ISSUE BRIEF
United Nations Development Programme
ENVIRONMENT AND ENERGY
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TOWARD OCEAN RECOVERY

Stress, Sustainability, and Development of Large Marine Ecosystems During Climate Change

Large Marine Ecosystems (LMEs) annually produce 80% of the world's marine fish catch. These coastal ocean areas are overfished, polluted, and subject to nutrient over enrichment, acidification, accelerated warming from climate change, loss of biodiversity and key habitat areas—including sea grasses, mangroves and coral reefs. These stressors are impacting the sustainable development of an estimated $12 trillion in goods and services contributed annually by LMEs to the global economy. Without concerted action, the damage could become irreversible, threatening the livelihoods of millions of people.

In June 2012, world political leaders at the United Nations Conference on the Environment and Development in Rio de Janiero (Rio+20) committed 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 . . ."

The Global Environment Facility, World Bank, and United Nations partnered with the international coastal ocean community in providing over $3 billion dollars in financial, scientific, and technical assistance to countries in Asia, Africa, Latin America, and Eastern Europe. LME projects in 110 developing countries are restoring the health, food security, and economic vitality for millions of people around the globe dependent on LME goods and services.

The successful recovery and growth of LME goods and services will require more attention to multi-sectorial agreements for the use of LME space. Competing uses include hydrokinetic energy, coastal transportation, fisheries, tourism, mining, and gas and oil production.

UNDP RESPONSE TO OCEAN THREATS

Through its Ocean Governance Programme, UNDP is working in cooperation with many other UN agencies, the Global Environment Facility, international financial institutions, regional fisheries organizations and others to improve oceans management and sustain livelihoods at the local, national, regional and global scales through effective oceans governance. Through its Large Marine Ecosystems Programme, UNDP-GEF is supporting ecosystem-based approaches to fisheries in over ten of the world's Large Marine Ecosystems, where 85% of the world's fish catch derives. UNDP's PEMSEA programme has pioneered best practices in integrated coastal management in12 East Asian countries and the rapid upscaling of these efforts. UNDP is partnering with the International Maritime Organization to reduce the risk of transfer of invasive species through ship ballast water through governance reform and technology development and transfer.

Key Topics:

- Nutrient pollution/hypoxia, overfishing, invasive species, surface warming and ocean acidification are worsening at an accelerating pace, underscoring the need for urgent action;
- Sound science and socioeconomics, supported by robust ocean data and information systems, provide vital inputs to maintaining the trillions of dollars in goods and services provided by LMEs annually;
- A suite of strategic planning tools and methodologies has proven effective at creating the necessary enabling policy environment to catalyse billions of dollars in financial flows for ocean restoration and protection;
- The level of public financial resources required to scale up proven ocean management planning and policy tools and methodologies is within reach of existing and emerging financial mechanisms such as the GEF;
- Sustainable management of the world's LMEs could become a successful legacy of today's decision-makers.

BOSTON LARGE MARINE ECOSYSTEM CONFERENCE

To meet the challenge of Rio, leaders directing the world's top financial, scientific, and technical institutions engaged in sustainable development of the oceans from Copenhagen, New York, Paris, and Washington D.C. met in Boston in February 2013 to discuss the recovery and sustainability of LMEs during climate change.

Keynote Speakers

Speakers and panelists sharing experiences in coastal and marine spatial planning from generic and case study perspective, include:

- **Dr. Jane Lubchenco**, Under Secretary of Commerce for Oceans and Atmosphere and NOAA Administrator, addresses solutions to three critically important ocean health tipping points—climate warming, oxygen depletion events, and acidification—and how these link to the Obama administration's new oceans policy.

- **Dr. Naoko Ishii**, CEO and Chairperson of the GEF, describes her strategy for the GEF to promote sustainable development of LMEs. Dr. Ishii heads the world's largest public institution financing projects to benefit the global environment. The GEF has cumulatively provided more than US$1 billion in grant assistance, leveraging 3 to 4 times as much in co-financing, for actions to sustain fisheries, reduce pollution and hypoxia, and prevent marine invasive species.

- From a European perspective, **Dr. Anne Christine Brusendorff**, ICES General Secretary, shares the Baltic Sea LME experience, in which a GEF grant investment of US$12 million to introduce the modular assessment and management approach to Baltic Sea countries helped leverage US$100 million in EU financing for improving Baltic Sea health.

- **Dr. Andrew Hudson**, Head, Water & Ocean Governance Programme of UNDP's Environment and Energy Group, reports on a recent UNDP/GEF publication, Catalysing Ocean Finance, drawing from strategies and results in the UNDP/GEF International Waters portfolio over the last 20 years, demonstrates how a modest investment of public finance can scale up proven ocean planning and policy tools, catalyse sizeable financial flows, transform ocean markets, and reverse the global decline in ocean health.

- **Dr. Wendy Watson-Wright**, IOC-UNESCO, describes IOC's long-term commitment to advancing the application of marine science, data, and information to promote ecosystem-based management of LMEs, and its efforts to help nations monitor and adapt to the impacts of climate change on oceans.

LINKS to Ocean Conference Video:

Dr. Wendy Watson-Wright, Executive Secretary of the Intergovernmental Oceanographic Commission and Assistant Director General of UNESCO on 'LME Assessment and Management Strategies for Coastal Oceans'

Dr. Andrew Hudson, UNDP Water and Oceans Governance Programme on the 'Transforming Markets and Catalysing Finance to Restore and Protect the World's LMEs'

Anne Christine Brusendorff, J.D., General Secretary of the International Council for the Exploration of the Sea on 'Accelerated Warming and Sustainability of the Baltic Sea Large Marine Ecosystem'

Dr. Naoko Ishii, Chief Executive Officer of the Global Environment Facility on 'GEF Support Toward Sustainable Development of Large Marine Ecosystems'

Dr. Jane Lubchenco, Under Secretary of Commerce for Oceans and Atmosphere and the NOAA Administrator on 'Large Marine Ecosystems at the Leading Edge of Global Tipping Points'

Session II and Roundtable - Role of Marine Spatial Planning

Recent Ocean Documents:

- Catalysing Ocean Finance, Volume I: Transforming Markets to Restore and Protect the Global Ocean. UNDP/ GEF (2012)
- Catalysing Ocean Finance Volume II: Methodologies and Case Studies. UNDP/ GEF (2012)
- Frontline Observations on Climate Change and Sustainability of Large Marine Ecosystems. Editors K. Sherman and G. McGovern. UNDP/ GEF (2012)

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