

Roadmap to Oceans and Climate Action (ROCA)



Outcomes of the Initial Working Meeting of the Roadmap to Oceans and Climate Action (ROCA)

Advancing the Oceans and Climate Agenda for the Next Five Years

May 22-23, 2017

Organized by the Intergovernmental Oceanographic Commission, UNESCO, Global Ocean Forum, Oceano Azul Foundation, Portugal, and the Ocean Policy Research Institute, Sasakawa Peace Foundation, Japan

UNESCO, 7 Place de Fontenoy, Paris

The purpose of this Working Meeting was to operationalize the five-year Roadmap to Action on Oceans and Climate (ROCA) initiative together with partners and other interested parties, and to discuss and move forward on priority actions to advance the oceans and climate agenda in the next five years. Participants discussed the six cross-cutting themes of *Roadmap to Ocean and Climate Action: 2016 to 2021*: the central role of oceans in climate, mitigation, adaptation and Blue Economy, displacement, financing, and capacity development. ROCA members reaffirmed the importance of addressing the six themes as a “package deal” and through an integrated approach, since the 183 coastal and SIDS nations around the world will need to address all of these issues, to varying extents. A list of participants, a description of the ROCA initiative, a brief overview of the Roadmap’s recommendations, and a link to the Roadmap are found at the end of this document.

Overview of Discussion at the Meeting of the ROCA Partners

A central message emanating from the working meeting in light of the upcoming *United Nations Conference to Support the Implementation of Sustainable Development Goal 14: Conserve and Sustainably Use the Oceans, Seas, and Marine Resources for Sustainable Development* is that for SDG14 to be realized and fully implemented, climate change impacts on oceans ecosystems and coastal and island nations must be recognized and the opportunities of a low-carbon Blue Economy must be enabled. ROCA partners discussed the low carbon Blue Economy as a vision for measurable policies that promote a sustainable ocean economy, where economy activity is low carbon and is grown in balance with the long-term ability of ocean ecosystems to support this activity.

The meeting began with a stage-setting discussion of the central role of oceans in climate and the imperative of immediate, concrete action addressing climate change impacts on oceans. Participants emphasized early on that a growing ocean low carbon economy which brings benefits to coastal and island populations relies on healthy marine ecosystems to remain sustainable in the long term. The initial discussion highlighted bright spots in ocean and climate action from various organizations represented in ROCA and noted that the inclusion of oceans in the Paris Agreement (in the Preamble and as one of the major themes addressed by the UNFCCC Global Climate Action Agenda) are important achievements in oceans and climate policy. The momentum from these advances must be used to bring concrete action which safeguards our global commons for the future and translates research and policy recommendations into on-the-ground progress.

ROCA members concluded the first session with remarks that urged placement of research and science in a social context. Members of both the ocean and climate communities need to build logical links between the various components defined in the Roadmap. ROCA reaffirmed its commitment to raise high-level awareness of lesser-known ocean and climate issues, such as ocean acidification and deoxygenation. Partners also agreed that there is much work to be done in raising visibility of innovative research into mitigation and *adaptation* benefits offered by ocean and coastal ecosystems.

Mitigation. Participants moved to discuss aspects of mitigation. A particularly important point was the placement of mitigation efforts in the context of integrated coastal and ocean management; many ocean-based methods of climate change mitigation can be intertwined with other benefits. For example, participants noted the increasing visibility of Blue Carbon ecosystems as carbon sinks and emphasized that these ecosystems also provide other services such as storm surge protection and nursery habitats that underpin healthy fishery stocks. Going forward, management of ocean ecosystems should consider all ocean vectors for carbon sequestration in tandem to other long-term management goals. To this end, ROCA will provide a platform to share best practices that incorporate this method through the production of an annual report on *Measuring Progress on Oceans and Climate* and the creation of a knowledge management mechanism. Partners envisioned the annual report on oceans and climate action, to be produced ahead of each UNFCCC Conference of the Parties (COPs), as a contribution to the planned UNFCCC Global Climate Action Yearbook, and as a way of maximizing visibility of ocean issues and progress at the COPs.

Adaptation and Blue Economy. The deliberations on adaptation underscored the need to clearly define the low-carbon Blue Economy as a strategy to effectively implement SDG14. ROCA will provide a platform to discuss a cohesive definition of Blue Economy and best practices which implement it. One relevant emerging effort acknowledged and discussed at the meeting was the recently registered Blue Innovation Institute of Grenada. Partners emphasized that effective growth of economic benefits from the ocean economy must occur alongside the preservation of environmental health, which necessarily includes shrinking of carbon emissions. ROCA's annual report will share effective examples of Blue Economy efforts.

Displacement. ROCA partners noted that much work needs to be done to effectively understand and mitigate human and economic losses from climate-induced displacement, which will heavily impact coastal and island populations. ROCA will work on this issue by identifying appropriate avenues for a new legal definition of persons displaced by climate change and their rights. The partners identified the Sendai Framework for Disaster Risk Reduction as an important resource for the UNFCCC Adaptation Committee to use as it begins to address issues of displacement and resolved to work with the Committee, the Sendai Framework process, and other relevant groups.

Financing. The discussion of ocean and climate financing centered about the concept of a Financial Tracking Mechanism, aimed at documenting and analyzing the flow of funds from public climate related funds to coastal and SIDS nations, and the extent to which the flow of funds meets national priorities on oceans and climate. ROCA will urge accountability in tracking public climate financing as well as open

information sharing with potential private finance sources so that financial risks are better understood and managed. Partners acknowledged that all types of capital, from public and private sources, will be necessary to meet the goals of the Roadmap and the Nationally Determined Contributions (NDCs) of developing countries, particularly SIDS facing dramatic impacts of climate change. ROCA will work in partnership with the Scripps Institution of Oceanography to analyze the inclusion of oceans and coasts in NDCs and determine what is necessary to support their full realization.

Capacity Development. The partners concluded their discussion of the six Roadmap themes by highlighting the cross-cutting nature of capacity development. While many capacity development efforts in the past have largely emphasized the “individual” aspects of capacity development (e.g., training of individuals), ROCA urges focusing on “institutional” and “societal” levels of capacity development as well, which will enable nations to effectively implement their NDCs, draft effective domestic legislation to sustainably manage their ocean areas and industries, and to grow their ability to conduct independent science and policy research. ROCA partners will support this process with the NDC report and knowledge management mechanism.

Participation in forthcoming high-level fora. Looking forward, the ROCA partners will participate in and organize events at several forthcoming opportunities to advance the ocean and climate issues at high-level events in all relevant UN and international fora and at the national/regional level, especially through:

--Participation in the UN Ocean Conference, June 5 to 9, 2017 (and especially, holding the *Side Event on Oceans and Climate and the Blue Economy: Essential to SDG 14 Implementation*, June 8, 2017)

--The UNFCCC COP 23, co-organizing the Oceans Action Day at COP 23, November 11, 2017, Bonn

--Advancing the oceans and climate issues through the forthcoming Our Ocean Conferences (Malta October 5 to 6, 2017, European Commission; Indonesia 2018, Government of Indonesia; Norway 2019, Government of Norway)

--The World Ocean Summit, organized by The Economist, March 7-9, 2018 in Riviera Maya, Mexico

As well, participants noted that while there has been some success in bringing the oceans community into the international climate change negotiations, there must also be efforts to increase awareness of climate and ocean issues in the ocean-related processes such as the development of a legally binding agreement on biodiversity beyond national jurisdiction (BBNJ) instrument under UNCLOS.

ROCA Reports to be prepared in 2017

1) Production of the first Annual Report on *Measuring Progress on Oceans and Climate Action*. This report, part 1 of a joint report to be prepared together with the Alliance of Alliances (Ocean and Climate Platform), will review major developments taking place on each of the main 6 themes discussed above from a global perspective. Part 2, to be prepared by the Ocean and Climate Platform, would review the developments/advances made by each of the major initiatives underway related to oceans and climate. This report would be incorporated as a contribution in the UNFCCC Yearbook on Climate Change Action.

2) Review of the Nationally Determined Contributions (NDCs) submitted by SIDS and other coastal nations that have included oceans and coasts in their NDCs to determine how these can be supported and realized, and preparation of a guide for nations on the inclusion and consideration of oceans and coasts in their national climate plans (in cooperation with the Scripps Institution of Oceanography).

3) Development of a Financial Tracking Mechanism to track and report on public and private investments on the major oceans and climate issues (in cooperation with Duke University).

4) Development of a Knowledge Management/Clearinghouse Mechanism to capture and exchange knowledge and best practices in the various topic areas (e.g. Mitigation, Adaptation, Blue Economy, Displacement, Financing, Capacity development) (in cooperation with the IOC/UNESCO).

Meeting Participants

**remote intervention*

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John Virdin, Director, Oceans & Coastal Policy Program, Nicholas Institute for Environmental Policy Solutions, Duke University

About the Roadmap to Oceans and Climate Action (ROCA)

Overview

The Roadmap to Oceans and Climate Action (ROCA) is a multi-stakeholder initiative involving governments, international agencies, NGOs, scientific institutions, private sector, and subnational authorities to advance the oceans and climate agenda (especially in the UNFCCC, the UN Ocean Conference, and in other United Nations fora), and at the national level in all countries. ROCA was launched at the UNFCCC COP 22 in Marrakech, Morocco. The ROCA works to implement the **Strategic Action Roadmap on Oceans and Climate: 2016-2021**, first discussed at the Oceans Day at COP 21 in Paris 2015, and then prepared in detail by 37 international experts throughout 2016 and highlighted at the Oceans Action Day at COP 22 Marrakech (November 12, 2016).

Type of Partners involved

Governments, international agencies, provincial and local governments, civil society (NGOs, private sector, academic/scientific institutions)

ROCA Leadership

Global Ocean Forum * Intergovernmental Oceanographic Commission of UNESCO * Ocean Policy Research Institute, Sasakawa Peace Foundation, Japan * Oceano Azul Foundation, Portugal

Initial Partners

Coastal Zone Canada Association * Conservation International * Deep Ocean Stewardship Initiative * Duke University * EUCC * Food and Agriculture Organization of the United Nations * Future Ocean Alliance * IUCN * Global Ocean Forum * Government of Grenada * Government of Palau * Government of Seychelles * Intergovernmental Oceanographic Commission, UNESCO * International Alliance to Combat Ocean Acidification* Ocean Policy Research Institute, Sasakawa Peace Foundation, Japan * Oceano Azul Foundation, Portugal * Ocean Recovery Alliance, Hong Kong* Pacific Community * Plymouth Marine Laboratory * Scripps Institution of Oceanography * South Pacific Regional Environment Programme * The Nature Conservancy * University of Delaware * UN Environment * World Ocean Network * World Ocean Observatory *

Formal Registration of ROCA

ROCA is being registered as an initiative in the UNFCCC context and as a voluntary commitment in the UN Ocean Conference, June 2017

Expressions of Interest in ROCA

Expressions of interest to participate in the ROCA initiative will be considered by the ROCA leadership. Please send a note regarding your interest to Dr. Biliانا Cicin-Sain, Global Ocean Forum, bilianacicin-sain@globaloceans.org

Implementing the Roadmap to Oceans and Climate Action

ROCA works to implement the recommendations the Roadmap presents in six major areas: 1. Central of role of oceans in regulating climate, 2. Mitigation, 3. Adaptation and Blue Economy, 4. Displacement, 5. Financing, and 6. Capacity development, for implementation in the next 5 years.

For each of these issues, the Roadmap addresses:

- 1) the current status of the issue (and, as relevant, the science related to the issue)
- 2) the current state of play of the issue within the UNFCCC

- 3) the opportunities and pathways that may be available within the UNFCCC to advance the issue in the next five years
- 4) the opportunities and pathways that may be available outside of the UNFCCC to advance the issue
- 5) financial considerations regarding each issue

The Roadmap report features a Foreword by H.E. Ambassador Ronald Jumeau, Ambassador for Climate Change and Small Island Developing State Issues, Republic of Seychelles; H.E. Ambassador Caleb Otto, Permanent Representative of the Republic of Palau to the United Nations; and H.E. Ambassador Angus Friday, Ambassador to the United States of America, the United Mexican States, and the Organization of American States, Embassy of Grenada, Washington DC.

Please see:

Roadmap to Oceans and Climate Action

Report: <https://globaloceanforumdotcom.files.wordpress.com/2013/03/strategic-action-roadmap-on-oceans-and-climate-november-2016.pdf>

Summary of Roadmap: <https://globaloceanforumdotcom.files.wordpress.com/2013/03/final-roadmap-summary-nov-7-2016.pdf>

Key Roadmap Recommendations

1. The Central Role of Oceans in Climate

1.0 Recognize the central role of oceans in climate and the need to implement stringent reductions in greenhouse gas emissions to avoid disastrous consequences on coastal and island communities, marine ecosystems, and ocean chemistry.

Oceans and seas cycle over 28% of carbon dioxide emitted to the atmosphere from burning fossil fuels since 1750, and absorbed 30% of the heat added to the global system since the 1970s. Biogeochemical processes performed by the ocean are vast and priceless ecosystem services. As the concentration of greenhouse gasses increase, options to overcome or limit the risks on ocean ecosystems and on coastal and island populations will become fewer and less effective. An overall reduction in marine biodiversity is expected to occur. Coral reefs are among the most vulnerable; they provide food, income, and protection for about 500 million people. Further scientific work is needed to understand the extent of climate change impacts on ocean ecosystems and communities dependent on healthy oceans between mean global temperature increases of 1.5 and 2.0°C and thus help in decision-making.

Sea level rise impacts on coastal communities:

50-centimetre rise in sea level could displace 1.2 million people from low-lying islands in the Caribbean Sea and the Indian and Pacific oceans. Under RCP8.5 (business as usual), SLR could be 3

metres by 2100. The highest point on average in atoll countries is 3 to 4 metres.

In 2005, there were 136 large coastal cities with a population exceeding one million people and a collective population of 400 million people. In those coastal cities over the next 50 years, damages could rise from US\$6 billion/year to US\$52 billion/year solely due to increase in population, property and its value.

Fisheries and aquaculture and food security:

Provide food for over 4 billion people and at least 50% of animal protein to 400 million people in the poorest countries. Increased temperatures will affect fish physiological processes resulting in both positive and negative effects on fisheries and aquaculture systems. Coral reef systems, housing one out of four marine species, will be at increased risk of coral bleaching.

In a warmed world, aquatic ecosystem productivity is likely to be reduced in most tropical and subtropical oceans, seas, and lakes and increased in high latitudes.

Ocean acidification:

Since the 1850s, mean surface seawater pH has decreased by 0.1 units, equivalent to a 26% increase in acidity. Ocean acidification will add to the stress already caused by increased ocean warming as well as other ocean stressors such as deoxygenation,

pollution and overfishing, together increasing the risk to ecosystems and society.

As seawater pH decreases, carbonate ion (CO_3^{2-}) concentration decreases as well, making it harder to form minerals such as calcium carbonate (CaCO_3). Furthermore, if concentrations become low enough, it can cause these minerals to dissolve.

Ocean deoxygenation:

The combination of lower solubility, reduced ventilation, and increased respiration act to cause ocean deoxygenation.

Deoxygenation reduces the quality and quantity of habitat that wild fisheries species use and that is available for aquaculture production. Chronic exposure to insufficient oxygen also increases disease susceptibility, interferes with reproduction, and reduces growth rates. Under a business-as-usual scenario, by 2050 relative to now, the maximum body size of fish communities is expected to decrease by 14-24%.

2. Mitigation

2.0 Further develop and apply mitigation measures using the oceans, including implementing “blue carbon” policies, reducing CO₂ emissions from ships, developing ocean-based renewable energy, and considering (long-term/no-harm) ocean-based carbon capture and storage. Encourage all nations to reduce CO₂ emissions so that the Paris Agreement to limit emissions to well below 2°C can be achieved.

2.1 Sustainably conserve and enhance coastal ecosystems as major carbon sinks and integrate the management of the coastal carbon eco-systems (“Blue Carbon”) into the policy and financing processes of the UNFCCC, and account for these ecosystems in the national reports to the UNFCCC, the NDCs. Coastal carbon ecosystems need to be mapped, conserved and restored as globally significant carbon sinks. Currently the management of marine ecosystems is not recognized as a climate mitigation option under the UNFCCC. Many countries have started to include coastal ecosystem management into their national climate change mitigation activities, including under REDD+, NAMAs and other mechanisms.

2.2. Further accelerate progress in addressing air emissions from ships.

Although international shipping is the most energy efficient mode of mass transportation, a global approach to further improve its energy efficiency and effective emission control is needed as projections forecast a growth in CO₂ emissions for international maritime transport of 50% to 250% in the period up to 2050. CO₂ emissions from international shipping cannot be attributed to any particular national economy due to its global activities and complex operation. The main avenue for change is through the IMO and the MARPOL convention.

In addition to the energy efficiency requirements, two partnership projects to further technical cooperation and technology transfer: Global Maritime Energy Efficiency Partnerships Project (GloMEEP) and the establishment of regional Maritime Technology Cooperation Centres (MTCCs).

GloMEEP, an initiative of the GEF, UNDP, and IMO, will focus in particular on building capacity to implement technical and operational measures in developing countries, where shipping is increasingly concentrated. The aim is to promote a low-carbon maritime sector.

2.3 Sustainably develop marine renewable energy (MRE, such as offshore wind power, wave energy, tidal power, and aquatic biofuels); and accelerate efforts to implement these approaches through integrated marine planning and enhanced regulatory frameworks. Goals with respect to MRE include: resource-mapping exercises to understand the nature of MRE resources available to countries and regions, long-term revenue support to R&D and construction, integrated MSP, adaptive regulatory frameworks, test center establishment, and sharing of best practices through clearinghouse mechanism.

2.4 Consider the potential for ocean-based carbon capture and storage (CCS), and, if appropriate, further develop regulatory systems for ocean-based sequestration and marine engineering.

CCS, as well as other geoengineering methods, need to be conducted through a comprehensive regulatory framework, based on a risk assessment and management approach. The existing regulatory framework relies on the 2006 and 2009 amendments to the London Protocol (“Risk Assessment and Management Framework for CO₂ Sequestration in Sub-Seabed Geological Structures” and “Specific Guidelines for Assessment of Carbon

Dioxide Streams for Disposal into Sub-seabed Geological Formations”).

3. Adaptation

3.0. Implement ecosystem-based adaptation (EbA) strategies through integrated coastal and ocean management institutions at national, regional, and local levels to reduce vulnerability of coastal/ocean ecosystems and of human settlements, and build the management capacity, preparedness, resilience, and adaptive capacities of coastal and island communities. Only in the 2000s did the international community fully realize that mitigation efforts would not be sufficient to avoid all significant consequences of climate change and that adaptation needed to be supported urgently.

3.1. Carry out adaptation measures through the integrated coastal and ocean management (ICM) institutions created at national and local levels in all regions of the world since the 1992 Earth Summit, in close cooperation with disaster risk agencies and affected sectors and communities

ICM and adaptation share similar principles: institutional coordination, public participation in decision-making, strong science-policy interfaces, etc. ICM and adaptation are defined as continuous, dynamic and adaptive processes of decision-making and implementation.

3.2. Apply ecosystem-based approaches to adaptation (EbA), especially regarding green infrastructure to provide natural system protection for defense against sea level rise, storms, and flooding. Goals with respect to EbA: Develop national coastal risk maps, develop guidelines or best practices for restoration of coastal ecosystems, develop large scale commitments to conserve and restore degraded coastal ecosystems, account for coastal ecosystems in NAPs, identify finance options..

3.3 Establish and effectively manage networks of marine protected areas in national and international waters to protect marine biodiversity and to enhance resilience of marine ecosystems to climate change, achieving the CBD's Aichi Biodiversity Target of conserving at least 10% of marine and coastal areas by 2020. The priority for MPAs should be protecting Key Biodiversity Areas (KBAs) and supporting the resilience of biodiversity and ecosystem services, especially

vulnerable marine habitats with high societal value such as coral reefs, mangroves, estuaries, and deep-sea habitats, such as canyons, and seamounts, which contribute to climate change mitigation.

4. Blue Economy

4.0 Promote and apply Blue Economy approaches with emphasis on low-carbon solutions and economic benefits to developing countries and SIDS (following SDG target 14.7). Blue Economies will take into account non-market goods and services, as well as externalities associated with ocean industries. “A sustainable ocean economy emerges when economic activity is in balance with the long-term capacity of ocean ecosystems to support this activity and remain resilient and healthy,” *Economist Intelligence Unit, 2015.* Key Points for blue economy: account for ocean’s natural capital, utilize MSP and ICM, and develop metrics to assess the transition to a low carbon Blue Economy and the benefits to coastal and island communities

5. Displacement

5.0 Develop and support measures to address the issues associated with the displacement of coastal and island populations as a result of climate change, which will necessitate improvement of international law in terms of definitions, rights and procedures for climate-induced refugees and migrants, including the development and implementation of appropriate financing measures. A refugee is “any person who is outside their country of origin and unable or unwilling to return there, on account of a well-founded fear of persecution for reasons of race, religion, nationality, membership of a group, or political opinion.” An environmental refugee is defined as “a person displaced owing to environmental causes, notably land loss and degradation, and natural disaster.” Migrants are people who leave or flee their home to seek better or safer surroundings. Migration can be voluntary or forced, but generally a combination of choices and constraints are involved. Climate-induced displacement falls within a “protection gap” between the definition of a migrant and a refugee.

The IOM projects 200 million will be displaced by 2050 due to overall environmental changes. In Vietnam, 1 million people could be displaced by 2050, and 60% of the Mekong delta could be flooded nearly year-round. In Bangladesh, 3 million people could be displaced by 2050. At least 2

islands of Kiribati have already disappeared, and the Maldives could lose 77% of its land by 2100 under mid-range SLR. The Paris Agreement's consensus to "to aim to limit the increase in global average temperature to 1.5°C," "1.5 to stay alive" is a critical development.

6. Financing

6.0 Adaptation and mitigation efforts in coastal and SIDS countries /communities should receive sufficient funding, through: Adequate assessment of costs and needs; development of financial tracking mechanism of financial flows for climate change funds related to oceans, coasts; earmarked funds to support SIDS and coastal population adaptation efforts and a mechanism to track those funds; earmarked funds for coastal infrastructure and EbA.

7. Capacity Development

7.0 Provide technical and financial assistance to SIDS, developing countries, and economies in transition to build capacity in the form of knowledge, tools, and scientific and political expertise to implement mitigation and adaptation measures, develop adaptive management capacity, early warning systems, and disaster risk reduction, and to develop knowledge management mechanisms to share knowledge among all countries within and outside the UNFCCC frameworks.

7.1 Promote the further enhancement of marine policy centers in developing countries and SIDS to build capacity in management and policy related to oceans and climate

7.2 Strengthen the advancement of global marine observations, research, and related capacity

development within the UNFCCC processes and beyond

7.3 Support the preparation of the IPCC report on Oceans—to integrate and update the assessment of AR5 using scientific findings on the central role of oceans and climate and likely scenarios and consequences

7.4 Sustained ocean observation should be included as part of national commitments, particularly within the framework of the UNFCCC and Agenda 2030/SDG 14 (target 14.a), in response to the call to increase knowledge to manage marine ecosystems sustainably, and understand the impacts of climate change and ocean acidification

7.5 Enhance technical capacity development of vulnerable countries through the establishment of regional oceanographic centers to increase cooperation among States on ocean-climate research and multi-disciplinary observation (in accordance with SAMOA Pathway decision 58.f)

7.6 Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels and the continued development of the Global Ocean Acidification Observing Network (SDG 14.3)

7.7 Expand public outreach and education efforts, following the Lima Declaration on Education and Awareness-raising (COP 20, 2014), to enhance individual capacity and public understanding of the ocean's role in planetary survival and in global and national well-being, of the risks posed to SIDS and coastal communities by climate change, and to catalyze public support for mitigation and adaptation responses.