



United Nations  
Educational, Scientific and  
Cultural Organization

Organisation  
des Nations Unies  
pour l'éducation  
la science et la culture

Organización  
de las Naciones Unidas  
para la Educación  
la Ciencia y la Cultura

Организация  
Объединенных Наций по  
вопросам образования  
науки и культуры

• Intergovernmental  
Oceanographic  
Commission

• Commission  
océanographique  
intergouvernementale

• Comisión  
Oceanográfica  
Intergubernamental

• Межправительственная  
океанографическая  
комиссия

# IOC's Sub Commission for Africa and the Adjacent Island States (IOCAFRICA)

**Mika Odido**  
**IOC Coordinator in Africa**



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Oceanographic  
Commission

UN focal point for ocean science, ocean observations and services, data and information exchange and capacity building

Established in 1960  
150 Member States

## IOC VISION

Strong *scientific understanding* and *systematic observations* of the changing world ocean climate and ecosystems shall *underpin sustainable development and global governance* for a healthy ocean, and global, regional and national management of risks and opportunities from the ocean.



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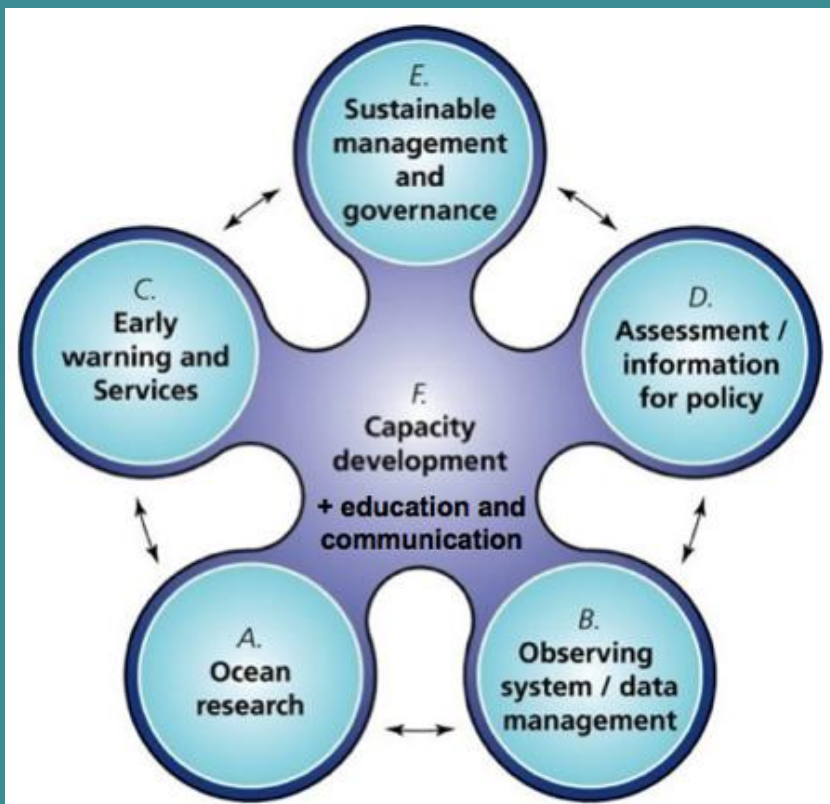
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Oceanographic  
Commission



Sustainable  
Development  
Goals

**One Planet, One  
Ocean**

# IOC: Secretariat, Planning & Activities



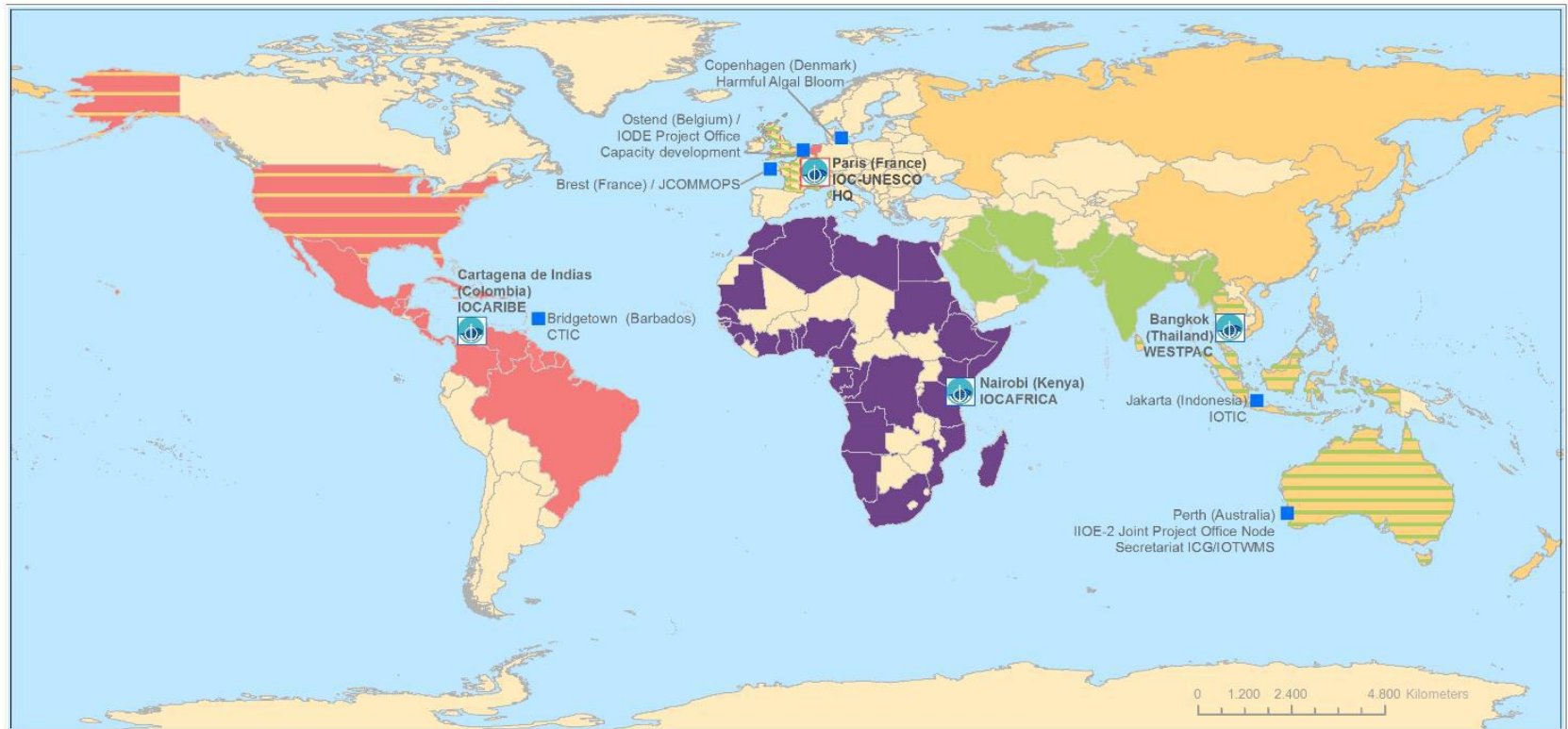


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## Intergovernmental Oceanographic Commission of UNESCO IOC Sub-commissions, Programme and Project Offices



IOC-UNESCO/MPR, 2016

The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the IOC-UNESCO.

-  IOCAFICA Member States
-  IOCARIBE Member States
-  IOCINDIO Member States
-  WESTPAC Member States

-  IOC-UNESCO Secretariat
-  IOC Sub-Commissions
-  IOC Programme and Project Offices



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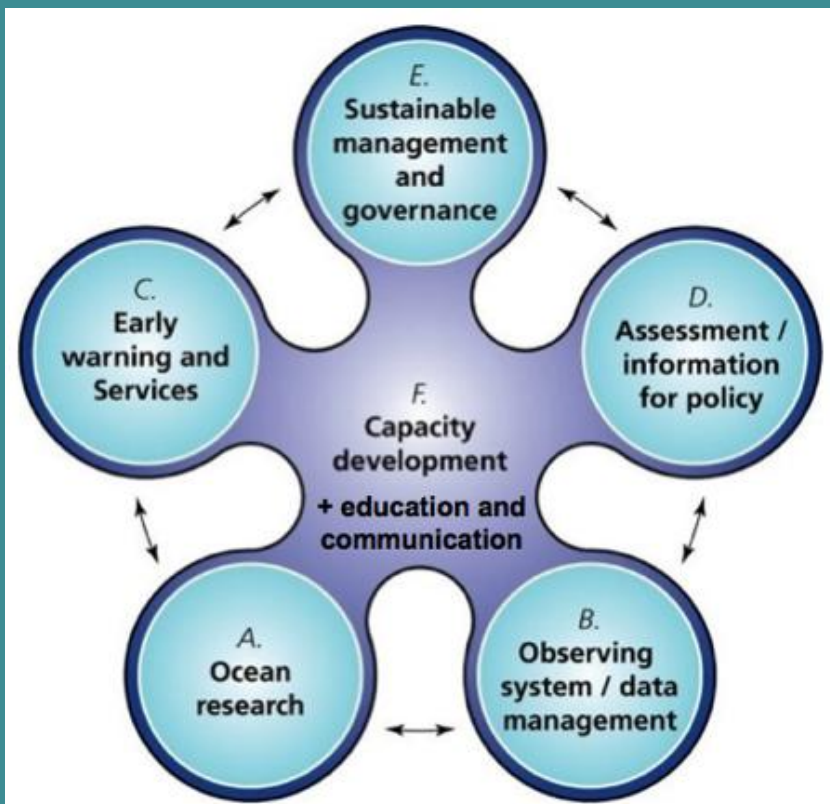
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# IOC: Secretariat, Planning & Activities



# Function A: Ocean Research

*(Ocean science is a shortcut to sustainable development)*

## Portfolio:

- Developing science content of the Decade
- Developing networks + cooperation (ICSU, SCOR, Future Earth, WCRP), ...
- Ocean Acidification (with IAEA), GOAON
- Blue Carbon Initiative (with UICN, CI, a number of Governments)
- Ocean Oxygen (GO2NE)
- Phytoplankton Trends (TrendsPO)
- Marine Ecological Time Series (IGMETS)
- Ocean and climate – a major theme
- Plastics and microplastics – e.g. via GESAMP
- Harmful Algal Blooms (desalination), with SCOR
- Global Ocean Science Report
- Active regional work, especially in WESTPAC



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# Some Highlights of Function A: Ocean Research

- Ocean Acidification



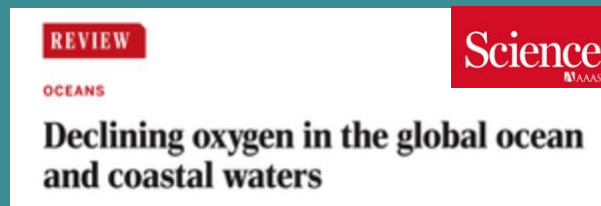
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**Development of the methodology for indicator 14.3.1**

- Ocean Oxygen



->



->

- Global Ocean Science Report – 2 (portal, indicator of SDG Target 14.a, release 2020)



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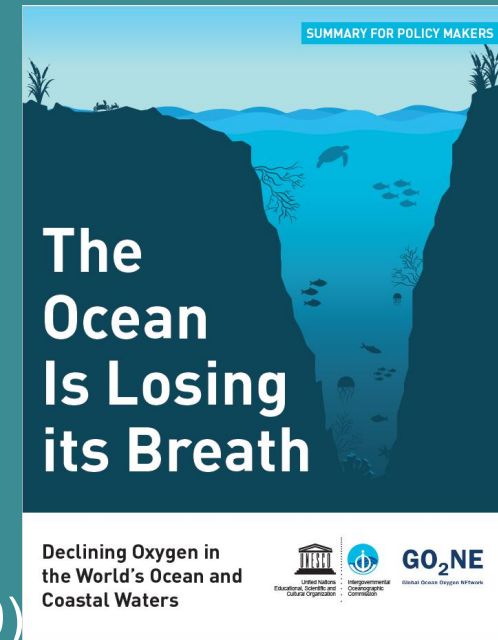


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# Function B: Observing System

*(One cannot manage what one cannot measure)*



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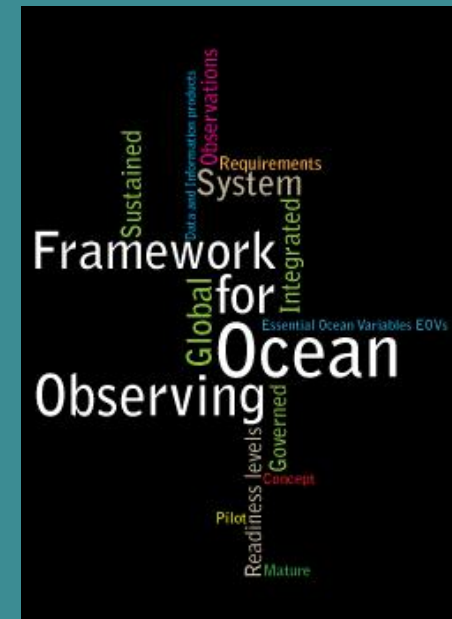
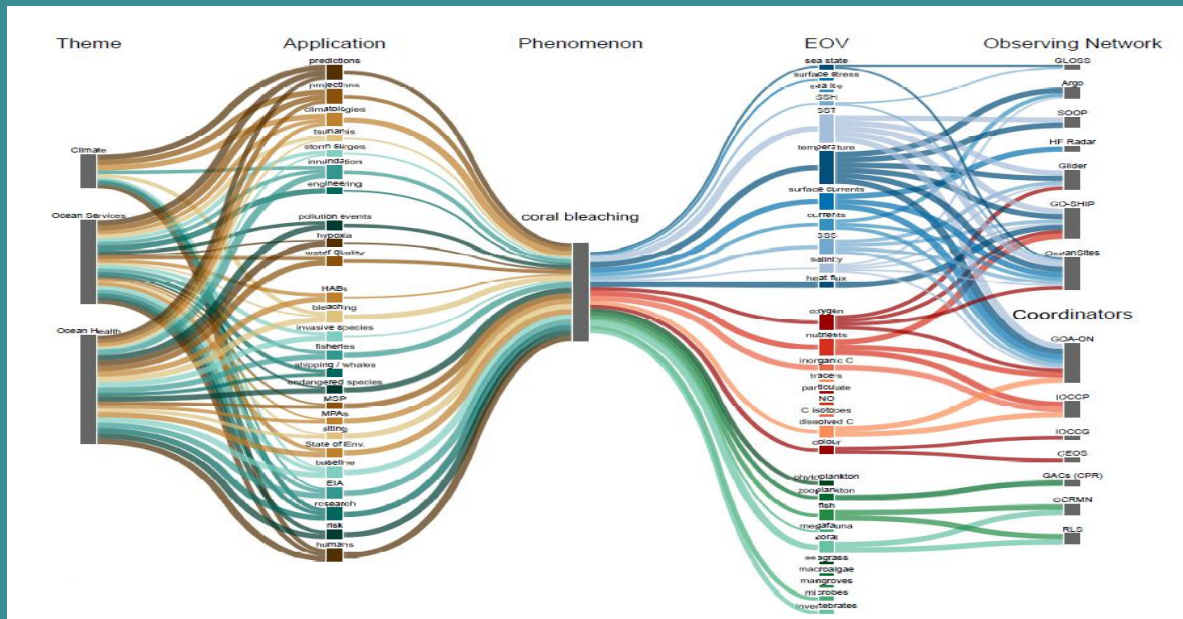
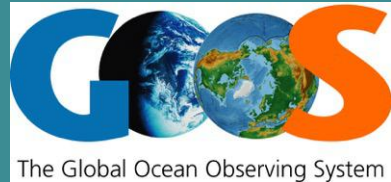


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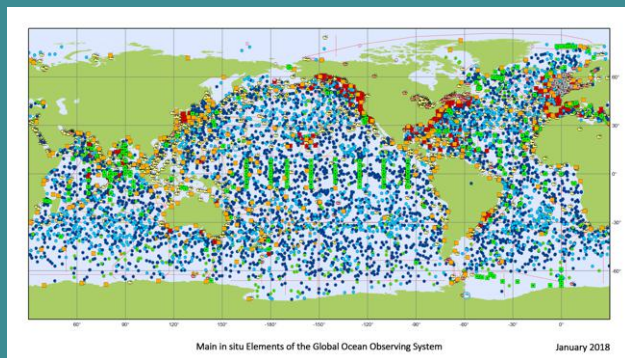




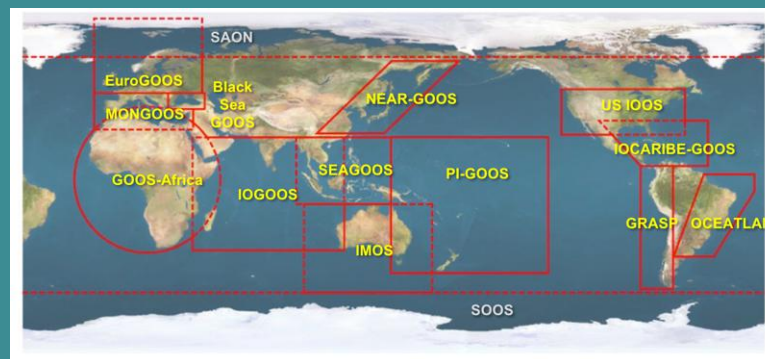
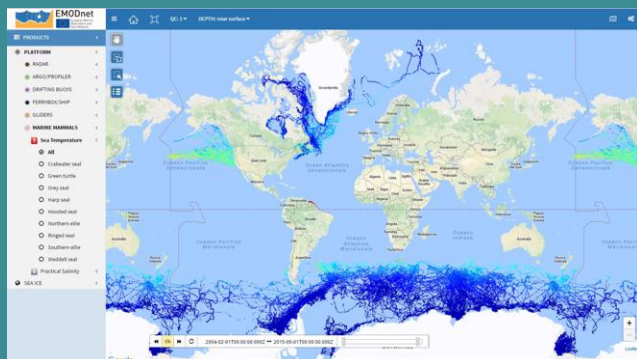
# Global Ocean Observing System

- GOOS Strategy for 2030

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**OOPC - GOOS Physics and Climate Panel**  
**IOCCP - GOOS Biogeochemistry Panel**  
**BioEco - GOOS Ocean Biology / Ecology Panel**





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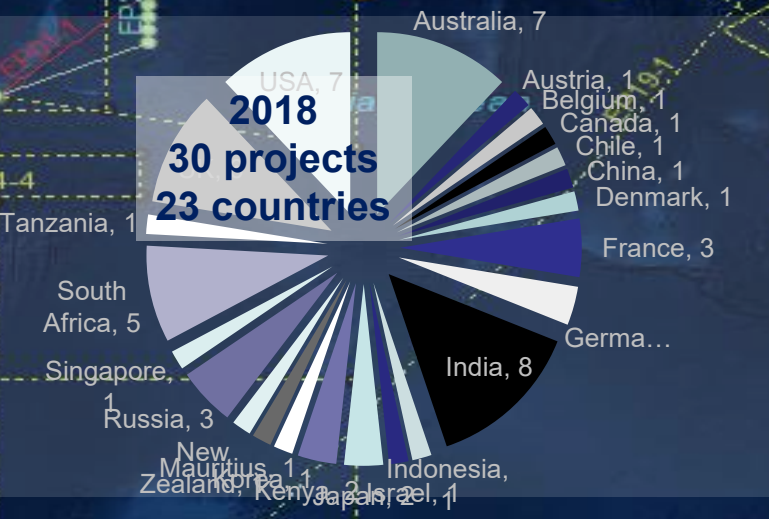
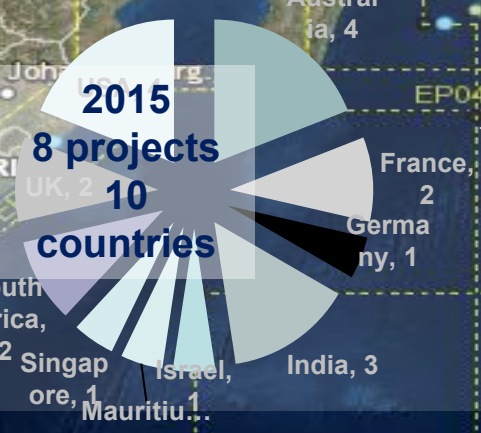
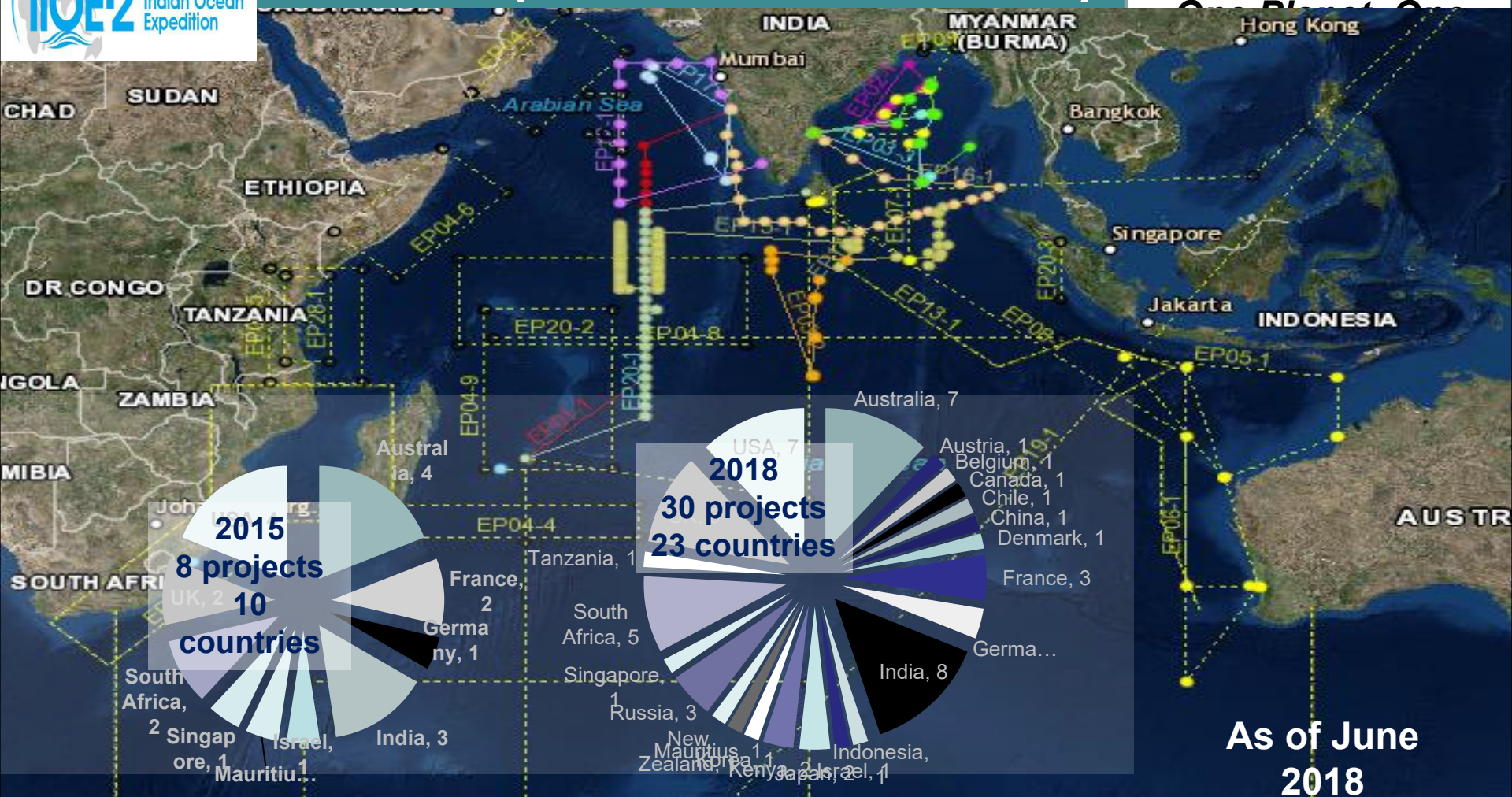
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# IIOE-2 (2015-2020-2025?)

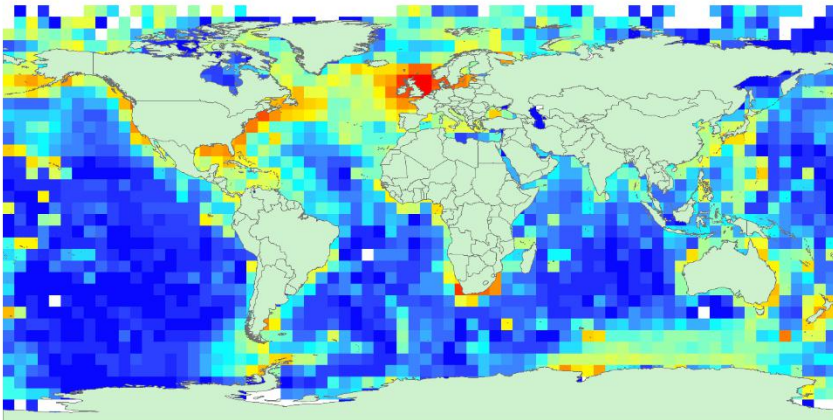


As of June  
2018

# Data and information



>100 IODE DATA CENTRES  
NODC + ADU (+OBIS)



## IODE VISION

Established in 1961 to enhance marine research, exploitation and development, by facilitating the exchange of oceanographic data and information between participating Member States, and by meeting the needs of users for data and information products



## A data clearing-house and sharing facility



[www.iobis.org](http://www.iobis.org)

**45,000,000** species observations

**4,600,000** sampling events

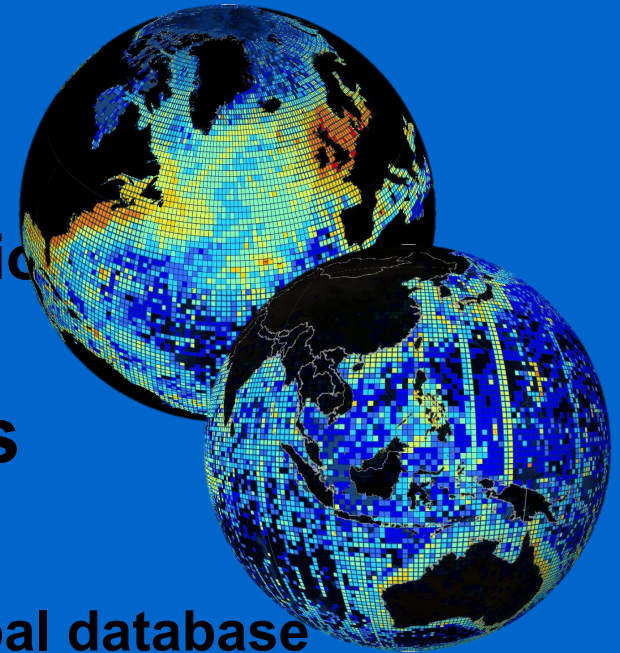
**3,200,000** sampling stations

**114,000** marine species

**1,900** databases in **1** central global database

**500** data providers, **56** countries

**1,000** papers have cited OBIS



Science (

nature (

)  
4



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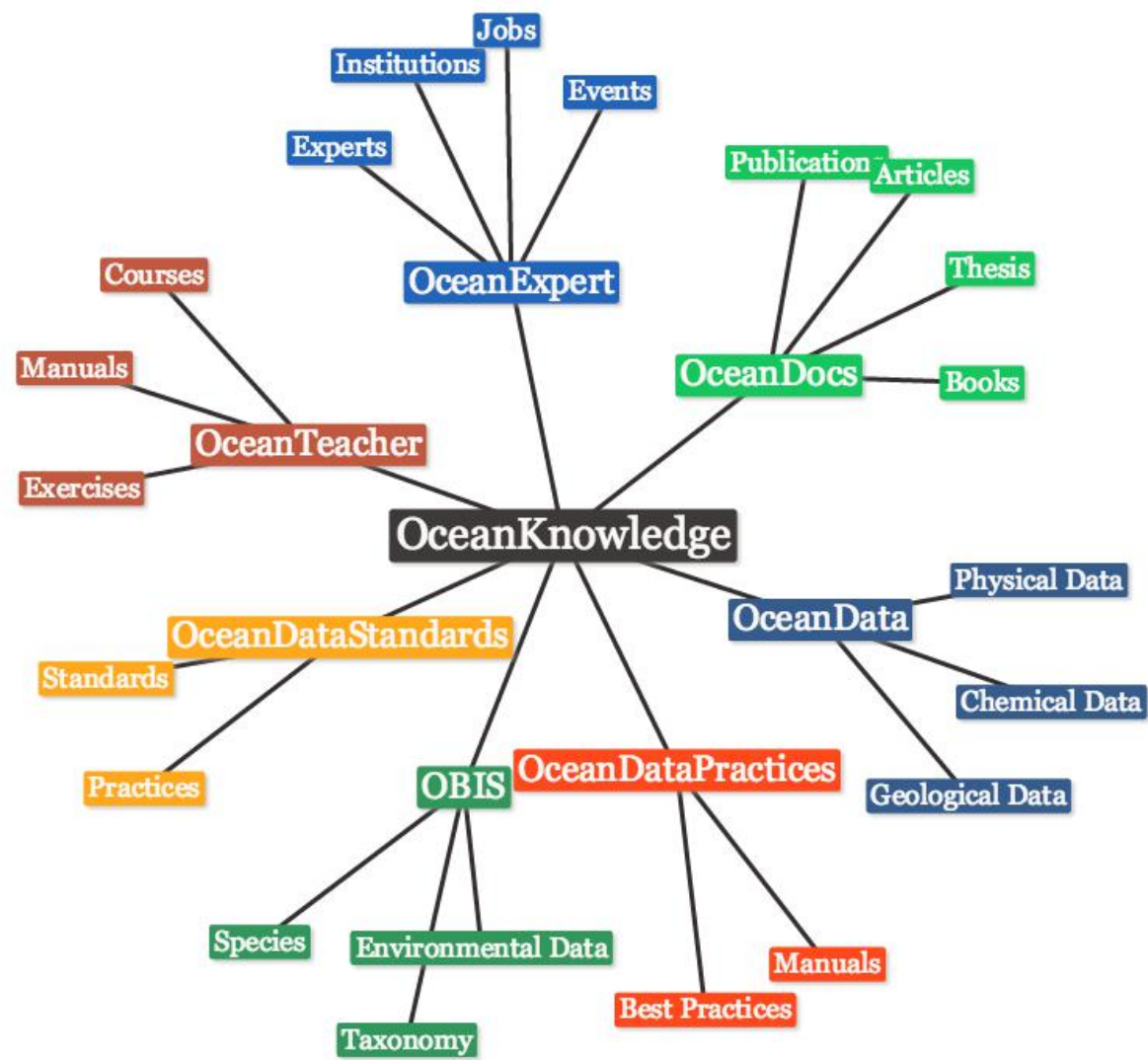


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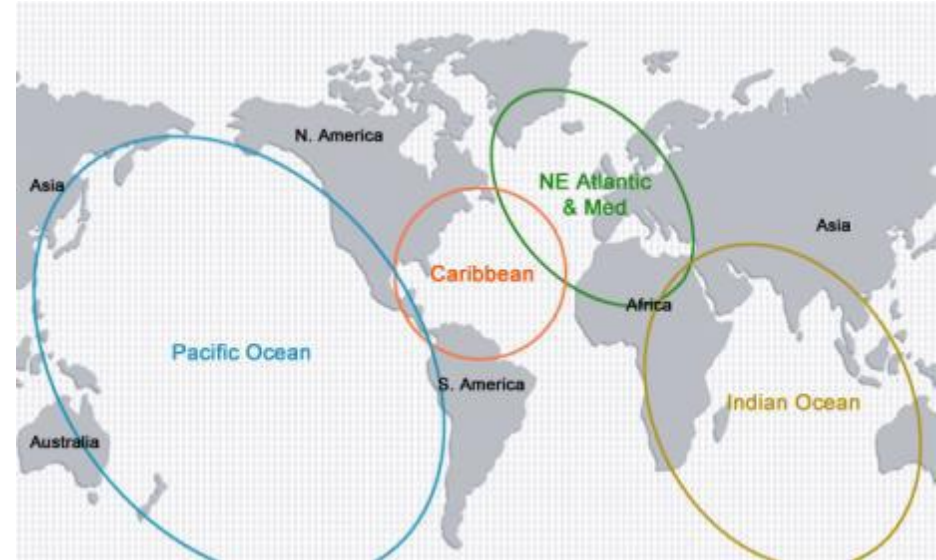
UNGA resolution (A/RES/70) notes with appreciation the contribution of OBIS to marine scientific research.

# Ocean knowledge

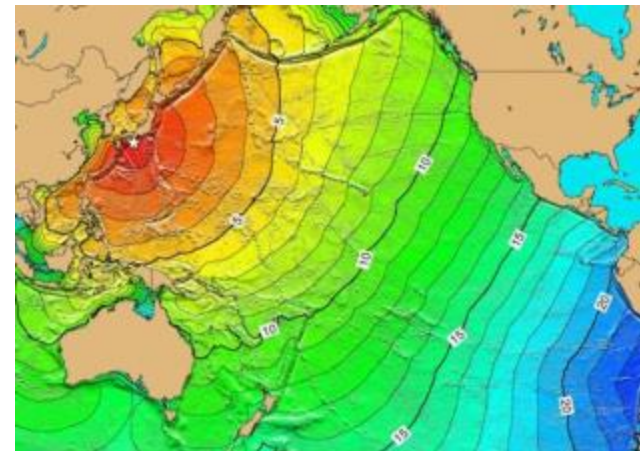


# Function C: Early Warning - Tsunamis

- Pacific since 1965
- 2004 tsunami in Indian Ocean illustrated need for more
- IOC mandated in 2005 to establish three more TWS

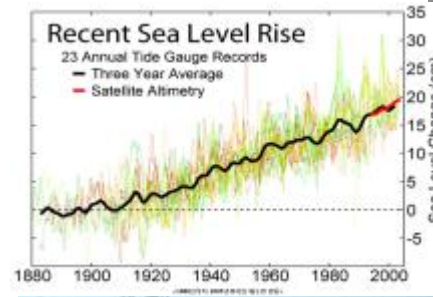


- ICG IOTWS
- ICG CARIBE EWS and
- ICG NEAMTWS



# Other coastal hazards

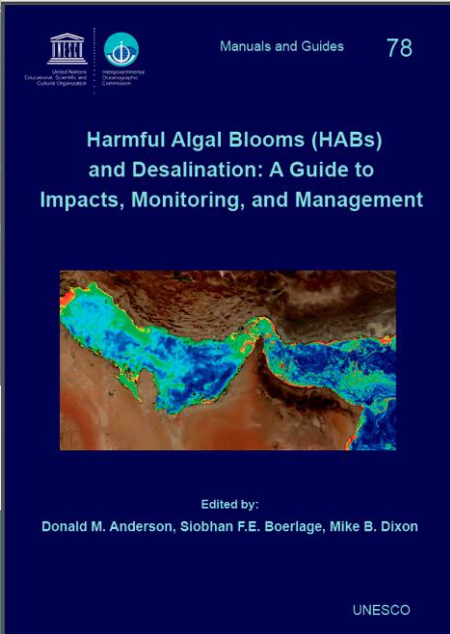
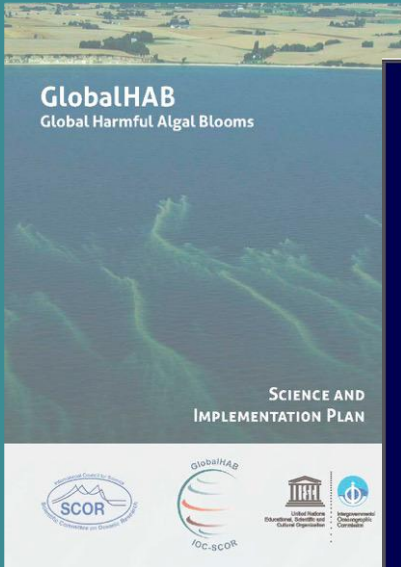
- Storm surges
- Coastal flooding
- Coastal erosion



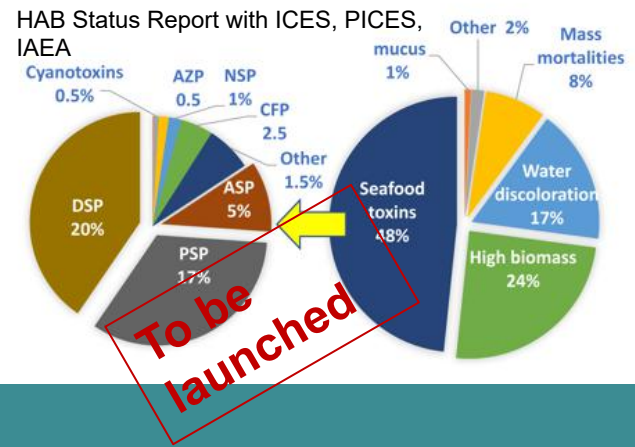
# Function C: Early Warning, HABs



**One Planet, One Ocean**



We use data to improve your experience of our webpage, assess the use of specific content, and



With IAEA, FAO, WHO: coordinated strategy for the increasing problem of Ciguatera fish poisoning



# Function D: Assessments and Information for Policy



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## Portfolio:

- WOA-2, workshops: WESTPAC/Thailand and IOCARIBE/Brazil
- Indicators for targets 14.3, 14.a (as custodian), 14.1 and 14.c
- GEBCO, Seabed 2030 – complete mapping of sea floor by 2030
- Development of Information Products and Services for ocean assessments (DIPS-4) based on OBIS and HAEDAT
- Ocean/Coastal Atlases: CLME+, Canary LME, ACMA  
Intl Coastal Atlas Network



# Function E: Sustainable Management/ Governance

## Joint Roadmap to accelerate Marine Spatial Planning worldwide



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European  
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### PA 1: TRANSBOUNDARY MSP

Guidance on transboundary MSP

Transboundary projects in WestMED & SE Pacific

### PA 2: SUSTAINABLE BLUE GROWTH

MSP and Blue Growth Studies and Conferences at  
global and regional scale

### PA 3: ECOSYSTEM-BASED MSP

Knowledge and capacities on environmental pressures

### PA 4: CAPACITY BUILDING

Training the trainer for planning our ocean in line with Agenda  
2030 targets

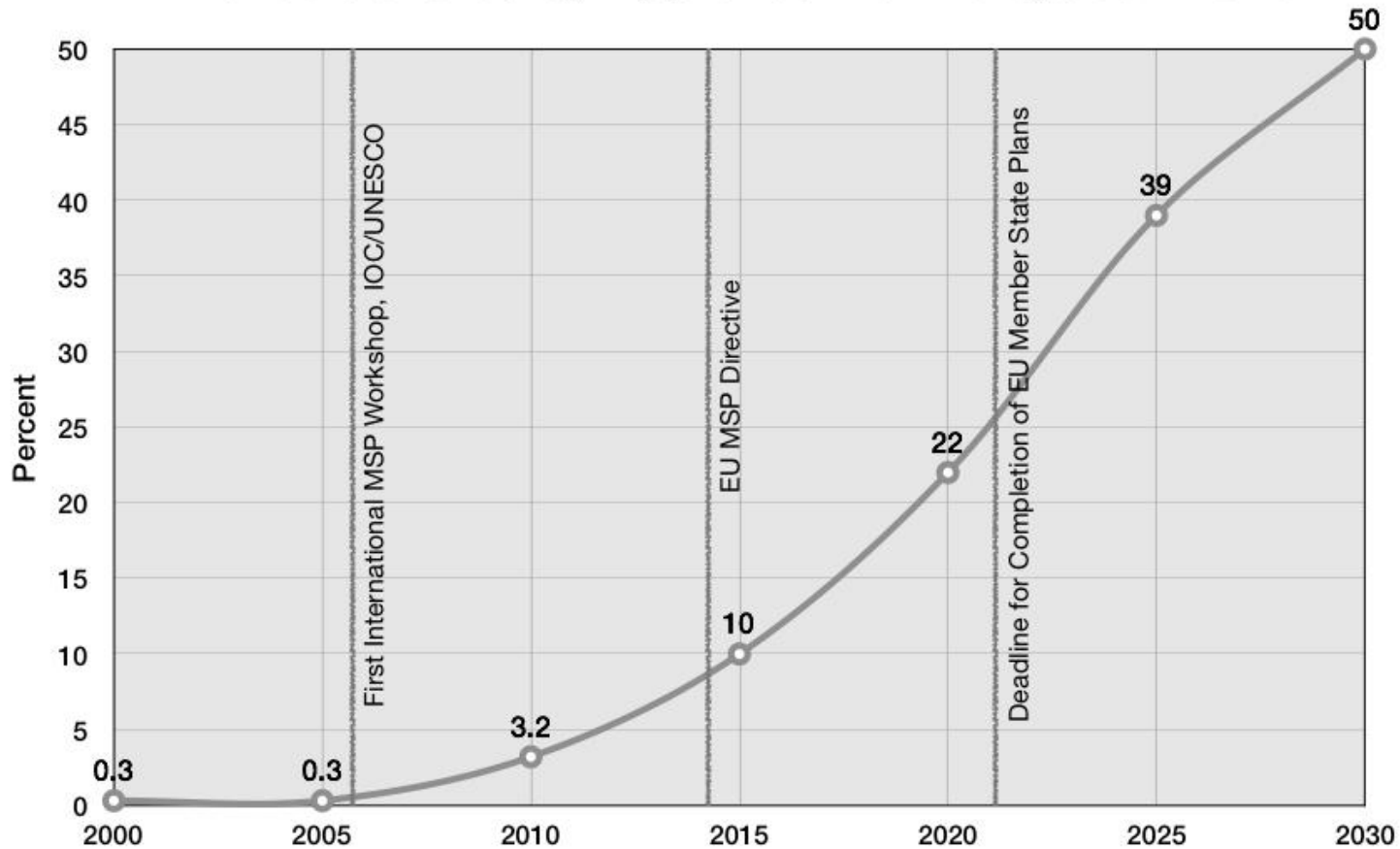
### PA 5: MUTUAL UNDERSTANDING

International Fórum of experts and joint communication actions

#OceanAction15346 #MSPglobal

# Function E: Sustainable Management/

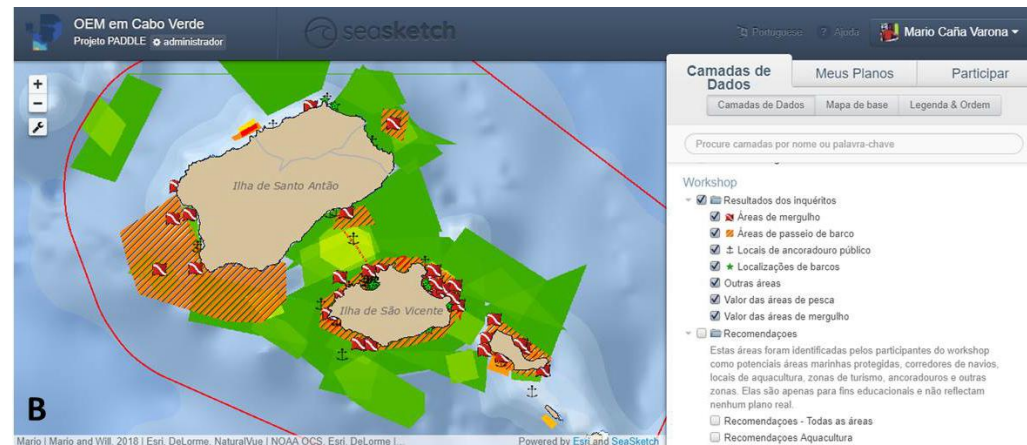
## Percent of Surface Area of World's Exclusive Economic Zones Covered by Approved Marine Spatial Plans



- Marine Spatial Planning workshops:
  - ✓ Mahe, Seychelles, November 2017 (English)
  - ✓ Mindelo, Cape Verde, February 2018 (Portuguese)
  - ✓ Dakar, Senegal, September, 2018 (English)
  - ✓ Mombasa, Kenya (September, 2018 (English)
  - ✓ Port Louis, Mauritius, October 2018 (French)

## Partners:

- UN Environment
- UNDP
- WIOMSA
- National agencies





Empowered lives.  
Resilient nations.



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14  
LIFE  
BELOW WATER



CONSERVATION  
INTERNATIONAL



## GEF LME:LEARN

*A global provider of training, experience-sharing, programmatic guidance and partnership-building for LME's and their coasts*

- ✓ LME Hub communication tool launched
- ✓ 3 Inter-Project Twinning exchanges conducted
- ✓ 3 regional networks launched (Asia-Pacific, LAC, Africa)
- ✓ 7 “toolkits” developed (Governance, LME Strategic Approach, LME Project Management, Marine Spatial Planning, Environmental Economics, LME Scorecard, Stakeholder Engagement)
- ✓ Partnership Meeting on Regional Ocean Governance (with GEF, FAO, UNEP)
- ✓ 19<sup>th</sup> Annual LME Consultation

[marine.iwlearn.net](http://marine.iwlearn.net)

# Function F: Capacity Development

- IOC Capacity Development Strategy (2014-2021)
- IOC Group of Experts on Capacity Development
- Potential for establishing an operational clearing house mechanism for transfer of marine technology

## Training centers:

OTGA + Regional Training and Research Centers:

- Marine Biodiversity and Ecosystem Health (Jakarta)
- Ocean Dynamics & Climate (Qingdao)

## UNESCO Category 2 Centers:

Tehran (@INIOAS) and Hyderabad (INCOIS)

## Multiple UNESCO Chairs in Oceanography



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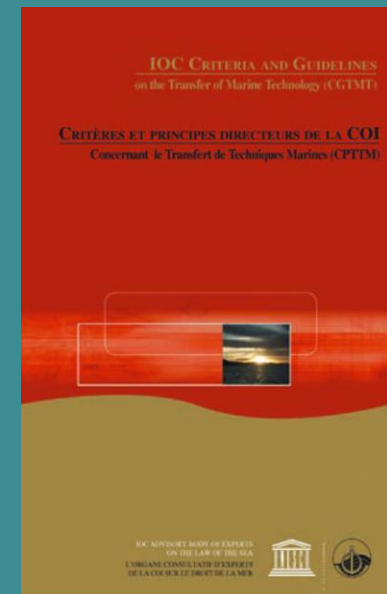


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# Function F: OceanTeacher Global Academy

sharing training resources and expertise in a coordinated way



[www.oceanteacher.org](http://www.oceanteacher.org)



Flanders State of the Art  
With the support from the Government of Flanders, Belgium



**Browse by Language:** English | Français | Español | Português

**Browse by Subject:**

- Data Management**
- Marine Meteorology**
- Ocean Observation**
- Information Management**
- Disaster Recovery**
- Marine Spatial Planning**
- Tsunami**
- GIS**
- OIBS**
- Harmful Algal Blooms**

**HEADQUARTERS**  
UNESCO/IOC Project Office for IOOE, Ostende, Belgium

**DESIGNATED REGIONAL CENTRES**  
COLOMBIA, SENEGAL, KENYA, MOZAMBIQUE, INDIA, MALAYSIA

**CANDIDATE REGIONAL CENTRES**



> 2 500 people trained from 134 Member States



> 4 200 registered users



> 180 training courses (English, Spanish, French, Portuguese)



Learning Services Provider

ISO 29990: 2010



**IOOE** International Oceanographic Data and Information Exchange

# GLOBAL OCEAN SCIENCE REPORT – GOSR

<https://en.unesco.org/gosr>

The Current Status of Ocean Science around the World



Figure ES1. Ocean science categories considered in the Global Ocean Science Report.



# GLOBAL OCEAN SCIENCE REPORT – GOSR

## OCEAN SCIENCE PUBLICATIONS AND CITATIONS

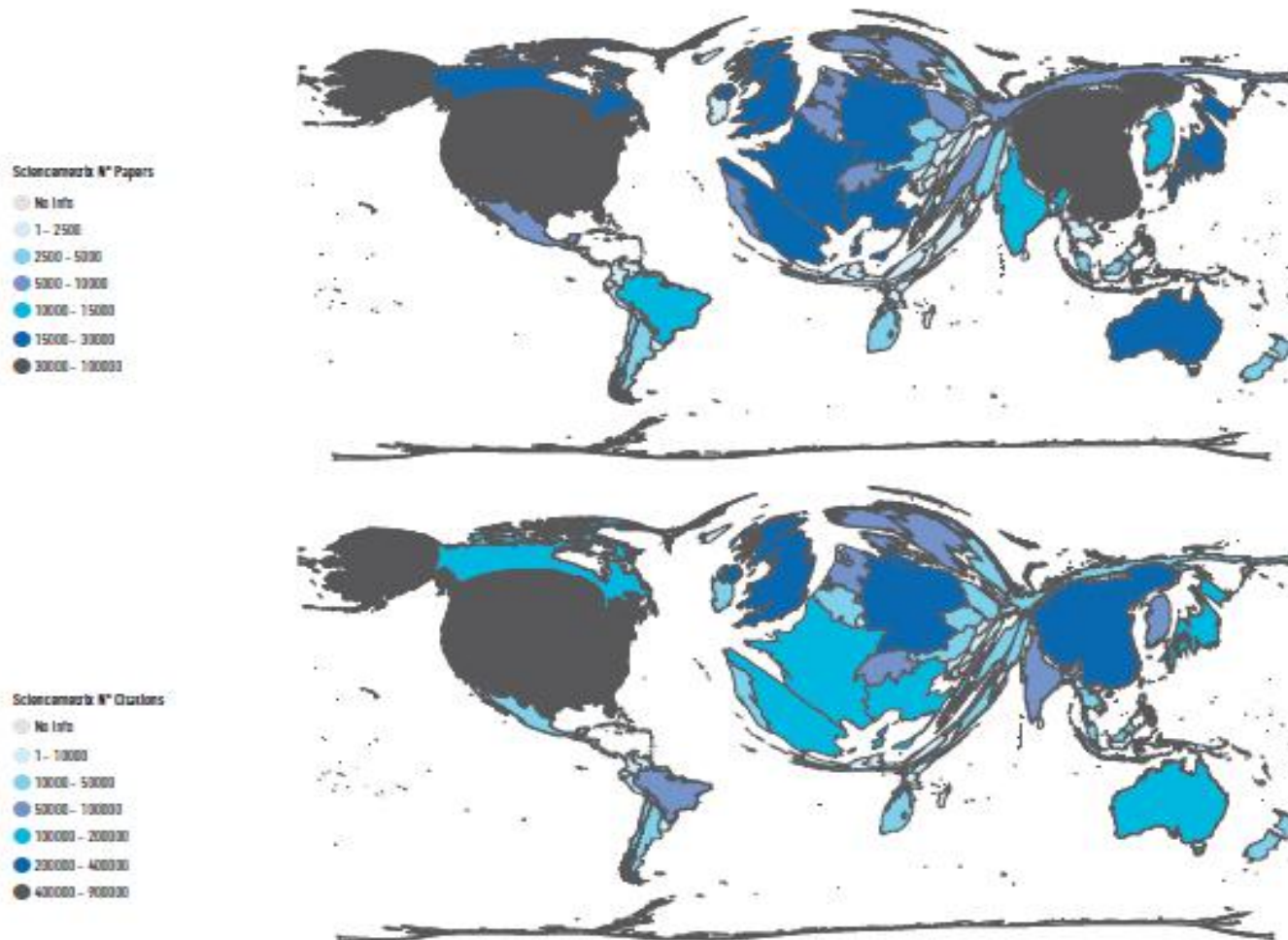


Figure ES7. Publication and citation map of the world. The area of each country is scaled and deformed according to the number of ocean science publications (top) or citations received (bottom). Different colours indicate a different number of publications (top) or citations (bottom). Source: ScienceMetrix, 2015.

# Ocean Literacy



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English

Français (French)



Intergovernmental Oceanographic Commission

# Ocean Literacy Portal

Enter the Portal

What is Ocean Literacy?

Pause video



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# Ocean Literacy



“FAR AND AWAY, THE GREATEST  
THREAT TO THE OCEAN, AND  
THUS TO OURSELVES, IS  
**IGNORANCE**”.

Sylvia Earle, President of [Mission Blue](#)

# Ocean Literacy for All

A toolkit

# Ocean Literacy Portal

Students



Educators



Scientists



Media



Policy  
Makers



Private  
Sector



# UN Decade of Ocean Science for Sustainable Development (2021-2030)



On 5 December 2017, the **UN General Assembly proclaimed the Decade** of Ocean Science for Sustainable Development (2021-2030).

**Resolution A/72/L.18** calls upon the IOC to prepare an **Implementation Plan** for the Decade in consultation with:

- **Member States;**
- **UN partners;**
- **Institutional partners;**
- **Other relevant stakeholders.**

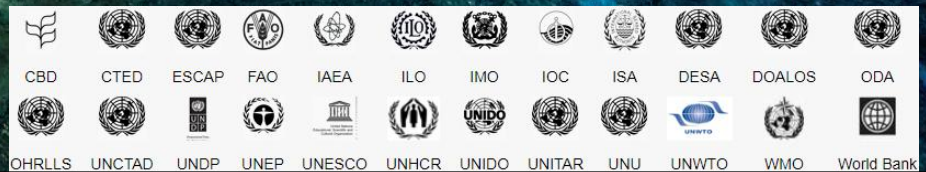
And to report to the UN Secretary-General about the implementation of the Decade.

**Resolution A/72/L.18** also invites **UN-Oceans** to collaborate with IOC.

A global framework that will ensure Ocean Science can help governments and societies achieve the major goals of our generation

**UN-OCEANS**

An interagency collaboration mechanism on ocean and coastal issues within the UN system



# Why a Decade of Ocean Science for Sustainable Development?

- A global framework to support efforts to reverse the cycle of decline in Ocean health & create improved conditions for sustainable development
- A global collective research and investment framework to close the knowledge gaps
- A global framework to structure and boost scientific efforts at national and international levels to address global and regional SD challenges



# **A Vision for the Decade**

**Develop scientific knowledge, build  
infrastructure, and foster  
partnerships for a sustainable and  
healthy ocean**



# A Decade to...

# TRANSFORM

knowledge systems  
to support  
sustainable  
development

Potential activities

...

- Complete mapping of the seafloor
- eDNA Sequencing of marine life
- Science products for maritime industries
- Enhanced sharing of data and information



IOC

# A Decade to...

## MEASURE

cumulative impacts  
for effective  
solutions

Potential activities

...

- Ocean health research programme
- New environmental services from ocean data/satellites
- Ocean productivity and biodiversity
- EBM tools and models

© AIMS / Christian Miller





# A Decade to...

# REDUCE

## vulnerability to ocean and coastal hazards

Potential activities

- Improved coastal hazards warnings syst.
- Better mapping of vulnerable areas
- Coordinated programme of OA research, including forecasting
- Sea-level change and coastal impacts projections



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# A Decade to...

# **BOLSTER**

## ocean observing and data systems

Potential activities

- An Ocean Observing System for All Major Ocean Basins
- Sustained Deep Ocean Observing System
- Open access, data portal for all
- Social science metrics

A young child with long, light-colored hair is seen from behind, looking into a large aquarium tank. The tank is filled with a vibrant coral reef ecosystem, featuring various types of coral and several blue tang fish swimming around. The scene is dimly lit, with the primary light source coming from the aquarium's internal lighting, creating a focused and serene atmosphere. The child is wearing red shoes, and the floor in front of the tank is dark and reflective.

**A Decade to...**

# **ACCELERATE**

**transfer of marine  
technology, training  
and education**

Potential activities

- Marine technology transfer/exchange hubs
- Self-driven regional capacity development programmes
- Ocean literacy initiatives
- Gender focused programmes

...

# A Decade to...

## DELIVER

best available knowledge  
to decision-makers

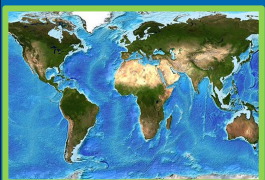
Potential activities

...

- Promotion of Science/policy mechanisms
- Consolidated network of Decade partners
- Regional & global dialogue enhancement
- Peace through science initiatives



# Research & Development Priority Areas



**Map the entire ocean floor and processes**



**Bolster ocean observation systems in all basins**



**Conduct an inventory of ecosystems and their functioning**



**Develop a data and information portal**



**Establish an integrated multi-hazard warning system**



**New integrated models for ocean prediction**



**Strengthen capacities and accelerate technology transfer and ocean literacy**



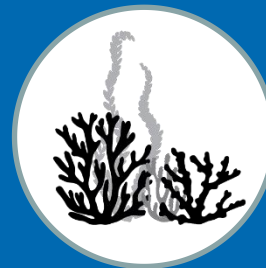
# Key Applications



Coastal zone management and adaptation



Marine Spatial Planning/ Blue economy



Establishment of Marine Protected Areas



Fishery management



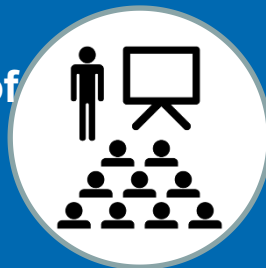
Nationally Determined Contributions to UNFCCC



Development of national ocean policies



Development of national R&D strategies



Regional and national capacity development planning



Early warning systems





# A cooperation framework for ocean science

**Synthesise existing research** defining trends, knowledge gaps, priorities for future research

**Mobilizing scientists on critical ocean priorities relevant to Agenda 2030**

**New co-designed research strategies**

Funding / partnerships  
Stakeholders engagement



**Bridging science, policy and society**

Science-policy dialogues, dissemination, access to data, information, communication

**Synthesising, assessing results, development of user-driven solutions**

**Fostering new joint research and cooperation within & across ocean basins**

Integration natural & social sciences  
Capacity development



IOC



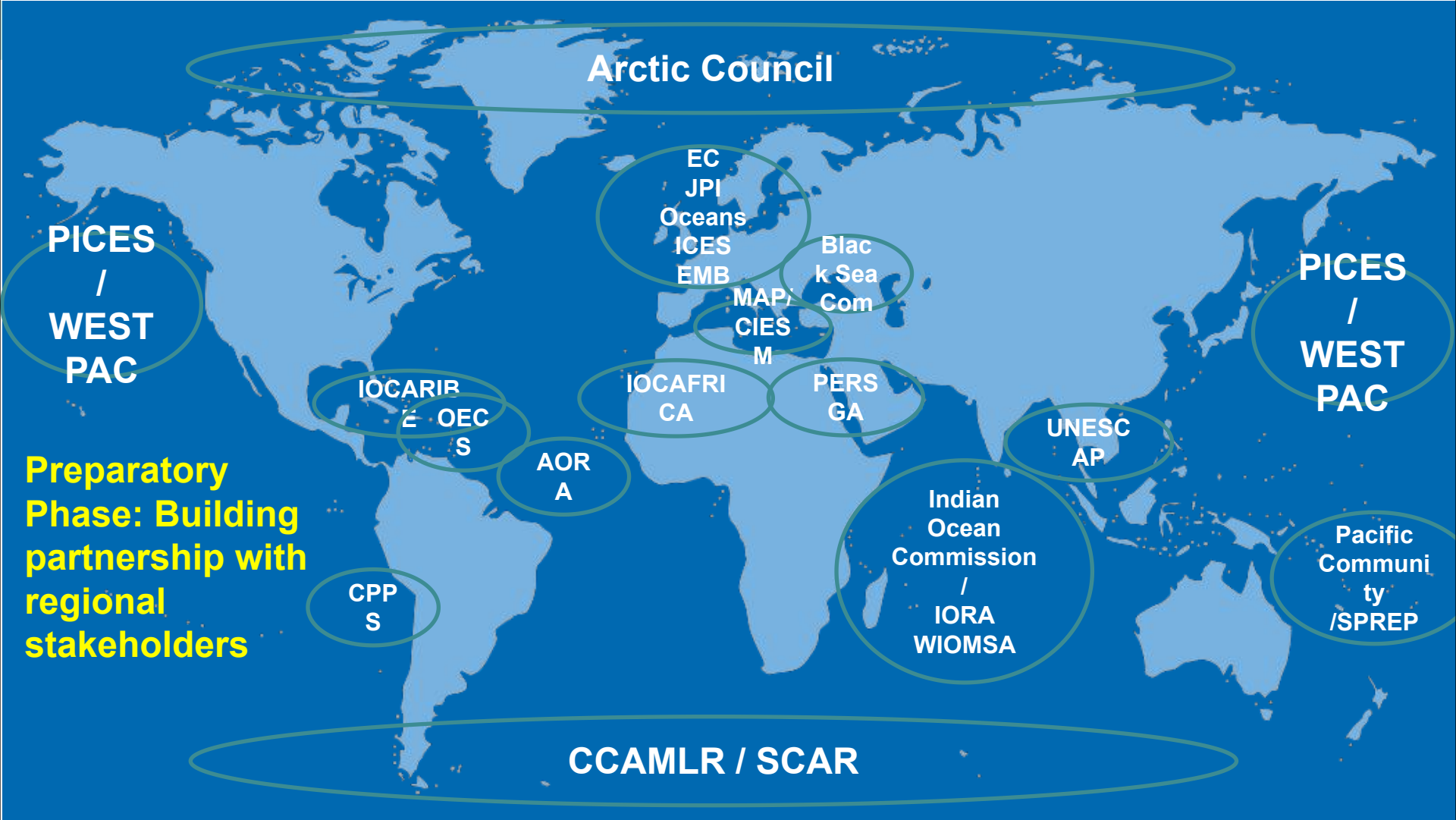
## Implementation Plan

Between 2018 and 2020, the UNGA tasked IOC with preparing the Decade and coordinating the development of an Implementation Plan which will include:

- Science Plan
- Capacity Development Plan
- Resource Plan
  
- Communications & Engagement Plan
- Monitoring & Reporting







**Preparatory Phase: Building partnership with regional stakeholders**