

Ensuring Survival: Oceans, Climate, and Security

The Role of the Oceans in Climate Processes

The world's oceans play a central role in global climate processes, generating oxygen, absorbing carbon dioxide and regulating climate and temperature. But climate change is now threatening the oceans' ability to continue to provide these services. The more than 50% of the human population that lives in 183 coastal countries, including 44 small island nations, are already experiencing the earliest and most pronounced effects of climate change, and will suffer disproportionate impacts from ocean warming—e.g., sea level rise, extreme weather events, glacial retreat, and from ocean acidification, if bold action is not taken.

In its 2007 report, the Intergovernmental Panel on Climate Change (IPCC), amid growing global concern, also called urgent attention to significant social impacts of climate change, including the growing “climate divide” that exists between the developed and the developing world—that is to say, the brunt of the responsibility for the drivers of global climate change lies with the developed world but its impacts will be felt most drastically and immediately by the developing world.

The Global Ocean Forum's Role in Addressing Oceans and Climate Change

The Global Ocean Forum focused on oceans and climate issues as a central topic of discussion at the 4th Global Conference on Oceans, Coasts, and Islands (GOC4) Advancing Ecosystem Management and Integrated Coastal and Ocean Management in the Context of Climate Change, April 7-11, 2008, Hanoi, Vietnam, and emphasized the need to place climate change on the priority agenda of ocean and coastal leaders around the world in order to address the policy implications of ocean-related climate change impacts and to mobilize international and national responses to these issues. The conference emphasized, as well, the need for the global oceans community to intervene in the UN Framework Convention on Climate Change (UNFCCC) process to emphasize the role of oceans in the climate cycle, the vulnerability of coastal populations and small island developing States (SIDS) to climate change impacts, and the need for adequate financing to support adaptation and mitigation costs in coastal areas. Since 2008, the Global Ocean Forum has made climate change a major theme of its work and has strived to build a multi-stakeholder coalition of concerned organizations and agencies to address issues related to oceans and climate change.

The 4th Global Oceans Conference in Vietnam underlined the fact that ocean and coastal managers and policymakers



are at the front line of climate change. The climate issues that ocean and coastal leaders around the world will need to face will ineradicably change the nature of ocean and coastal management, introducing increased uncertainty,

the need to incorporate climate change planning into all existing management processes, the need to develop and apply new tools related to vulnerability assessment, and the need to make difficult choices in what in many cases will be “no win” situations, involving adverse impacts to vulnerable ecosystems and communities.

The Global Ocean Forum Expert Working Group on Oceans, Climate, and Security produced a policy brief for the 4th Global Conference, which recommended that Global Conference participants focus on the following major areas:

1. Identify appropriate policy responses to scientific findings on the effects and differential impact of climate change on different regions and peoples of the world
2. Address the “climate divide” and encourage international commitments and funding mechanisms to respond to the differential effects of climate change on different regions and peoples
3. Encourage a wide range of adaptation efforts
4. Understand and address global ocean changes, e.g., ocean warming, ocean acidification, changes in current systems, changes in polar regions
5. Properly manage mitigation efforts that use or rely on the oceans
 - alternative energy
 - carbon storage and sequestration
 - restoration and sustainable management of coastal ecosystems

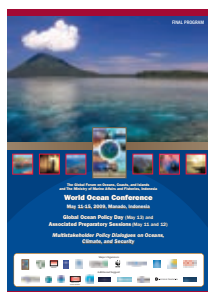
On the Road to the Copenhagen Climate Negotiations

The climate negotiations that culminated in Copenhagen in December 2009 at the Fifteenth Conference of the Parties to the UNFCCC (COP 15) aimed to reach agreement to reduce global CO₂ emissions to avoid the most severe impacts of climate change and catalyze action in moving the world on a course toward a low-carbon future. The negotiations aimed to forge in a successor agreement to the Kyoto Protocol, offering an important opportunity to underscore the importance of oceans, coasts, and SIDS in the new climate regime.

On the road to Copenhagen, in May 2009, the Global Ocean Forum worked closely with the Indonesian government to organize the Global Ocean Policy Day during the World Ocean Conference (May 11-15, 2009, held in Manado, Indonesia). The World Ocean Conference was intended to raise global awareness on the importance of addressing ocean and coastal issues in the context of the UN climate negotiations and produced the Manado Oceans Declaration, which was signed by representatives of 76 participating countries (<http://www.cep.unep.org/news-and-events/manado-ocean-declaration>).

Bringing together the high-level leaders around the world in an informal way, in the Global Conferences and in the Ministerial Roundtable, has been very useful in broadening the debate to include the perspectives of developing nations, developed nations, intergovernmental organizations, non-governmental organizations, industry, and civil society, and has helped to inspire Indonesia to take a leading role in global ocean affairs by convening the World Ocean Conference in 2009 which will be organized in coordination with the Global Forum.

-- **Indroyono Soesilo**, Chair, Agency for Marine and Fisheries Research, Ministry of Marine Affairs and Fisheries, Indonesia



The Global Ocean Forum organized the Global Ocean Policy Day on May 13, 2009, during the World Ocean Conference, with funding support from the Global Environmental Facility (GEF) (through the United Nations Development Program (UNDP)) and from the United Nations Environment Programme, in association with the Indonesian Ministry of Marine Affairs and Fisheries, The Nature Conservancy (TNC), the World Wildlife Fund (WWF), the Institute for Sustainable Development and International Relations (IDDRI), the Sea Level Rise

Foundation, Nausicaá and the World Ocean Network, providing the major opportunity during the World Ocean Conference for multi-stakeholder dialogue among 500 high-level government officials, international organizations, NGOs, industry, and scientists on the importance of the oceans in climate change, mitigation and adaptation strategies, and financing issues. The Global Ocean Policy Day was preceded by two days of preparatory panel discussions on the major themes of the conference, led by key decision-makers, scientists, ocean and coastal managers, and other practitioners.

A volume of policy briefs on the major climate/oceans issues was prepared for Global Ocean Policy Day. These policy briefs were aimed at high-level decision-makers, as well as the general public, and were distributed at the World Ocean Conference (a selection of these papers will be appearing in a special issue of Ocean & Coastal Management Journal in 2011). The Global Ocean Policy day also produced a Co-Chairs' Statement that was disseminated to the decision-makers present at the Manado Conference and to the press (see Box 10).



Oceans and Climate Change: Issues and Recommendations for Policymakers and for the Climate Negotiations, Policy Briefs prepared for the World Ocean Conference, May 11-15, 2009, Manado, Indonesia

<http://globaloceans.org/globaloceans/sites/udel.edu.globaloceans/files/Policy-Briefs-WOC2009.pdf>

The Global Ocean Forum Brings the Oceans to Copenhagen

Building on the outputs and momentum of the World Ocean Conference and the Global Ocean Policy Day, the Global Ocean Forum took the initiative to co-organize, together with the Government of Indonesia and the European Environment Agency, the first-ever Oceans Day at a UNFCCC Conference of the Parties, on December 14, 2009, at the European Environment Agency



Coral Triangle Initiative (CTI) Heads of State (Philippines, Malaysia, Indonesia, Timor Leste, Papua New Guinea, Solomon Islands) at the World Ocean Conference, May 2009



Dr. Muhammad, Dr. Lubchenco, H.S.H. Prince Albert II of Monaco, Dr. McGlade, Mr. Falkenberg, and Dr. Cicin-Sain at Oceans Day in Copenhagen



in Copenhagen, Denmark. Oceans Day aimed to stress the central role of oceans in the Earth's life-support system, and to address threats faced by coastal communities, especially in developing nations and SIDS. Oceans Day highlighted the direct link between climate change, ocean health, and human well-being and brought together 320 participants representing governments, UN agencies, non-governmental organizations, scientists, and industry from 40 countries to focus on the role of the oceans in climate change and the fact that the close to 50% of the world's population living in coastal areas will suffer disproportionately from ocean warming, sea level rise, extreme weather events, and ocean acidification. Oceans Day featured six expert panels on the central issues related to oceans and climate, as well as an evening reception with special addresses from world leaders.

Oceans Day at Copenhagen provided an invaluable opportunity for world leaders to express their support for the inclusion of oceans in the climate negotiations. The Global Ocean Forum was privileged to have the participation of the following leaders at Oceans Day: H.S.H Prince Albert II of Monaco; the Rt. Hon. Hilary Benn, Secretary of State for

the Department of Environmental Affairs, United Kingdom; Ms. Monique Barbut, CEO of the Global Environment Facility; Ms. Angela Cropper, Deputy Executive Director of UNEP; Dr. Jane Lubchenco, Administrator of the National Oceanic and Atmospheric Administration, US; South Africa Deputy Minister of Environmental Affairs, Rejoice Mabudafhasi; Mr. Karl Falkenberg, Director General of DG Environment from the European Commission; Dr. Ibrahim Thiaw, Director of the Division of Environmental Policy Implementation, UNEP; Mr. Warren Evans, Director of the Environment Department of the World Bank; and French Ambassador for Climate Change, Brice Lalonde.

A Summary of the Oceans Day at Copenhagen may be found at <http://www.oceansday.org/pdf/summary.pdf>.

The Cancún Climate Negotiations: Building on the Momentum of Oceans Day at Copenhagen

In the lead up to the next UNFCCC COP held the following year, the Global Ocean Forum focused on climate and oceans as a central theme at the 5th Global Oceans Conference 2010, held in Paris, UNESCO, May 3-7, 2010, which was co-organized by the Global Ocean Forum on Oceans, Coasts, and Islands, the Government of France, and the Intergovernmental Oceanographic Commission, UNESCO, with 67 other organizations around the world, and involving 863 leaders from 80 countries. The Conference Co-Chairs' Statement emphasized the need to launch a comprehensive ocean and climate initiative within and outside the UNFCCC process, including elements of mitigation, adaptation measures, programs focusing on capacity development, public education and awareness, and measures to address the issues associated with the possible displacement of coastal populations.

While the UN climate negotiations in Copenhagen were less successful than hoped for, the efforts of the Global Ocean Forum have been successful in focusing high-level attention on oceans and climate issues. The Global Forum, therefore, decided to continue the difficult task of bringing the oceans message to the climate negotiations, while recognizing that this process would represent an uphill battle.

The next step in these efforts was the organization of Oceans Day at Cancún, December 4, 2010, Cancún, Mexico (during the UNFCCC COP 16). Oceans Day at Cancún was organized by the Global Ocean Forum in association with the Global Environment Facility, the Secretaries of Environment and Natural Resources of the Mexican States of Campeche, Quintana Ro, and Yucatan, and the Secretariat of Environment and Natural Resources (SEMARNAT), Mexico, in collaboration with UN-Oceans and the United Nations Development Programme (UNDP). Oceans Day at Cancun brought together Parties and observer States, intergovern-



Participants in Oceans Day at Cancún during the UNFCCC COP16

mental organizations, NGOs, the scientific community, and members of civil society to emphasize the role of oceans and coasts in climate and to focus high-level attention on the importance of addressing oceans issues in the UN climate negotiations.

Oceans Day at Cancún aimed to highlight the direct link between climate change, the health of the oceans, and human well-being, as well as the need for sufficient funding to support bold mitigation and adaptation measures to minimize climate change impacts on coastal communities and ocean resources. Additionally, Oceans Day featured working group sessions to advance strategic thinking on aspects of a comprehensive agenda on oceans and climate, and special sessions on adaptation needs and related financing. The Co-Chairs' Statement Emanating from the Cancun Oceans Day is found in Box 10 and the Summary of the Cancun Oceans Day discussions is found at <http://www.oceansday.org/>.

Bringing Oceans to the Durban Climate Negotiations, on the Road to Rio+20

The Durban Oceans Day took place on 3 December 2011, at the Rio Convention Pavilion, on the sidelines of the 17th session of the Conference of the Parties (COP 17) to the UN Framework Convention on Climate Change (UNFCCC) in Durban, South Africa.

The meeting brought together over 170 participants representing governments, international organizations, the scientific community, academia, and non-governmental organizations. It was organized by the Global Ocean Forum in association with the Government of South Africa (Department of Environmental Affairs and Tourism), the Global Environment Facility (GEF), the UN Development Programme (UNDP), the Intergovernmental Oceanographic Commission of UNESCO (IOC-UNESCO), the University of Delaware, the Food and Agriculture Organization of the UN (FAO), the World Meteorological Organization (WMO), the



Dr. Biliانا Cicin-Sain, Hon. Rejoice Mabudafhasi, Ms. Ellycia Harrould-Kolieb, Dr. Tony Haymet, and Dr. Carol Turley

New Partnership for Africa's Development (NEPAD), the Korea Ocean Research and Development Institute (KORDI), the Organizing Committee of EXPO 2012 Yeosu Korea, City of Yeosu, Republic of Korea, the GEF/UNDP/UN Environment Programme (UNEP) African Large Marine Ecosystem (LME) projects, the Global Partnership for Climate, Fisheries, and Aquaculture, the Plymouth Marine Laboratory, and the World Ocean Network.

The one-day meeting was organized in seven sessions, addressing: Oceans and coasts at the UNFCCC and at Rio+20; climate change and African fisheries; evidence of climate change from the LMEs; progress on major oceans and climate issues; oceans and climate issues in small island developing States (SIDS); capacity building and public education; and mobilizing action on oceans and climate.

During the meeting, participants discussed a variety of issues, including the impacts of sea level rise, extreme weather events, the specific vulnerability of SIDS and ocean acidification. Participants also discussed the urgent need to address oceans and coasts within and outside the UNFCCC process, including through an integrated programme for oceans and climate.

The Co-Chairs' Statement Emanating from the Durban Oceans Day is found in Box 11 and the ENB Summary of Oceans Day at Durban is found at <http://www.globaloceans.org/sites/udel.edu.globaloceans/files/OceansDayAtDurban-ENBSummary.pdf>.



Box 10. Co-Chairs' Statement emanating from Cancún Oceans Day during the UNFCCC COP 16, December 4, 2010, Cancún, Mexico

Co-Chairs' Statement emanating from

Cancún Oceans Day: Essential to Life, Essential to Climate
at the Sixteenth Conference of the Parties to the United Nations Framework Convention on Climate Change, December 4, 2010, 9:00 AM to 6:00 PM
Cancún, Mexico

The world's oceans play a central role in global climate processes, generating oxygen, absorbing carbon dioxide and regulating climate and temperature. But climate change is now threatening the oceans' ability to continue to provide these services. The more than 50% of the human population that lives in 183 coastal countries, including 44 small island nations, are already experiencing the earliest and most pronounced effects of climate change, and will suffer disproportionate impacts from ocean warming—e.g., sea level rise, extreme weather events, glacial retreat, and from ocean acidification if bold action is not taken.

However, although oceans and coasts are inextricably linked to climate, they have not yet figured prominently on the agenda of the UNFCCC and have largely been regarded as a "sectoral nuisance."

Oceans Day at Cancún, which was organized by the Global Ocean Forum on Oceans, Coasts, and Islands, in association with the Global Environment Facility (GEF), the Secretaries of Environment and Natural Resources of the Mexican States of Campeche, Quintana Roo, and Yucatan, and the Secretariat of Environment and Natural Resources (SEMARNAT), Mexico, in collaboration with other partners, brought together close to 100 representatives from government, intergovernmental, non-governmental, academia, museums and aquaria, and the private sector to emphasize the importance of considering oceans in the climate negotiations of the UNFCCC.

This was the second Oceans Day to be held in the context of a UNFCCC COP, building on Oceans Day at UNFCCC COP 15 in Copenhagen, held on December 14, 2009 (<http://www.oceans-day.org/>).

Growing Scientific Evidence on Climate and Oceans

Recent scientific evidence indicates that impacts of the changing global climate on oceans and coasts far exceed the findings of the 2007 report of the Intergovernmental Panel on Climate Change (IPCC).

Sea-Level Rise

-- There is now compelling evidence that sea level rise will be at least 1 meter by 2100, with the possibility of even higher levels of sea level rise likely.

Glacial Retreat

-- Polar ice is continuing to melt at a rapid rate, contributing to global sea level rise and the potential alteration of ocean currents and ecological processes.

Ocean Acidification

-- The oceans have increased in acidity by 30 percent since the industrial revolution and are predicted to become even more acidic, undergoing a change in ocean chemistry not seen for 65 million years. Ocean acidification significantly hinders the ability of shell-forming organisms (such as corals and shellfish) to construct their shells, and can impact marine species distribution, notably fisheries, with negative implications for food security. Fish, including shellfish, provide one billion people with their primary source of animal protein, and another three billion people with 15 percent of their protein.

Oceans and Coasts in the Global Carbon Cycle

Oceans and coastal areas are a major sink for carbon and a valuable tool for climate change mitigation. Marine areas store and cycle over 90 per cent of the earth's CO₂, while removing about 30 per cent of atmospheric CO₂—current estimates conclude that the oceans have an annual net atmospheric uptake in the order of 2 gigatons of CO₂ (GtCO₂). This is of particular importance when compared to the annual net terrestrial uptake, estimated between 0.5–2.5 GtCO₂. However, the oceans are quickly becoming oversaturated with CO₂, which is negatively impacting biodiversity and ecosystems. This emphasizes the need for stringent emissions reductions.

The ability of oceans and coasts to store carbon is also being compromised by the rapid destruction and degradation of coastal and marine ecosystems. Stored carbon dioxide is released when coastal ecosystems are destroyed, which can become a significant source of greenhouse gas (GHG) emissions. For example, 13.5 GtCO₂ will be released within the next 50 years as a result of mangrove clearance of 35,000 km², equivalent to all transport-related emissions in 27 EU countries from 1997 to 2005.

Climate Change and Marine Biodiversity

The linkages between climate and biodiversity were underscored at the Tenth Meeting of the Conference of the Parties to the Convention on Biological Diversity (CBD COP 10) in Nagoya, Japan, October 18-29, 2010. Parties in Nagoya highlighted that climate change impacts, which are predicted to increase in the future, have significant implications for biodiversity and will serve to exacerbate the negative impacts of other harmful human activities. The Nagoya Oceans Statement (emanating from the Nagoya Oceans Day organized by the Global Ocean Forum on Oceans, Coasts, and Islands, October 23, 2010; please

Box 10 continued...

see: http://globaloceans.org/sites/udel.edu.globaloceans/files/Nagoya_Oceans_Statement.pdf) emphasized that many life-sustaining ecosystems, such as coral reefs, are highly sensitive to climate change, and that climate change adds an additional stressor to biodiversity and ecosystems already facing significant pressures. Climate change will likely result in species migrations, the spread of invasive species, and will have adverse impacts on fisheries and food security. Further, a 20-25 percent loss of marine biodiversity leads to a 50-80 percent loss of ecosystem function, which may well threaten the life support function of the oceans and their role in the global carbon cycle.

Coastal Adaptation

Over half of the world’s population living within 100 kilometers of the coast is living less than 100 meters above sea level. Coastal populations, and especially small-island developing states (SIDS), are highly vulnerable to the impacts of sea-level rise, glacial retreat, extreme weather events, and coastal inundation. Ecosystem-based adaptation approaches promoting the preservation and restoration of coastal ecosystems and natural buffers, some of which are already being implemented as part of integrated coastal management efforts in many coastal nations, must be strengthened and promoted to increase the resilience of coastal ecosystems and communities to the impacts of climate change. However, many areas lack the necessary capacity to implement adequate adaptation measures. Hence, there is an urgent need for technical and financial adaptation assistance for the world’s most vulnerable coastal populations.

Climate Change Financing for Coastal and Island Populations

Current adaptation cost estimates for coastal areas and small island states are woefully inadequate, as are the adaptation resources currently available. In 2007, the UNFCCC estimated the cost of adaptation in coastal zones at about \$11 billion/year, using lower sea level rise predictions and not including potential impacts of increased storm intensity. With over half of the world’s population living in coastal regions and likely to experience the most pronounced effects of climate change, at least half of the funds made available for adaptation should target coastal and island populations.

While progress is being made in the assessment of adaptation costs for developing countries, existing sectoral estimates remain fragmented and incomplete. For example, most cost estimates for sea level rise focus on infrastructure damage, but do not address saltwater intrusion in coastal aquifers and the destruction of habitats that support fisheries and mariculture. In addition, the significant monetary non-market value associated with coastal and ocean services are largely unaccounted for. For example, cur-

rent valuations of wetland services do not incorporate the values associated with coastal storm protection, water filtration, and spawning grounds for commercially important fish species.

In addition, costs of impacts on coastal and marine ecosystems and the critical economic and climate-regulating functions they provide have not been addressed at all. Adaptation financing support for developing countries has been hailed since the inception of the UNFCCC process in 1992, yet little has actually materialized. There is, therefore, an obvious need to incorporate adequate financing for coastal adaptation into any forthcoming climate regime.

Integrated Strategy on Oceans and Coasts

In light of the various interconnected elements associated with oceans and climate, members of the global oceans community--governments, international agencies, NGOs, science groups, and the private sector--are mobilizing to call attention to the oceans and climate issue. The Global Oceans Conference 2010, held on May 3-7, 2010 at UNESCO, Paris, brought together over 800 participants from 80 countries, who underscored the need to develop an integrated strategy for oceans and coasts within and beyond the UNFCCC. Such a program should include provisions for:

- (i) Mitigation, emphasizing the need for stringent reductions in emissions within a short time frame, and recognizing the positive contribution that oceans play in the global carbon cycle, as well as using the oceans for a variety of mitigation activities.
- (ii) Adaptation through integrated coastal and ocean management institutions at local and regional scales, contributing to the improved preparedness, resilience, and adaptive capacities of coastal communities;
- (iii) Programs focusing on capacity development, public education and awareness to prepare national and local officials, and the public to address climate change; and
- (iv) Measures to address the issues associated with the displacement of coastal populations as a result of climate change.

Priority Actions at UNFCCC COP 16 and Beyond

As an important step in the Rio+20 process, the oceans community recommends taking the following actions to advance the global oceans and climate agenda both within the UNFCCC and in the overall Rio+20 process:

Box 10 continued...

1. Enact stringent and immediate reductions in CO₂ emissions

- Ensure the continuing functioning of the oceans in sustaining life on Earth by adopting the most stringent reductions in greenhouse gas emissions, within a short timeframe, to avoid disastrous consequences on oceans and coastal communities around the world;
- Avoid dangerous levels of ocean acidification by reducing CO₂ emissions; and
- Incorporate issues related to oceans and climate into the discussions of the UNFCCC Ad Hoc Working Group on Long-term Cooperative Action (AWG-LCA) and any subsequent agreements on emissions reductions.

2. Deepen understanding of "Blue Carbon"

- Natural carbon sinks in coastal areas (e.g., mangroves, seagrass beds, kelp forests, tidal marshes), which have a greater capacity (per unit of area) than terrestrial carbon sinks in achieving long-term carbon sequestration in sediments, have not yet been considered in the UNFCCC context;
- Support additional research on quantifying the amounts of carbon stored and released by various marine and coastal ecosystems; and
- Further examine the potential for the trading of "Blue Carbon" in a similar way to green carbon (such as rainforests) and how this could be incorporated into emission and climate mitigation protocols.

3. Accelerate progress on mitigation approaches using oceans and coasts

- Develop ocean-based renewable energy (such as offshore wind power, wave energy, tidal power, etc.); and accelerate efforts to implement these approaches through marine spatial planning;
- Accelerate efforts to reduce CO₂ emissions from ships;
- Consider and develop regulatory systems for carbon capture and storage via injection in deep seabed geological formations;
- Discourage other geo-engineering approaches, such as iron fertilization, CO₂ injection in water column.

4. Undertake climate change adaptation in vulnerable coastal areas

- Encourage and implement ecosystem-based adaptation strategies, including marine protected areas, through integrated coastal and ocean management institutions at national, regional, and local levels to build the preparedness, resilience,

and adaptive capacities of coastal communities; and

- Provide sufficient funding to support adaptation for coastal and island communities that are at the frontline of climate change in 183 coastal countries, considering the creation of a special Coastal Adaptation Fund.

5. Work with coastal countries to raise awareness about the implications of climate change impacts on ocean and coastal areas

- Call for recognition in the UNFCCC negotiating text of the important role played by oceans in climate--generating oxygen, absorbing carbon dioxide and regulating climate and temperature;
- Mobilize broad-based support for the oceans and climate agenda within the UNFCCC process and in the Rio+20 process leading up to the UN Conference on Sustainable Development in May 2012 in Brazil; and
- Work towards the creation of an integrated oceans and coasts program within and beyond the UNFCCC by 2013, emphasizing the elements noted above.

Climate change impacts are not only projected into the future but constitute a present and immediate threat. In the Seychelles, for example, desalination plants can no longer meet demand for freshwater because rainfall has reduced dramatically, leading to difficult tradeoffs between water and food provision and presenting challenges in balancing sustainable development with sustaining the tourism industry. The Seychelles, and other small island nations, are in danger of becoming failed states if bold action is not taken.

There is abundant scientific evidence that marine ecosystems are undergoing substantial changes--physically, chemically and biologically--due to the direct and indirect effects of changes in climate and atmospheric composition. These impacts will have local, national, regional and global implications. If left unaddressed, climate change will severely impact marine ecosystems resulting in lasting change which may be difficult, and in some cases impossible, to adapt to both. It is imperative that climate change impacts on oceans and coasts be considered both within and outside the UNFCCC both for our planetary survival and



Box 11. Co-Chairs' Statement Emanating from Durban Oceans Day during the UNFCCC COP 17, December 3, 2011, Durban South Africa



Co-Chairs' Statement emanating from

Oceans Day at Durban "Climate, Oceans, People"
at the 17th Conference of the Parties to the United Nations Framework Convention on Climate Change December 3, 2011, Durban, South Africa

OCEANS DAY AT DURBAN

The Oceans Day in Durban, which was co-organized by the Global Ocean Forum, the Department of Environmental Affairs of the Government of South Africa, the Global Environment Facility (GEF), the UN Development Programme (UNDP), the Intergovernmental Oceanographic Commission of UNESCO (IOC-UNESCO), the University of Delaware, the New Partnership for Africa's Development (NEPAD), the Global Partnership on Climate, Fisheries and Aquaculture (PaCFA), the Agulhas and Somali Current Large Marine Ecosystems (ASCLME) Project, the Benguela Current Commission (BCC), the Guinea Current Large Marine Ecosystem (GCLME) Project, the Canary Current Large Marine Ecosystem (CCLME) Project, the Food and Agriculture Organization of the United Nations (FAO), the World Meteorological Organization (WMO), Plymouth Marine Laboratory, the World Ocean Network, the Organizing Committee for EXPO 2012 Yeosu Korea, the

City of Yeosu, Republic of Korea, and the Korea Ocean Research and Development Institute, and held on the margins of the 17th Conference of the Parties to the UN Framework Convention on Climate Change (UNFCCC COP 17). Over 170 leaders from all sectors of the global oceans community gathered to highlight the direct link between climate change, the health of the oceans, and human well-being, as well as the need for sufficient funding to support bold mitigation and adaptation measures that will minimize climate change impacts on coastal communities and ocean ecosystems and resources.

This was the third Oceans Day to be held in the context of a UNFCCC COP, following Oceans Day at Copenhagen, held at UNFCCC COP 15 (<http://www.oceansday.org/c-index.html>), and Oceans Day at Cancun, held at UNFCCC COP 16 (<http://www.oceansday.org/>).

UNFCCC COP 17 comes at an important time in the lead-up to the UN Conference on Sustainable Development (Rio+20 Conference), providing an important opportunity to outline new targets, goals, and timetables for oceans and coastal issues, including in the context of climate change.

Box 11 continued...



PRIORITY ACTIONS AT UNFCCC COP 17 AND BEYOND

International decision makers must understand the enormous role the ocean plays in sustaining life on Earth. This role is increasingly under threat from human activity, with ocean and coastal regions under growing stress from climate change and ocean acidification. People that depend on the ocean and coasts for food, protection and livelihoods are vulnerable and especially at risk.

There is a clear need for:

- Urgent action to reduce greenhouse gas emissions, especially CO₂, and
- Efforts from international to local scales in adaptation, mitigation, research, capacity building and public outreach.

The global oceans community calls attention to the need to develop an integrated strategy for oceans and coasts within and beyond the UNFCCC.

The following actions are recommended:

1. Enact stringent and immediate reductions in CO₂ emissions

- Adopt stringent reductions in greenhouse gas emissions, within a short timeframe, to avoid disastrous consequences on oceans and coastal communities around the world and to ensure the continuing functioning of the oceans in sustaining life on Earth; and
- Centrally incorporate issues related to oceans and climate into the discussions of the UNFCCC on emissions reductions.

2. Deepen understanding and policy approaches to support "Blue Carbon"

- Natural carbon sinks in coastal areas (e.g., mangroves, seagrass beds, kelp forests, tidal marshes), which have a greater capac-

ity (per unit of area) than terrestrial carbon sinks in achieving long-term carbon sequestration in sediments, have not yet been fully considered in the UNFCCC context;

- Support additional research on quantifying the amounts of carbon stored and released by various marine and coastal ecosystems;
- Reduce the destruction and degradation of marine and coastal ecosystems to preserve their carbon storage capabilities; and
- Include coastal Blue Carbon activities such as the conservation, restoration and sustainable use of coastal ecosystems such as mangroves, tidal salt marshes and sea grasses into relevant UNFCCC mechanisms and activities such as REDD+ and nationally appropriate mitigation actions (NAMAs).

3. Accelerate progress on mitigation approaches using oceans and coasts

- Focus further resources into the development of ocean-based renewable energy (such as offshore wind power, wave energy, tidal power, and aquatic biofuels); and accelerate efforts to implement these approaches through marine spatial planning and enhanced regulatory frameworks;
- Accelerate efforts by the IMO and others to reduce emissions from ships and fishing vessels;
- Consider, and, if appropriate, develop regulatory systems for carbon capture and storage via injection in deep seabed geological formations; and
- Discourage other geo-engineering approaches, such as iron fertilization, CO₂ injection in water column due to unknown and potentially adverse ecological impacts.

4. Undertake climate change adaptation in vulnerable coastal areas

- Encourage and implement ecosystem approaches to adaptation, including marine protected areas, through integrated coastal and ocean management institutions at national, regional, and local levels to build the preparedness, resilience, and adaptive capacities of coastal communities;
- Provide sufficient funding to support adaptation for coastal and island communities that are at the frontline of climate change in 183 coastal countries, considering the creation of a special Coastal Adaptation Fund or directing a significant portion of the current Adaptation Funds to Coastal issues; and
- Develop and support policy measures to address the issues associated with the displacement of coastal populations as a result of climate change.

Box 11 continued...

5. Build the capacity of coastal and island areas to predict, understand, and respond to the risks posed by climate change

- Provide technical assistance to SIDS and developing countries to build institutional capacity to implement adaptation measures, early warning systems, and disaster risk reduction;
- Improve awareness and understanding among policymakers of the importance of oceans and climate issues and the need to take bold policy measures to avoid disastrous impacts on the world's coastal and island communities;
- Establish the scientific capacity in all countries for marine environment and climate variability assessment, monitoring, and prediction; and
- Expand public outreach and education efforts to improve awareness of the risks posed to coastal communities and to catalyze support for mitigation and adaptation responses.

6. Work with coastal countries to raise awareness about the implications of climate change impacts on ocean and coastal areas

- Call for recognition in the UNFCCC negotiating text of the important role played by oceans in climate--generating oxygen, absorbing carbon dioxide, and regulating climate and temperature;
- Mobilize broad-based support for the oceans and climate agenda within the UNFCCC process and in the Rio+20 process leading up to the UN Conference on Sustainable Development in June 2012 in Brazil;
- Work towards the creation of an integrated oceans and climate strategy within and beyond the UNFCCC;
- Support the possible creation of a caucus of coastal countries within the UNFCCC; and
- Request the UNFCCC Secretariat to designate a focal point on oceans.

Furthermore, the African Large Marine Ecosystem (LME) Caucus expresses some specific concerns relating to the significant and impending impacts on SIDS and developing coastal states involved in the African LMEs, which have been captured in Annex 2.

Finally, the network of African fisheries and aquaculture proposed the Durban Declaration on Climate Change and African

Fisheries, presented in Annex 3, which draws attention to the vulnerability of the sector to climate change and further calls on governments to incorporate fisheries and aquaculture in African national and regional adaptation plans, as well as to mainstream climate change in fisheries policies, development and management programmes through highlighting the role of fisheries and aquaculture in supporting food security in Africa, increasing resilience of the aquatic systems, increasing scientific knowledge and pursuing a people-centered and gender-sensitive approach to climate change adaptation in fisheries that incorporates and supports local adaptation strategies and indigenous knowledge.

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On behalf of Oceans Day at Durban Co-Chairs:

Deputy Minister Mrs. Rejoice Mabudafhasi, Ministry of Water and Environmental Affairs, South Africa, Dr. Wendy Watson-Wright, Executive Secretary, Intergovernmental Oceanographic Commission of UNESCO, and Dr. Biliانا Cicin-Sain, President Global Ocean Forum. This Statement is the responsibility of the Co-Chairs of the Oceans Day at Durban.

Annex 1: SEA Pledge Resolution to the Global Ocean Forum

We, the children of the last generation that has the time to reverse climate change trends and sustain our beautiful seas, together with many others around the world who support the SEA Pledge crusade¹, petition the Global Ocean Forum to take action to sustain the seas and their life support processes.

We ask the Global Ocean Forum to call upon the United Nations to declare an International Year of Oceans and Coasts.

We urge the members of the Global Ocean Forum, the World Ocean Network, all of the distinguished participants of Oceans Day at Durban and all governments assembled at COP 17, especially the government of South Africa, to support the SEA pledge with a view to assisting impoverished coastal communities, particularly those in Africa.

¹SEA Pledge is a Sustainable Seas Trust (SST) project. In this project, the SST as well as student forum representatives of the South East African Climate Consortium travelled to coastal towns of South Africa to encourage everyone to join the SEA Pledge crusade, with a focus on the UNFCCC COP 17 festivities on December 3, 2011. All around South Africa, yachts left harbours to exchange pledges at sea, divers exchanged pledges underwater and tried to break world records, surfers exchanged pledges in the waves, kite boarders in the air, and pledges were exchanged by swimmers, sun bathers, anglers, fisheries, shipping lines, schools, desalination plants, marine mining groups and the general public.

Box 11 continued...

Annex 2: Contribution by the African Large Marine Ecosystem (LME) Caucus to the Statement on Oceans Day at Durban

Recognizing the extreme vulnerability of the African countries to the rapid impact of climate change on ecosystem services and consequent community livelihoods, food security, clean water sources, etc. and further recognizing the intimate relationship between oceans and climate and the feedback effects of changes between one and the other.

Drawing attention to the urgent need for cooperative partnerships that can successfully sustain long-term, comprehensive monitoring and observations in the African LMEs related to ecosystem variability and the changes that are happening as a result of climate variability and extremes; these monitoring programmes need to embrace socioeconomic implications of an altering environment in terms of climate change and ecosystem services.

Noting that, for the results and outputs of these monitoring and observation programmes to be of value, there needs to be an evolution of mechanisms that can translate scientific results into reliable predictions and peer-reviewed trends that can steer and drive appropriate adaptive management actions (supported by firm policy commitments) at the regional, national and community level throughout the African countries.

The African LME Caucus calls on all willing and able partners within the scientific, NGO, IGO, global funding agencies and private/commercial sectors and communities to work closely with them to achieve these aims through long-term partnership commitments. Such alliances should aim to sustain ecosystem and climate change observations and monitoring and deliver the outputs as realistic and pragmatic management actions and policy reforms for the greater well-being of the countries and their vulnerable communities within the concepts of the ecosystem approach and the aims of the Millennium Development Goals.

Annex 3: Durban Declaration on Climate Change and African Fisheries

The New Partnership for African Development (NEPAD) Agency and the Global Partnership on Climate, Fisheries and Aquaculture (PaCFA) have developed, on behalf of African fisheries and aquaculture, the Durban Declaration on Climate Change and African Fisheries and Aquaculture in order to highlight the importance of the sector in Africa's response to the challenges posed by climate change.

- Recognizing that fisheries and aquaculture play a crucial role in supporting economic activity and contributing to food and nutrition security in many African states;
- Recognizing that African states are particularly vulnerable to climate change impacts on fisheries due to a high level of sensitivity to climate change and low levels of adaptive capacity;
- Recognizing that, in addition to climate change, African fisheries face numerous threats including overfishing, illegal fishing, pollution and habitat destruction;

We, the stakeholders:

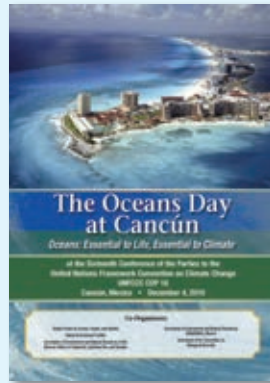
- Recommend that fisheries and aquaculture are incorporated in African national adaptation plans, as well as climate adaptation strategies on the regional and continental level.
- Support the call made by the 2010 Conference of African Ministers of Fisheries and Aquaculture for member states, regional economic bodies (RECs) and regional fisheries bodies (RFBs) to mainstream climate change in disaster risk management, fisheries policies, development and management programmes.
- Urge African states, RECs and RFBs to support fisheries adaptation by accessing funding mechanisms aimed at climate change adaptation, disaster risk reduction, and supporting food security, and to ensure that fisheries holds a stronger position in national policies and development goals.
- Urge African policy makers to highlight the role of fisheries in supporting food and nutrition security in Africa, particularly in the context of climate change threats to food security on the continent.
- Recommend that African states, RECs and RFBs increase the resilience of African fisheries to climate change impacts by addressing overfishing, illegal fishing, pollution and habitat destruction, and by reducing vulnerability and improving livelihood opportunities.
- Recommend increased scientific and economic study of climate change impacts, mitigation and adaptation in African fisheries as well as enhanced knowledge sharing efforts between African states, RECs and RFBs.
- Recommend a people-centered and gender-sensitive approach to climate change adaptation in fisheries that incorporates and supports local adaptation strategies and indigenous knowledge.
- Recommend the need to implement the ecosystem approaches to fisheries and aquaculture as an adaptation strategy that aims to increase the resilience of vulnerable aquatic ecosystems and their dependent communities and that provides shoreline protection, food and nutrition security, maintenance of water quality, income and livelihoods services.



Box 12. Reports on Oceans and Climate Change



Policy Brief on Climate, Oceans, and Security (2010)



Oceans Day in Cancun Summary (2010)



Volume of Policy Briefs on Oceans and Climate Change: Issues and Recommendations for Policymakers and for the Climate Negotiations

(World Ocean Conference, Manado, Indonesia) (2009)



Policy Brief on Climate, Oceans and Security (2008)



Oceans Day in Copenhagen Agenda and Summary (2009)

Policy Brief on Ensuring Survival: Oceans, Climate and Security (2010)



Oceans Day at Durban Summary (2011)