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At the Frontlines of Climate Change—Oceans, Coasts, and Small Island Developing States: The Need for Action Now in the Climate Negotiations

The ongoing climate negotiations culminating in Copenhagen in December 2009 aim to reach agreement to bring down global emissions to safe levels. At stake are thousands of islands and 173 coastal nations, some of the world's most significant biodiversity, and the resilience of marine ecosystems. Climate change-driven sea-level rise, the migration of important marine species including the world's fish stocks, and ocean acidification threaten coastal and inland communities and ocean-based livelihoods. The objective is to launch the world on a course toward a low-carbon future, in time to avoid potentially devastating effects. The round of negotiations culminating in December 2009 in Copenhagen through the UN Framework Convention on Climate Change (UNFCCC) process, expected to result in a successor agreement to the Kyoto Protocol, offers an opportunity to underscore the importance of oceans, coasts, and small island developing States (SIDS) in the new climate regime.

The Oceans in the Climate Negotiations

The world's oceans play a vital role in sustaining life on Earth by generating oxygen, absorbing carbon dioxide from the atmosphere, regulating climate and temperature, and providing resources and services to billions of people across the globe.

Climate change is already impacting the ability of marine and coastal ecosystems to provide food, income, protection, cultural identity, and recreation to coastal residents, especially in vulnerable communities in tropical areas. Recent observations indicate that climate change impacts on the ocean and associated systems far exceed the findings of the 2007 IPCC report, especially in the Arctic.

Coastal communities are experiencing a variety of threats from climate change, including sea-level rise, physical ocean changes, loss of sea ice, ocean acidification, and altered freshwater supply and quality. There is clear evidence that even if there were to be deep reductions in greenhouse gas (GHG) emissions following Copenhagen, countries at risk, and in particular SIDS, already need to adapt to climate change. Similarly, without rapid, deep emissions reductions, while adaptation to sea level rise and changes in ocean circulation may be feasible up to certain limits, there are few if any adaptation options to ocean acidification.

Economic and food security depend on marine and coastal ecosystem health and resilience. Expected disruptions and impacts on vulnerable communities and ecosystems, including increases in weak and fragmented states, economic development impeded, and hundreds of millions of displaced persons are likely to generate serious national security risks across the globe within this generation's lifetime.

Recommendations for the UNFCCC Process

1. Mitigation

A Precautionary Approach to Achieving Reductions in Greenhouse Gas Emissions

The negative consequences of climate change on oceans, coasts, and SIDS may be dire and could be irreversible. Utmost caution needs to be exercised to ensure the continuing functioning of the oceans in sustaining life on Earth by generating oxygen, absorbing acceptable levels of carbon dioxide from the atmosphere, and regulating climate and temperature; the ability of coastal communities to adapt to climate change effects; and the ability of SIDS nations to survive and enhance their wellbeing. This calls for setting targets and processes that will ensure deep reductions in greenhouse gas emissions within

a relatively short time frame. SIDS countries and other coastal nations that are especially vulnerable to climate change should be given preferential consideration.

Properly Regulating Mitigation Efforts Using the Oceans

Mitigation involving the oceans should be carefully scrutinized and viable measures encouraged through appropriate regulatory frameworks.

- **Carbon Capture and Storage.** Carbon capture and storage (CCS) has potential as a mitigation measure, but needs to be carefully studied and regulated to ensure safe and effective practice. CCS via injection into the seabed is a potential mitigation measure to address climate change. Direct injection of CO₂ into the water column should be discouraged due to the potential for irreversible harm to sensitive marine organisms.
- **Ocean Fertilization.** Ocean fertilization could pose serious and unforeseen consequences for the marine environment, and should hence be discouraged.

Encouraging Ocean-Based Renewable Energy

Development of ocean-based renewable energy, such as windpower, currents, tides, and ocean thermal energy conversion, should be developed as a central part of mitigation, provided that appropriate regulatory frameworks are put into place to safeguard the marine environment and its resources. National governments should facilitate the development of ocean-based renewable energy industries, including through the utilization of marine spatial planning, giving priority, as appropriate, to marine renewable energy development, and through consistent and dependable funding for large-scale development and implementation.

*The World Ocean Conference (May 11-15, 2009, Manado, Indonesia) hosted by the Government of Indonesia to focus the world's attention on climate/oceans issues, brought together government representatives from over 70 nations to prepare the Manado Oceans Declaration, adopted on May 14, 2009. At the Coral Triangle Summit on May 15, Presidents and Prime Ministers from the 6 Coral Triangle countries (Indonesia, Philippines, Malaysia, Papua New Guinea, Solomon Islands, and Timor Leste), pledged significant resources to protect the marine resources in this region which represent the world's greatest repository of marine biodiversity. The Global Ocean Policy Day, held on May 13 with preparatory panels held on May 11 and 12 and relying on a set of Policy Briefs on Climate and Oceans prepared by the Global Forum on Oceans, Coasts, and Islands and partners, brought together 500 participants from international organizations, governments, nongovernmental organizations, science groups, and the private sector to discuss the issues associated with climate and oceans and to prepare recommendations for decisionmakers and the climate negotiations. The Global Ocean Policy Day represented the major opportunity for multistakeholder dialogue at the World Ocean Conference. This Statement has been prepared by the Global Ocean Policy Day Co-Chairs. For further information, contact Dr. Biliiana Cicin-Sain, Secretariat, Global Forum on Oceans, Coasts, and Islands. Telephone: +1-302-831-8086, Email: bcs@udel.edu, website: www.globaloceans.org

2. Adaptation

Coastal communities, comprising an estimated 50% of the human population, and especially those in the developing countries and in SIDS nations, will be increasingly impacted by climate change. Adaptation needs to happen immediately, and in the context of development that is already underway or planned.

Ensuring the Resilience of Coastal and Marine Ecosystems

Adaptation strategies should ensure the resilience of marine ecosystems in the face of climate change so that they can continue to provide the full suite of natural resources and services. This is particularly important for sustaining natural resources (e.g., fish stocks, energy, clean water) on which vulnerable communities depend.

One major way to help maintain (and in some cases recover) ecosystem health, productivity and services in the face of climate change, while reducing poverty and safeguarding social and economic development, is the long-term management of resilient networks of marine protected areas, as appropriate, including in areas beyond national jurisdiction.

Implementing Adaptation Measures

Additional adaptation strategies in coastal areas should be guided by the following considerations:

- There are existing and proven processes through which adaptation can be operationalized using ecosystem-based approaches, through integrated coastal and ocean management institutions and processes at local, national, and regional (e.g., Large Marine Ecosystems, Regional Seas) scales.
- Adaptation needs to take many forms, using a variety of measures (soft, hard, and floating). Participants in the multistakeholder discussions emphasized the need to preserve and restore natural ecosystems that can provide cost-effective protection against climate change threats, and to conserve biodiversity and make ecosystems more resilient to climate change so that they can continue to provide the full suite of natural services.
- The protection of coastal populations and infrastructure in the coastal zone should follow a risk-based approach through integrated coastal and ocean management institutions, including flexible adaptation plans, and the expansion of a viable insurance market.

The UNFCCC should further emphasize the importance of marine and coastal areas and their vulnerability to climate change and fully incorporate integrated ecosystem-based adaptation strategies, as outlined above, including in:

- National Adaptation Programs of Action;
- The shared vision for long-term cooperative action being discussed by the Ad Hoc Working Group on Long-term Cooperative Action under the UNFCCC (AWG-LCA);
- The program for Enhanced Action on Adaptation in the post-2012 climate agreement; and
- New measures related to Technology Development and Transfer.

3. Financing

A sufficient level of financing provided by developed countries needs to be mobilized to assist developing countries in:

- Research and development to better understand global ocean changes, and impacts on coastal and ocean ecosystems and the communities dependent on them;
- Implementation of mitigation actions and adaptation strategies;
- Appropriate monitoring and early warning networks;
- Promoting carbon offset and Clean Development Mechanisms, and others, utilizing mangroves, reefs and marine ecosystems; and
- Risk reduction strategies.

Financing the adaptation of the most vulnerable coastal populations in developing countries and SIDS should receive the highest priority. This includes financing of measures related to the management of displaced populations due to climate change.

4. Capacity Development/ Technology Exchange

Capacity development and technology exchange are essential to equip coastal communities to adapt to climate change and to deploy and monitor appropriate mitigation measures using the oceans. The UNFCCC should specifically provide capacity development for adaptation and mitigation in developing nations and SIDS.

5. Civil Society Involvement

The involvement of civil society, including the private sector, in supporting climate mitigation and adaptation measures is essential

for governments to take and abide by actions to curb GHG emissions. The UNFCCC should encourage measures, including financial, to inform, educate, and empower the public to mobilize people and communities toward a low-carbon future.

Way Forward

The current global economic crisis should not divert attention away from dealing with climate change and from maintaining the unique role of the oceans in sustaining life on Earth by generating oxygen, absorbing carbon dioxide from the atmosphere, regulating climate and temperature, and providing a substantial portion of the global population with food, livelihood, energy, and transportation. The crisis instead should be viewed as an opportunity to reshape and transform production and consumption patterns that impact the oceans.

Time is not a luxury many of the world's islands and coastal communities have. Decisive action is urgently needed to protect the central role of oceans in the Earth's life support system and to address the threats faced by coastal communities, and especially in developing nations and SIDS. Aggressive CO₂ mitigation targets must be adopted, and steps taken immediately to reduce traditional stressors. At stake are millions of island and coastal peoples from the Arctic to the tropics.

The economic crisis presents opportunities. Every person on the street—whether in Manado, Buenos Aires, Shanghai, or Cairo—knows now that we are so intertwined with one another in the global economy that we will fall or rise together. For communities along the ocean's coasts, economic survival is tied to environmental survival, and oceans play the key role.

No one can do this alone—not governments, the UN, NGOs, the private sector, or the science sector. All are needed and cross-sectoral coalitions to articulate the centrality of oceans, coasts, and SIDS in the climate negotiations are a vital part of the solution.

Policy Briefs on Climate and Oceans
<http://www.globaloceans.org/planning/pdf/Policy-Briefs-WOC2009.pdf>

