North Atlantic Workshop –
Shaping the Ocean Decade
2021-2030
Halifax, Canada, January 7, 2020

Vladimir Ryabinin,
Executive Secretary -
Intergovernmental Oceanographic
Commission of UNESCO
Situation and **our ultimate goals**

1. Heal the Ocean
2. Start managing (using) the Ocean sustainably

Climate, Food, Living Conditions, Peace ...
Omnibus Resolution for Oceans and the law of the sea (A/RES/72/73) of 6 December 2017

Proclaimed the **UN Decade of Ocean Science for Sustainable Development 2021-2030**, within existing structures and available resources, and called upon the IOC to prepare an **Implementation Plan** for the Decade in consultation/cooperation with ... (everyone).
Initial steps

Interim Planning Group -> Executive Planning Group

**Challenge:**
scale and importance -> too big to embrace

**Phases:** Science Issues -> Plans -> Resources

**Approach:** design and agree on major outcomes and outputs + propose/promote activities + create an *enabling* environment
## Societal Outcomes

### A Clean Ocean
Sources of pollution are identified, quantified and reduced, and pollutants removed from the Ocean.

### A Safe Ocean
Human communities are protected from ocean hazards and the safety of operations at sea and on the coast is guaranteed.

### A Healthy and Resilient Ocean
Marine ecosystems are mapped and protected, multiple impacts, including climate change, are measured and reduced, and the provision of Ocean ecosystem services is maintained.

### A Sustainable Productive Ocean
The provision of food supply and alternative livelihoods are secured.

### A predicted Ocean
Society has the capacity to understand current and future Ocean conditions, forecast their change and impact on human wellbeing and livelihoods.

### A Transparent and Accessible Ocean
All nations, stakeholders and citizens have access to ocean data and information, technologies, and are capable of making informed decisions.
Observing

Predicting

Capacitating

Managing
Ocean Science Funding: largely by research agencies, in average 4% of funding natural sciences;
### Sustainability of ocean and meteorological observing networks

#### Funding sustainability of Observing Networks

<table>
<thead>
<tr>
<th>Funding sustainability of Observing Networks</th>
<th>Ocean</th>
<th>Meteo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solved today, <strong>no problems foreseen in the future</strong></td>
<td>28%</td>
<td>68%</td>
</tr>
<tr>
<td>Solved today, but <strong>problems foreseen in 2-3 years</strong></td>
<td>52%</td>
<td>27%</td>
</tr>
<tr>
<td>No funding today, but plans for funding in the near future</td>
<td>7%</td>
<td>3%</td>
</tr>
<tr>
<td>No funding today, no plans for funding in the near future</td>
<td>9%</td>
<td>2%</td>
</tr>
<tr>
<td>Other</td>
<td>4%</td>
<td></td>
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Where we are and where we would like to be

- Science largely competent for problem diagnostic
- Observing system for climate and emerging data service
- Major knowledge gaps, weak ocean literacy
- Funding base mostly in research mode
- Hugely uneven capacity, especially low in developing countries/SIDS

- Science providing solutions and motivation for action
- Adequate ocean data and information system
- Ocean literate society and well-informed decisions
- Demonstrated value chain, resources and commitment
- CD/ transfer of technology: no one is left behind
Ocean-based industries’ value-added to double (from USD 1.5 to 3 trillion) by 2030

Convergence of Research and Applications

Flagship projects

- Science breakthroughs → top-down designed
  - Mapping, digital atlas
  - Observing systems
  - Ecosystem knowledge
  - Data & information
  - Multi-hazard warning systems
  - Models for Ocean prediction
  - CD, TT, Ocean Literacy

Pickup by practice → stimulated bottom-up

- Inclusive & transformative
- focused on solutions

- Coastal zone management
- Marine Spatial Planning/Blue economy
- Aquaculture/Fishery management
- Disaster Risk Reduction (Re-)insurance
- Adaptation Mitigation Climate services
- Governance: Policies Peace Security

Solutions

Resources
• Ocean as a solution to climate change (mitigation, carbon sequestration)
• The future of food from the sea
• Ocean energy and mineral sources
• The ocean genome: conservation and the fair use of marine genetic resources
• Pollution and a regenerative economy: municipal, industrial, agricultural, and maritime waste, its impacts, and solutions
• Coastal development: resilience, restoration and infrastructure of coastlines
• National accounting for the ocean & ocean economy, ocean finance
• Critical habitats and biodiversity: inventory, thresholds and governance
• IUU fishing and associated drivers
• Organized crime associated with fisheries
## Architecture: four potential pillars of the Decade

<table>
<thead>
<tr>
<th>Georeferenced Atlas (New Generation Map) of the Ocean</th>
<th>Targeted Research, Brainstorming, Assessment of Knowledge Observations -&gt; Prediction Ocean Data/Info System</th>
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</table>

### Societal applications, economy
- Coastal zone management
- Marine Spatial Planning/Blue economy
- Aquaculture/Fishery management
- Disaster Risk Reduction (Re-)insurance
- Adaptation Mitigation Climate services
- Governance: Policies Peace Security

### Science - policy interface
- Coordination + Communication
- Work at UN, regional, national level
- CD, Ocean Literacy, Education

### Accelerators, techno-hubs, GEF/WB, economic valuation
Decade: Potentially Largest Campaign in Earth Sciences
Missions, large-scale projects:

1. Complete mapping of the ocean including seabed and ecosystems
2. Deep ocean observations and research
3. Polar oceans & their observing system
4. Image of ocean life – molecular techniques, eDNA, +
5. Ocean prediction – also for life in the ocean, for ecosystem management
6. Guided adaptation of ocean ecosystems, e.g. selective breeding for corals (warming, pH, O2, pollution, turbidity, light, invasive species, ...)
7. Coastal Ocean, source-to-sea
8. Aquaculture of the future?, Ocean carbon sequestration?, ...

Global  Regional
Caribbean - Sargassum
Africa - Coastal Erosion
North Atlantic?
Decade as **Brainstorming**: Planned or Potential Major Conferences (co-design, community engagement, roadmaps)

1. OceanObs’19+
2. 2nd UN Ocean Conference (Lisbon, 2-6 June 2020)
3. Pan-African Conference (Sharm El Sheikh, October 2020)
4. Decade Kick-Off (Berlin, May-June 2021)
5. Mapping of the Ocean?
6. Ocean Data and Information System?
7. Deep Ocean?
8. Ocean Ecosystems?
9. Sargasso, Harmful Algal Blooms, Ocean Toxins?
10. Adaptation of Coral Reefs?
11. Ocean Based Capture and Storage of Carbon?
12. Area Based Management of the Ocean?
13. Capacity Development, Ocean Literacy, Education?
Process: timeline and milestones

First Global Meeting
- Multistakeholders

Regional workshops
- Multistakeholders

Second Global Meeting
- Multistakeholders

- Stakeholders engagement
- Side Events and sector targeted activities
- Synthesis from GPM/regional meeting/thematic consultations
- Science plan scoping + Drafting of Implementation Plan

Decade Implementation Plan (1.0)
- Science Action Plan
- Capacity Development Plan
- Governance, monitoring and reporting
- Communication

2nd UN Ocean Conf., Lisbon
- UNGA
- IOC GB
Preparatory Phase: Consult with regional stakeholders

- North Atlantic: Canada, Halifax, 7-9 Jan 2020
- Arctic: Denmark, Copenhagen, 29 Apr – 1 May 2020
- Mediterranean: Italy, Venice, 13-16 Jan 2020
- Pan-Pacific: India, Channai, 8-10 Jan 2020
- South Pacific: Peru, Guayaquil, 24-26 Sep 2019
- Antarctic: Consultation, Feb. 2020 TBC
- North Pacific: Tokyo, 31 Jul - 2 Aug 2019
- South Atlantic: Brazil, Rio de Janeiro, 25-27 Nov 2019
- Caribbean: Mexico, TBD
- Pan-African: Kenya, Nairobi, 8-10 Jan 2020
- Arctic: Norway, Tromso, Jan 29, 2020
- Antarctic Consultation: Feb. 2020 TBC

In partnership with The UN Decade of Ocean Science for Sustainable Development (Preparatory Phase: 2018-2020) is supported by The 1st Global Planning Meeting supported by Sustainable Ocean Business Action Platform, International Oceanographic Commission UNESCO, 7, place de Fontenoy, 75007 Paris, France.

http://oceandecade.org
#OceanDecade
Process: timeline and milestones

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Second Global Meeting
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EPG/UN+
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2nd UN Ocean Conf., Lisbon
UNGA
IOC GB
Engaging Stakeholders from all Sectors

The Ocean Decade Alliance

to

- **Raise awareness** about and build support to the Decade;
- **Create a platform** focussing science on providing solutions for ocean sustainability; and
- **Establish a major network** to stimulate related actions and commitments at all levels.

(Launch at the UN Ocean Conference in Lisbon in June 2020)