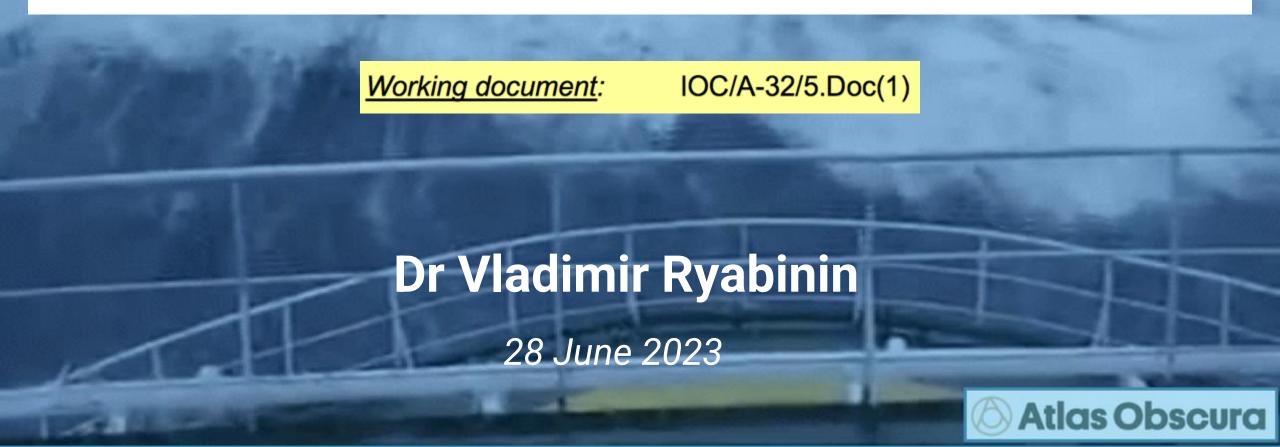
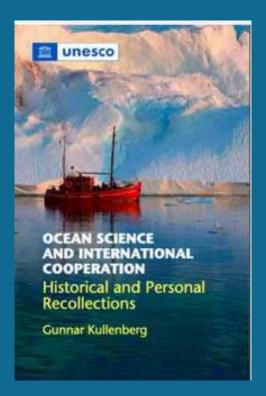
32nd IOC Assembly Item 5

IOC AND THE FUTURE OF THE OCEAN: SUSTAINABLE DELIVERY AND EXPANSION OF IOC ACTIVITIES





Restricted Distribution

INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION

(of UNESCO)



Twenty-Third Session of the Assembly Paris, 21–30 June 2005

FINANCING AND OWNERSHIP OF IOC'S PROGRAMMES

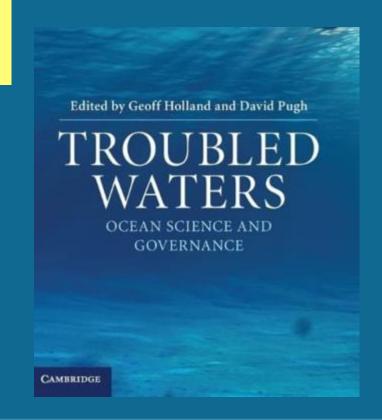
"WE HAVE A PROBLEM"

Future of the Ocean and the role of IOC in it



The Future of IOC toward next 10 years and its implication for Member States

Varna, Bulgaria 19th March 2012

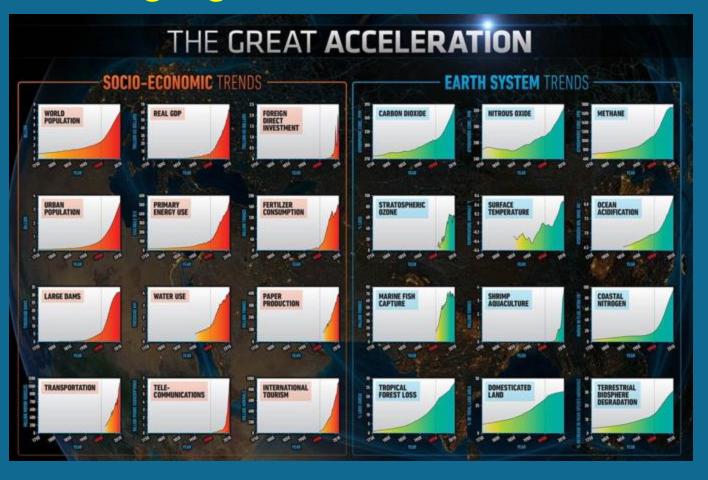


1960s

IOC Evolving Agenda

Now





Intergovernmental UN platform for dialogue and cooperation in ocean science

Intergovernmental UN Platform to enable ocean science for addressing existential issues

IOC MTS: High-Level Objectives and Functions



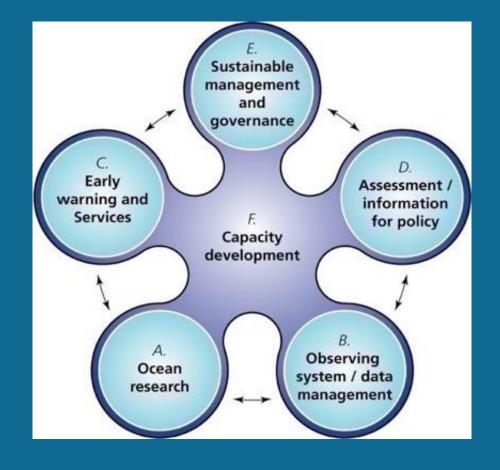


Mission:

to bring together governments and science community in achieving 'the Ocean We Need for the Future We Want'

- Healthy ocean and sustained ocean ecosystem services;
- Effective warning systems and preparedness for tsunamis and other ocean-related hazards;
- Resilience to climate change and contribution to its mitigation;
- Scientifically-founded services for the sustainable ocean economy; and
- Foresight on emerging ocean science issues.





The science we need for the ocean we want

Issues

Solutions (infrastructure)

Enabling environment

OCEAN DECADE CHALLENGES



Pollutants



Ecosystems



Food from the Ocean



Ocean economy



Ocean-climate nexus



Ocean-related risks



Ocean observing system



Ocean digital representation



Capacity development



Behaviour change





Healthy and resilient

Productive

Safe

Predicted

Accessible

Inspiring and engaging

Relevant UN Frameworks set objectives

THE LAW

OF THE SEA





8 GOOD JOBS AND ECONOMIC GROWT





9 INNOVATION AND INFRASTRUCTURE





















Convention on **Biological Diversity**

Kunming-Montreal GBF Ocean-Climate Dialogue













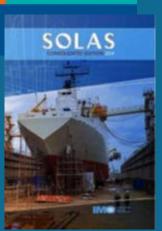


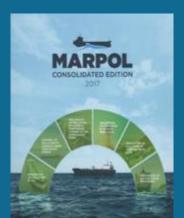


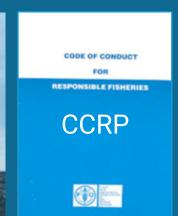
Sendai Framework for Disaster Risk Reduction

2015 - 2030









+ ILBI on Plastic Pollution 2024





How the System is organized



Convention 1
Goals
Secretariat
National PoC
Commitments
Assessment 1

Convention 2
Goals
Secretariat
National PoC
Commitments
Assessment 2

Convention 3
Goals
Secretariat
National PoC
Commitments
Assessment 3

Protocol A
Goals
Secretariat
National PoC
Commitments
Assessment A

Protocol B
Goals
Secretariat
National PoC
Commitments
Assessment B

•••

How the System is organized



Convention 1
Goals
Secretariat
National PoC
Commitments
Assessment 1

Convention 2
Goals
Secretariat
National PoC
Commitments
Assessment 2

Convention 3
Goals
Secretariat
National PoC
Commitments
Assessment 3

Ocean is most often "2nd priority" in many conventions

Protocol A
Goals
Secretariat
National PoC
Commitments
Assessment A

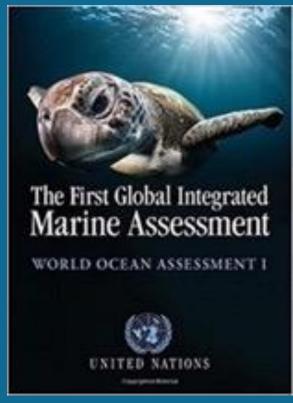
Protocol B
Goals
Secretariat
National PoC
Commitments
Assessment B

•••

Patient, sick with multiple diseases, is treated by several specialized doctors who do not speak to each other

2016

SDG14 of the 2030 Agenda



Humankind is running out of time to start managing the ocean sustainably







REQUIREMENTS

Theme

Societal Benefit Scientific Issue, process **EOV**

Network

HF radar

surface drifters

tropical moored arrays SST virtual constellation

SSS satellite missions

repeat hydrography

Gliders (subsurface)

moored time series

Ships of Opportunity

zooplankton surveys

multiple elements

Mangrove surveys

Coral reef surveys

Ship-based timeseries

Ocean color radiometry constellation

sea ice drifters

Volunteer Observing Ships

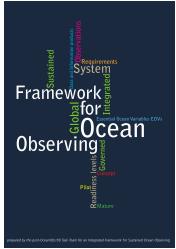
Sea state satellite missions

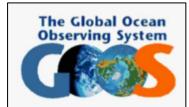
Sea ice satellite missions

XBTs and TSGs

profiling floats

tide gauges





Climate, real-time services, ocean health

Climate services

Carbon storage

Human health

Food security

Tourism/cultural

Clean waters

Biodiversity

Coastal protection

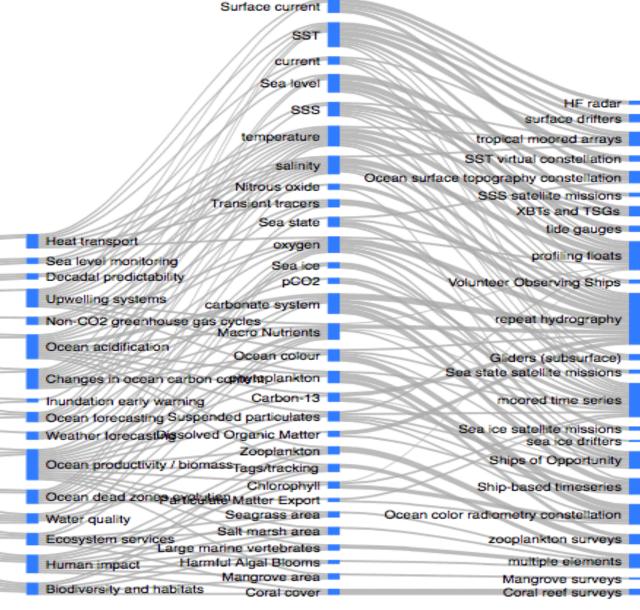
Coastal livelihoods

Mitigation of climate change

Adaptation to climate change

Efficient maritime economy

Tsunami risk mitigation



Climate Real-time Services Ocean health



What is the role of ocean observations in addressing climate change?

Little!



What is the role of ocean observations in addressing climate change?

Little!

What is the role of knowledge products based on ocean observations in addressing climate change?

Fundamental!

REQUIREMENTS

Theme

Societal Benefit

Scientific Issue, process

EOV

Surface current

Nitrous oxide

Sea state

oxygen

Sea ice

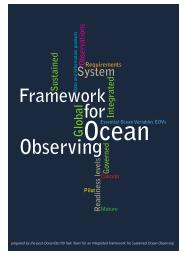
Transient tracers

carbonate system

Mangrove area

Coral cover

Network



The Global Ocean **Observing System**

NEED a stronger enabling environment for products!

Heat transport

Sea level monitoring

Upwelling systems

Decadal predictability

Biodiversity and habitats

SST current Sea level SSS temperature tropical moored arrays salinity

SST virtual constellation Ocean surface topography constellation SSS satellite missions XBTs and TSGs

tide gauges

HF radar =

surface drifters

profiling floats

Volunteer Observing Ships

repeat hydrography

Gliders (subsurface) Sea state satellite missions

moored time series

Sea ice satellite missions sea ice drifters

Ships of Opportunity

Ship-based timeseries

Ocean color radiometry constellation

zooplankton surveys

multiple elements Mangrove surveys

Coral reef surveys

Climate services Climate Real-time Services Carbon storage Human health Coastal protection Ocean health Food security Tourism/cultural Clean waters Coastal livelihoods

Mitigation of climate change Adaptation to climate change Tsunami risk mitigation Efficient maritime economy Biodiversity

Non-CO2 greenhouse gas cycles Macro Nutrients Ocean acidification Ocean colour Changes in ocean carbon contyleplankton Carbon-13 Inundation early warning Ocean forecasting Suspended particulates Weather forecastDissolved Organic Matter Zooplankton Ocean productivity / biomassTags/tracking Chlorophyll Ocean dead zonep grounde Matter Export Seagrass area Water quality Salt marsh area Ecosystem services Large marine vertebrates Human impact Harmful Algal Blooms

IOC High-Level Objectives? Economy, UN Frameworks?



Is there an approach to create enabling environment for ocean knowledge products generation that would facilitate their efficient use? Yes!

"Sustainable Ocean Planning"



climate-smart, ecosystem-focussed, ethical & equitable ocean management on the basis of science-supported planning for a sustainable blue economy

But: much still needs to be constructed!

Key Ocean Management Domains



Coastal zone management and adaptation



Marine Spatial Planning, sustainable ocean economy



BBNJ, MPAs, reserves, LMEs, heritage sites, UCH



Management of fisheries and aquaculture



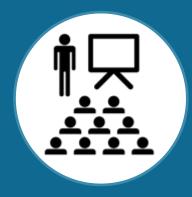
Adaptation to and mitigation of climate change, NDCs



Development of national R&D strategies & ocean policies



Real-time oceanographic, weather/climate services



Regional and national capacity development



Early
warning
Systems,
Sendai



IOS Evaluation of IOC strategic positioning

Sustainable delivery and expansion of IOC activities: estimate of required budget, including human resource needs

(Document distributed by IOC Circular Letter No. 2912)





Conclusions: workforce: 60 -> 90, budget: 30M\$ -> 50M\$

Expect soon: Increase in regular programme budget

What is missing in the pot? Or, what has not been developed enough?

(list is not inclusive and not in any order)

- Use of climate predictions and projections for ocean management
- Framework to adapt to sea-level rise
- Research on ocean chemical pollution -> multiple stressors
- Return on investments in ocean research/observations -> ocean economics
- Valuation of ecosystems and benefits of ocean life-supporting services
- Ocean reanalysis
- ODIS: enabling environment for knowledge products!
- Mainstreaming reanalysis with use of remote sensed data
- Biogeochemistry ecological observations and models
- Ocean science policy interface

• ...

IOC can help saving the Ocean!

- Capitalize on Ocean Decade, its processes and Conference 2024
- Build on ideas in the Action Plan from IOS Evaluation
- Costa Rica and France, 2024 and UNOC 2025
- A pan-UN plan of working in the ocean?
- Need for an in-depth co-design of the future IOC services (reverse engineering?) – a complex task

Dec. A-32/5

IOC and the Future of the Ocean: Sustainable Delivery and Expansion of IOC Activities

A consultation on how IOC could optimally facilitate science-based sustainable ocean planning, ocean science support to implementation of UN environmental conventions and frameworks, and development of a sustainable ocean economy;

IOC Executive Secretary to prepare and initiate the consultation involving appropriate stakeholders and present a progress update to the IOC Executive Council in 2024

Peter Thomson (SDG14 Plan?)

