensure a structured seamless information flow within the operational oceanography value chain through co-development with other UN decade programs that focus on observing systems, data management, end user engagement, and capacity development.
- ForeSea will enable least developed countries and small island development states to access state of the art ocean information, in a manner that empowers them. ForeSea will also provide training and engagement opportunities by reaching out to young academics and early career ocean professionals to ensure ocean prediction literacy outreach in all countries.



# Update - 1

1. Creation of an advisory committee: Next meeting will take place later this summer to go over the recommendations of the OceanPredict task teams on how best to promote and act on ForeSea's objectives.
2. On-going discussion on establishing a ForeSea project office (ideally two persons – Eurasia/Africa and America/Pacific)
3. Working toward the goal of establishing a portal (collaboration with OP DCC) that would
  - a) summarize the international status and availability of ocean assimilation and prediction (blue and green - global, regional, and coastal) with regular updates of capacity, i.e. communications – conversation with the new OP operational systems working group
  - b) provide a description of available resources (observations and models) and how to access them
  - c) have tutorials on basic setups of models and data assimilation as well as their limitations
  - d) linkages and collaborations with other Decade programmes (linkages with CoastPredict, ObsCoDe, DITTO, MarineLife2020, etc. )
  - e) be in place by the OceanPredict/ForeSea '24 conference



# Update -2

Two projects hosted by ForeSea

- 1) **Synergistic Observing Network for Ocean Prediction (SynObs) by MRI Japan** - SynObs is being proposed as a common comprehensive Decade Project to the three Decade Programmes, ForeSea, CoastPredict, and Observing System Co-Design. SynObs will seek to extract maximum benefit from combining various observation platform measurements, typically satellite and in situ observation data, or combinations of coastal and open ocean platforms for ocean/coastal predictions.
- 2) **Integrating Coastal Hazard Warning Systems for the Tropical Americas and Caribbean (TAC) by UNESCO IOC IOCARIBE** - Co-Design, Co-Production and Co-Delivery of Integrated Multiple Coastal Hazard Early Warning System and Services for the Tropical Americas and Caribbean. The project will prioritize the integration of existing and new coastal hazards early warning systems and services considering four components: Monitoring and Warning, Risk Knowledge, Warning Dissemination and Communication, and Response Capabilities, supported by capacity development.