Sustainable Development Goals Policy Briefs Series - 2

The Global Ocean and Sustainable Development

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INTERNATIONAL UNION FOR CONSERVATION OF NATURE

IUCN envisions sustainable development as a path that leads to a just and prosperous world which values and conserves nature by ensuring, through effective and equitable governance, that its resources are used sustainably.

Incorporating the Global Ocean into Sustainable Development

From outer space it is clear that the ocean is one interconnected ecosystem. It unites humanity in many ways: physically through currents and trade, environmentally through its role in moderating climate change, and economically through food, revenue and jobs. Often referred to as the blue heart of the planet, the global ocean[1] is vital for these and other regulating, provisioning, habitat and cultural services that maintain life as we know it on Earth.

However, there is cause for grave concern. On the basis of current evidence, we have reason to believe that increasing CO2 emissions are causing changes that will fundamentally affect oceanic health, productivity and resilience not just locally but at a global scale.[2]

Many of these effects are already apparent. Future impacts can now be predicted with increasing certainty.[3] Impacts include ocean warming, sea level rise, more intense storms, increasing acidity, stratified water and decreased oxygen levels[4] This translates into generally lower fisheries productivity, shifts in the range and accessibility of fish stocks, storm surges and flood damage, salinity intrusions, bio-erosion of tropical corals, declines in shellfisheries and other threats to food security and human well-being.[5] Not all ocean areas will be equally affected, but no area of the ocean will be spared.[6]

Scientific reports also show that these effects are compounded by the existing stressors such as overfishing, nutrient and chemical pollution, and habitat destruction.[7]

The social and economic ramifications of these combined impacts are already significant. In the future they will be massive.[8] Without global scale cooperation and action, the impacts on food security and coastal livelihoods –not to mention the global economy-- may imperil progress that may otherwise be achieved through efforts to eradicate poverty and promote sustainable development.

Determined action is needed now and in the future to decrease the stressors humans can directly control, including through assistance to those most vulnerable, and to proactively promote adaptive and ecosystem-based ocean and coastal development. This is on top of efforts to sharply reduce CO2 and other greenhouse gas emissions and to implement existing ocean commitments.

Member States are discussing topics related to oceans and seas, forests and biodiversity in the context of the Sustainable Development Goals (SDGs) discussions, including at the 8th session of the Open Working Group held on 3-7 February 2013. Member States thus have the opportunity to ensure that the SDGs and the post-2015 development agenda thoroughly reflect the need to rapidly enhance cooperation and action at all levels to pursue a more sustainable path toward ocean development.

The first part of this IUCN policy brief explores why the SDGs and the stakeholder processes related to the post 2015 development agenda should incorporate and integrate oceans as a key contributor to poverty eradication, human well-being and sustainable development. The second part provides some key elements and options for tackling this complex challenge.

Why Care About the Global Ocean?

The importance of ocean services for humans

The global ocean is the lifeblood of Earth and humankind. Spanning more than 70% of our planet, the global ocean connects continents, islands and peoples and supports billions of people with food, nutrition and jobs.[9] It provides over 90% of the Earth's habitat for life, holds 97% of the planet's water, and generates 50% of the oxygen we breathe. It also hosts a major part of our -- as yet largely undiscovered --biodiversity.[10]

According to recent estimates, the manifold employment opportunities, as well as ecosystem services, including cultural services, provided by the ocean, creates the conditions for a global oceans-based economy estimated at between USD 3-6 trillion/year.[11] This is equivalent to approximately 5-10% of the entire global gross domestic product.

The global ocean contributes to poverty eradication by creating jobs in many traditional maritime industries, such as fisheries and marine aquaculture, shipping and shipbuilding, ports, tourism, oil, gas, mining, and maritime transportation industries.[12] According to the latest figures, over three billion people depend on marine and coastal resources for their livelihoods.[13] Fisheries alone support 260 million full-time and part time jobs; nearly half of the 50 million people directly engaged in fishing are small scale (subsistence or artisanal).[14] Seafood currently provides 15% of the animal protein intake for the world's population, and in some small island developing states, over 70%.

The global ocean also holds considerable potential as an engine for sustainable economic growth and jobs in emerging sectors such as "blue" biotechnology for medicines, foods, fuel, nutritional supplements and industrial solvents as well as renewable offshore energy to meet growing energy demands.[15] Transitioning to more sustainable shipping, fishing and marine aquaculture operations can further increase economic returns while maintaining essential ecosystem functions and services.

Challenges to Sustainable Ocean Development

Unfortunately, decades of unwise management have significantly degraded many coastal and marine environments. Harmful activities include land-based development projects that directly or indirectly alter marine habitats; unsustainable extraction of marine resources (including over / illegal fishing, and destructive fishing practices); discharges of excessive nutrients, chemicals and debris; and the introduction of alien species from ships and aquaculture.[16]

Increasing emissions of CO2 will exacerbate and accelerate these impacts, posing significant threats for many coastal populations and economic sectors, including fisheries, transportation, tourism and recreation, construction, and energy development.[17] For example, range shifts in fish and shellfish populations attributed to warming waters (e.g. shifts to colder or deeper waters) have altered the quantity and distribution of capture fisheries taken across the globe. As warmer waters hold less oxygen, declining oxygen levels will further stress fish and other marine species. Combined with more acidic waters, this can decrease their size, reproductive rates and chances of survival.[18] Small scale commercial and recreational fisheries are especially vulnerable as it is difficult for small boats to venture far from harbors and traditional fishing grounds or to shift to new gears or markets.[19] Offshore fisheries will also be impacted.

Aquaculture, which provides some 46% of seafood consumed today, is already being affect-

ed by increased ocean acidification, low oxygen events and warming waters.[20] At the same time sea-level rise and potential increases in storm frequency and severity threaten coastal communities, who are even more vulnerable when habitats such as coral reefs, sea grasses and wetlands have been destroyed or degraded by unwisely positioned aquaculture facilities or other coastal developments.[21] Coastal mega-cities, ports and energy installations are also at risk from rising seas and eroding shores.

The failure to stem ocean degradation will further exacerbate poverty and could impoverish many more. According to Mora at al., 470 to 870 million of the planet's poorest people living in low income countries are in areas where ocean goods and services could be compromised by substantial changes in ocean biogeochemistry.[22] Impacts will not be limited to those in the poorest countries. Depending on the pace of CO2 reductions, Mora et al. project that from 1.4 billion people (under a concerted rapid CO2 reduction scenario) to 2.02 billion people (under a "business as usual" scenario) will be living in coastal areas whose EEZs will experience substantial ocean change. Populated/urbanized coasts, river deltas, Arctic coasts, low-lying coasts and small islands are at most direct risk.[23]

But even if CO2 emissions are dramatically reduced now, the impacts of ocean warming and acidification will be felt for centuries.[24] Thus, in addition to rapidly reducing the emission of CO2, scientists are calling for urgent action at all levels to reduce other existing stressors such as overfishing, pollution and eutrophication, to establish systems of protected areas and to increase cooperation and coordination of marine scientific research, mitigation and adaptation measures.[25]

Society is already beginning to respond to these dramatic challenges by altering individual behaviors, innovating technologically and adjusting policies and management. Governments, non-governmental organizations, development banks, and private sector innovators are actively seeking adaptation strategies that address multiple, interacting effects of climate change and other stressors on marine systems and communities.[26]

Key elements of an ecosystem based and precautionary approach recommended by scientists for confronting challenges of a changing ocean, including local impacts of ocean acidification, include:

- Developing sustainable fisheries management practices such as regulating catches to reduce overfishing and creating long-term bycatch reduction plans to sustain ecosystem resilience.

- Adopting sustainable management of habitats, increased coastal protection, reduced sediment loading and application of marine spatial planning.

- Establishing and maintaining Marine Protected Areas (MPAs) that help manage endangered and highly vulnerable ecosystems to enhance their resilience against multiple environmental stressors including acidification.

- Monitoring and regulating localized sources of acidification from runoff and pollutants such as fertilizers.

- Reducing sulphur dioxide and nitrous oxide emissions from coal-fired power plants and ship exhausts that have significant acidifying effects locally.[27]

Many of these activities will need to be implemented locally but would benefit from global goals, targets and incentives to address the underlying drivers that impact on ocean health, such as consumption and production patterns, energy demands, mineral requirements and global transport needs. As the SDGs and post 2015 development agenda will drive the global agenda towards a future we all want, this requires integration of ocean health into economic activities and planning to foster sustainable development that is blue as well as green.

Addressing the Global Ocean Through the SDGs

The value of incorporating oceans into the SDGs

The SDGs with their targets and indicators offer an important opportunity to both galvanize and monitor progress towards addressing multiple stressors on ocean ecosystems as part of the renewed push for poverty eradication and sustainable development. As noted by the Leadership Council of the Sustainable Development Solutions Network, well-crafted SDGs can help inspire public and private action, promote integrated thinking, and foster accountability. They can provide important support to global treaties and conventions, by encapsulating common norms, principles and objectives to foster collaboration across countries.[28]

The United Nations Convention on the Law of the Sea sets out the legal framework for all activities in the oceans and seas. It plays a preeminent role as the basis for national, regional and global action and cooperation in the marine sector.[29] However, despite increased awareness at Rio+20 and elsewhere of the economic and ecological importance of the ocean and the severity of human impacts, there are as yet neither effective international mechanisms nor adequate funding to confront these challenges throughout the global ocean. While some progress may be made with respect to climate change impacts on coastal communities, mechanisms will still be needed to deal specifically with ocean acidification, including support to build ecosystem and community resilience and respond to loss and damage. Global support is also needed to drive a coherent response from local communities, governments and institutions to the multiple threats and challenges.

A variety of approaches are possible for addressing the global ocean in the SDGs. These include:

• A dedicated stand-alone SDG on Oceans and Seas. Existing proposals stress that the ocean requires a focused attention due to its complex nature and significant contribution to the three dimensions of sustainable development.[30]

• Addressing ocean-related issues in a cross cutting manner under different SDGs in the form of targets. Existing proposals include oceans and seas in SDGs that relate to a healthy and resilient planet and productive ecosystems, and SDGs that relate to human well-being such as food security and good nutrition.[31] Other thematic areas including poverty reduction, health, energy, water, jobs/livelihoods and equity and governance are also relevant.

• A third approach could integrate ocean targets and indicators into other relevant goals as well as dedicate a separate goal on Oceans and Seas.[32]

Building on existing commitments

Regardless of the form taken, what is important is that the SDGs fully support cooperation to tackle the challenges to sustainable ocean development. There is great benefit in building on commitments already negotiated and adopted by many parties while also incorporating new concerns voiced by leading scientists. The crucial aspect is to recognize and implement the leading ideas stated in existing works in a context that drives policy coherence and progress globally and equitably.

Critical elements for the SDGs to include with respect to oceans can be found in many sources including the Millennium Development Goals, Chapter 17 of Agenda 21 and the Johannesburg Plan of Action. The ocean commitments of world leaders at Rio+20 set out the most recent priorities for sustainable oceans development.[33] This

includes, first and foremost, the commitment "to protect, and restore, the health, productivity and resilience of oceans and marine ecosystems, and to maintain their biodiversity, enabling their conservation and sustainable use for present and future generations."[34] Paragraphs 158-177 of the outcome document set out further global priorities, signaling an increased global will to tackle what sometimes appear to be insurmountable challenges. These can be divided into four categories:

1. Ensure conservation and sustainable use of the oceans and seas and of their resources;
2. Reduce the incidence and impacts of marine pollution;
3. Prevent the introduction of alien invasive species and manage their adverse environmental impacts; and
4. Address ocean acidification and the impacts of climate change, including by enhancing the resilience of marine ecosystems and coastal communities.

As highlighted in the Issues Brief by the Technical Support Team (TST) of UN Agencies on Oceans and Seas, other important sources include the annual Resolutions of the General Assembly on oceans and law of the sea and on sustainable fisheries, as well as the decisions and resolutions adopted by countries at relevant international organizations and fora. For example the Strategic Plan for Biodiversity for 2011-2020 adopted by the Convention of the Parties to the Convention on Biological Diversity, contains the oceans-related Aichi Targets 6 (ecologically sustainable fishing), 10 (reduction of stressors on coral reefs and other ecosystems vulnerable to ocean acidification), and 11 (coastal and marine protected area coverage and effective management).[35]

The TST brief also highlights the importance of the following enabling conditions:

• Improving implementation, compliance and enforcement of existing agreements

• Enhancing capacity- building programmes tailored to different regions

• Improving governance, political will and the allocation of sufficient resources

• Improving knowledge about the state of the ocean and marine ecological processes; and

• Increasing cooperation and coordination across sectors and amongst all stakeholders at local, national, regional and global levels.[36]

A recent report by marine scientists at Kiel University in Germany provides a detailed analysis of what an SDG specifically for the ocean might look like and what targets and indicators might measure.[37] Visbek et al. propose that a SDG for Oceans and Coasts should seek to:

• Ensure a healthy and productive marine environment with all basic supporting and regulating functions and services, viewing the oceans and the subsequent provisioning of ocean services as a vital part of the Earth system.

• Develop suitable mitigation and adaptation strategies for climate and global change.

• Provide equitable access to ocean resources, and ensure that harvesting and extraction of living and non-living resources do not impair basic ecosystem functions.

• Encourage the development of sustainable and resilient coastal communities.

• Harmonize national and regional maritime policies.

• Encourage cooperation in coastal and global marine spatial planning.

The Pacific Small Island Developing States and others are calling for a SDG to Achieve Healthy, Productive and Resilient Oceans and Seas, with two primary targets: 1) achieve a healthy marine environment and 2) achieve healthy fish stocks.

One commonality amongst many of the existing SDG proposals is a renewed understanding of the importance of good governance, public participation and transparency. As highlighted in the report of the Leadership Council of the Sustainable Development Solutions Network,[38] poor governance and insecurity can all too easily undermine progress on economic, social and environmental objectives. The growing diffusion and complexity of ocean governance impels a change in direction. That change in direction is crucial to sustain the global ocean across its many boundaries of sovereignty and ecology.

While the challenges are great, a recent article in Foreign Policy by Alan Sielan on the problems confronting our oceans provides a useful reminder on how the community of States has rallied before:

"These challenges may seem daunting, especially for countries focused on basic survival. But governments, international institutions, nongovernmental organizations, scholars, and businesses have the necessary experience and capacity to find answers to the oceans' problems. And they have succeeded in the past, through innovative local initiatives on every continent, impressive scientific advances, tough environmental regulation and enforcement, and important international measures, such as the global ban on the dumping of nuclear waste in the oceans."[39]

The health, resilience and productivity of the global ocean are a matter of common concern and shared responsibility. What happens in one part can affect the health of the whole and the well-being of many. The SDGs and the post 2015 development agenda can help chart a course towards renewal and cooperation, or, by ignoring the oceans, towards further impoverishment, degradation and loss. The choice is ours. It is hard to imagine that any responsible government or community would choose the latter given what is at stake.

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[1] The terms “global ocean” is used here to denote the interconnectedness of the ocean system, encompassing marine, coastal and brackish water systems, from the open ocean surface to the deepest depths, from the open ocean to coastal waters to the inland seas. The global ocean includes the legal zones recognized under the UN Convention on the Law of the Sea as “internal waters”, “archipelagic waters”, “territorial sea”, “exclusive economic zone”, “high seas” and seabed “Area” beyond national jurisdiction.

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[31] See e.g., Leadership Council of the Sustainable Development Solutions Network (SDSN) (2013): An Action Agenda for Sustainable Development

[32] See IUCN Policy Briefs Series – 1, 2013. " Building the Sustainable Development Goals on the Aichi Biodiversity Targets" IUCN

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