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**A SUMMARY FOR DECISION-MAKERS**

a  
**blueprint**

FOR **ocean** AND **coastal** SUSTAINABILITY

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This Summary and the full Report can be downloaded from the following web link:

<http://www.unesco.org/new/en/rio20>



# blueprint

FOR **ocean** AND **coastal** SUSTAINABILITY

**A SUMMARY FOR DECISION-MAKERS**

## About the UN AGENCIES and PROGRAMMES that contributed to this report



### **Intergovernmental Oceanographic Commission of UNESCO (IOC/UNESCO)**

UNESCO's Intergovernmental Oceanographic Commission (IOC), established in 1960, promotes international cooperation and coordinates programmes in marine research, services, observation systems, hazard mitigation, and capacity development in order to understand and effectively manage the resources of the ocean and coastal areas. By applying this knowledge, the Commission aims to improve the governance, management, institutional capacity, and decision-making processes of its 142 Member States with respect to marine resources and climate variability and to foster sustainable development of the marine environment, in particular in developing countries. The Commission responds, as a competent international organisation, to the requirements deriving from the United Nations Convention on the Law of the Sea (UNCLOS), the United Nations Conference on Environment and Development (UNCED), and other international instruments relevant to marine scientific research, related services and capacity-building



### **International Maritime Organisation (IMO)**

IMO is the United Nations (UN) specialised agency with responsibility for the safety and security of shipping and the prevention of marine pollution by ships. International shipping is the carrier of world trade, transporting around 90% of global commerce. Being an international industry shipping needs a global regulatory framework in which to operate. IMO, with its 170 Member States, provides this framework and has adopted 52 treaties regulating virtually every technical aspect of ship design and operation, the most important of which – concerning the safety of life at sea and the protection of the environment – today apply on 99% of the world's merchant fleet. IMO adopts international shipping regulations but it is the responsibility of Governments to implement those regulations. IMO has developed an Integrated Technical Co-operation Programme (ITCP) designed to assist Governments which lack the technical knowledge and resources needed to operate a shipping industry safely and efficiently



### **Food and Agriculture Organization (FAO) of the United Nations**

Achieving food security for all – to make sure people have regular access to enough high-quality food to lead active, healthy lives – is at the core of all FAO activities, including for fisheries and aquaculture. FAO's mandate is to raise levels of nutrition, improve agricultural productivity, better the lives of rural populations and contribute to the growth of the world economy. Fisheries and aquaculture have the capacity – if supported and developed responsibly – to contribute significantly to improving the wellbeing of poor and disadvantaged communities. The vision of FAO for these sectors is a world in which responsible and sustainable use of fisheries and aquaculture resources makes an appreciable contribution to human wellbeing, food security and poverty alleviation.

The FAO Fisheries and Aquaculture Department, in particular, aims to strengthen global governance and the managerial and technical capacities of members and to lead consensus-building towards improved conservation and utilisation of aquatic resources.



### **United Nations Development Programme (UNDP)**

UNDP is the United Nations' global development network, an organisation advocating for change and connecting countries to knowledge, experience and resources to help people build a better life. UNDP is on the ground in 177 countries, working with them on their own solutions to global and national development challenges. As they develop local capacity, they draw on the people of UNDP and its wide range of partners. Through its Ocean and Coastal Governance Programme, UNDP is working in cooperation with many other UN agencies, the Global Environment Facility, international financial institutions, regional fisheries organisations 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 marine resource management in over ten of the world's Large Marine Ecosystems.



# summary

**This document is a SUMMARY of “A Blueprint for Ocean and Coastal Sustainability”, an interagency paper that provides context for the Rio+20 discussions, through analysis of current challenges in ocean and coastal management around the world.**

Our ocean covers over 70% of the globe. Its health and the wellbeing of humanity and the living environment that sustains us all are inextricably linked. Yet neglect, ocean acidification, climate change, polluting activities and over exploitation of marine resources have made it one of the earth’s most threatened ecosystems. This has put in peril not only the life forms that inhabit the planet, but the aspirations of humankind for prosperity and economic growth within the context of sustainable development.

The good news is that considerable, albeit incomplete, progress has been made in reaching some of the goals set in Rio twenty years ago, and in the decisions made via a number of modalities, including the Johannesburg Plan of Implementation (JPOI) and by the Commission on Sustainable Development, to name but two. The Intergovernmental Oceanographic Commission (IOC) of UNESCO, the United Nations Development Programme (UNDP), the Food and Agriculture Organization (FAO), and the International Maritime Organization (IMO) are among the agencies responsible for substantive progress made to date.

Almost two thirds of the Global Ocean Observing System is now in place. The Large Marine Ecosystem Program has been actively engaged in meeting marine-related targets to promote ecosystem-based integrated ocean and coastal management. A mechanism for the global reporting and



assessment of the oceans has been set in motion. Major agreements have been reached to protect threatened fish stocks and new Regional Fisheries Management Organizations have been set up. Substantial investment has been made in capacity building for Small Island Developing States. Guidelines on the ecosystem approach to fisheries and aquaculture have been developed and are being incrementally implemented in several areas. The IMO now has in place no less than 21 international treaties dealing with the protection of the environment from international shipping activity, including the first ever, global and mandatory greenhouse gas reduction regime for an entire economic sector.

The bad news is that despite international efforts and initiatives, to date only a little over 1% of the ocean is protected. The implementation of many international agreements in place has been slow.

The commitment to maintain or restore depleted fish stocks to levels that can produce their maximum sustainable yield has not been met - notwithstanding progress with some stocks. Deterrence of Illegal, Unreported, and Unregulated Fishing remains marginal at best. Marine pollution from land-based sources continues to be a serious problem. One of the primary vectors for the introduction of aquatic invasive species - hull fouling - has yet to be resolved. Commitments made regarding biodiversity and Marine Protected Areas have fallen short of expectations.

In addition, a number of emerging issues since the JPOI threaten progress toward sustainable development of ocean and coastal areas. They include increased nutrient over-enrichment contributing to habitat degradation, lack of ocean-based renewable energy use, continuing threats to coral reefs, the existence of vast areas



of marine debris particularly in the form of plastics, and a lack of systematic data exchange across nations.

Technological advances and the impact of climate change, as well as increased intensification of human development have all reduced ocean productivity. This has led to significantly increased risks to food security from fisheries, particularly in the warmer latitudes around the globe.

In short the world is not keeping up with its commitments – with the result that a large percentage of global fish stocks are under pressure. Aquatic invasive species are expanding. Hypoxic (dead) zones are increasing. Coral reefs are disappearing. Coastal habitats have been lost or are being degraded and there is an overall loss of marine biodiversity.

However, the recovery power of the ocean is still in place and it is not too late to act. There are emerging opportunities for the global community to protect our ocean and at the same time enhance its potential contribution to sustainable development. Those opportunities include increased recognition of the concept of a Blue-Green Economy and its relationship to the environmental, social, and economic pillars of sustainability. Renewable blue energy, marine genetic bio-resources, and ecosystem services, are but a few of the options to consider in meeting the twin goals of marine conservation and economic stability of of all nations, not just those with coasts.

It is clear that the ocean choices made by world governments and the agencies they





support will be critical to the welfare of future generations, in supporting poverty reduction, economic growth and environmental improvement. Ocean governance gaps, institutional failures and problems in the implementation of global and regional conservation measures, as well as the need to harness the expertise of scientific institutions are likely to feature prominently on the Rio+20 agenda.

There is therefore a strong case for the UN system to provide leadership through the fostering of enhanced dialogue, coordination and cooperative action among UN agencies, funds and programmes, possibly leading to a proposal on a reformed mechanism for ocean coordination to be put forward at Rio.

Implementation, political and institutional willingness, capacity and desire to change at all levels of both government, industry and civil society are now needed.

The changes that will be required to transition to a Blue-Green Economy will be a mix of physical, behavioural and institutional factors. The matrix, objectives, and proposals below summarise the nature of the required changes. Each of the proposals presented in detail in the sections that follow are compared against the objectives in the matrix. The purpose in this approach is to show how broadly relevant each proposal is across the spectrum, which in turn serves to re-emphasise the interconnected nature of the future transition.

## MATRIX COMPARING WHICH OBJECTIVES ARE RELEVANT TO EACH PROPOSAL

### OBJECTIVE 1

Actions to reduce stressors & restore the structure and function of marine ecosystems

**1.a** Implement Urgent Actions to Mitigate and Adapt to Ocean Acidification



**1.b** Develop and Execute a Global Program aimed at Greater Protection and Restoration of Vital Ocean and Coastal Habitats, and develop a Global Blue Carbon Market as a means of Creating Direct Economic Gain through Habitat Protection



**1.c** Strengthen the Legal Framework to Effectively Address Aquatic Invasive Species



**2.a** Build Green Societies in Small Island Developing States: Addressing Key Vulnerabilities

**2.b** Increase Efforts for Responsible Fisheries and Aquaculture in a Green Economy



**2.c** Green the Nutrient Economy and Reduce Ocean Hypoxia through Policy, Regulatory and Economic Instruments that Promote Nutrient Efficiency and Recovery



**3.a** Create and Implement an Institutional and Legal Framework to Protect Habitats and Biodiversity Beyond National Jurisdiction



**3.b** Reform Regional Ocean Management Organisations

**3.c** Enhance Coordination, Coherence and Effectiveness of the UN System on Oceans Issues























**4.a** Increase Institutional and Human Capacity for Sustained Observations, Monitoring, Marine Research, and Progress evaluation of International commitments



Primary objective



Secondary objective

<b>OBJECTIVE 2</b> Actions that support the Blue-Green Economy	<b>OBJECTIVE 3</b> Actions leading to Policy, Legal and Institutional Reforms for effective Ocean Governance	<b>OBJECTIVE 4</b> Action supporting marine research, monitoring and evaluation, technology and capacity transfer
		
		
		
		
		
		
		
		
		
		

## The Following Ten Proposals Fall Under Four Main Objectives

# OBJECTIVE 1

## ACTIONS TO REDUCE STRESSORS AND RESTORE THE STRUCTURE AND FUNCTION OF MARINE ECOSYSTEMS



### **PROPOSAL 1.A.** **Implement Urgent** **Actions to** **Mitigate and** **Adapt to Ocean** **Acidification**

The ocean absorbs more than 26% of the carbon dioxide emitted to the atmosphere from human activities. The result is increased acidity (lowered pH) of the ocean. This can reduce the availability of calcium for plankton and shelled species, threatening their survival. Since many of these organisms serve as the base of much of the marine food chain the potential impact of acidification on entire ecosystems can be dramatic.

This proposal incorporates the launching of a global inter-disciplinary program on ocean acidification risk assessment. The goal is to provide global, regional, and national forecasts and to identify ‘point of no return’ tipping points where acidification could lead to marine ecosystem collapse. In addition, the United Nations Framework Convention on Climate Change negotiations should include atmospheric carbon dioxide impacts on ocean chemistry and ecosystems in their deliberations.

These efforts will increase the likelihood of stakeholder agreement on the implementation of the *Monaco Declaration on Ocean Acidification*, consequently reducing or reversing the impacts of acidification.

# OBJECTIVE 1

## **PROPOSAL 1.B** **Develop and** **Execute a Global** **Program aimed at** **Greater Protection** **and Restoration** **of Vital Ocean and** **Coastal Habitats,** **and develop a** **Global Blue Carbon** **Market as a means** **of Creating Direct** **Economic Gain** **through Habitat** **Protection**

Ecosystem services provided by the marine environment are critical for food security, poverty eradication and economic stability in coastal nations. Restoration of habitat and biodiversity can occur only once protection measures are in place and change of use patterns are established. This will require investment from the international community, buy-in from industry, and commitment from coastal member states.

To that end this proposal includes the setting of coastal habitat protection and restoration targets with timelines. This should be supplemented with encouragement of Blue-Green Economy initiatives using such tools as economic valuation of key habitats, and incentives to promote more sustainable use through eco-tourism and small-scale fisheries. Also proposed is the development of a global strategy on blue carbon with agreed standards on monitoring and certification, as well as encouraging global acceptance of marine habitats as a new form of tradeable carbon market, via a blue carbon fund.

The expected result will be an increase in the amount and type of protected coastal habitats around the world. Economic gain through a blue carbon market will demonstrate the value of a Blue-Green approach to sustainability.

## **PROPOSAL 1.C** **Strengthen The** **Legal Framework To** **Effectively Address** **Aquatic Invasive** **Species**

80% of the world's 232 marine ecoregions have reported the presence of aquatic invasive species (AIS) - mediated principally through ballast water and hull fouling from international shipping. Other vectors include poorly managed aquaculture and often, recreational fisheries. Total costs associated with AIS are about USD 100 billion per year. Most alarmingly, they are virtually impossible to reverse once a species has established itself.

The purpose of this proposal is to accelerate the global efforts to bring the relevant IMO Convention on ballast water into force. Continued efforts to implement voluntary guidelines on hull fouling and IMO advice on a more effective instrument on that subject are also required. Increased scientific knowledge is also paramount in the fight to control aquatic invasive species.

Expected results of this proposal include the decline (or halt) of the introduction of new invasive species and reduction in the adverse impacts from existing species - accomplished through technology innovation, coordinated global monitoring and enforcement and effective international, regional and national responses, including capacity building.

# OBJECTIVE 2

## ACTIONS THAT SUPPORT THE BLUE-GREEN ECONOMY



**PROPOSAL 2.A.**  
**Build Green Societies in Small Island Developing States: Addressing Key Vulnerabilities**

Small Island Developing States (SIDS) remain particularly at risk due to their susceptibility to climate change, their geographic isolation and small size.

Understandably they feel especially vulnerable to threats to their marine environment and economic sustainability and are keenly aware of the need for support with human, technical, and financial resources. A number of approaches are required to manage their ocean, coastal and fishery concerns. To that end SIDS expect Rio+20 to provide support for sustainable ocean development and protection of resources. Measures could include actions to reduce fishing overcapacity, to establish Marine Protected Areas, and improve wastewater and solid waste management.

This proposal will develop an understanding of how unique SIDS approaches to ecosystem management can contribute to green societies and sustainable development. In so doing plans for capacity building, technology transfer, interregional exchanges will be developed. Other objectives include improved access to global databases, the establishment of a national data management system, and promotion of cost-effective technologies, and sustainable financing through public-private partnerships

The result will be a clear plan to address the environmental and economic stresses on SIDS. This will include supporting the attainment of sustainable development targets by contributing to poverty reduction, climate change adaptation and environmental management.

## OBJECTIVE 2

### **PROPOSAL 2.B.** **Increase Efforts for Responsible Fisheries and Aquaculture in a Blue-Green Economy**

In 2009, over 80% of world fish production was used for human consumption, providing 4.2 billion people with more than 15% of their average per capita intake of animal protein. Fishing and aquaculture provided full or part time jobs to about 180 million people, supporting the livelihood of over half a billion people!

This proposal aims to increase awareness at all levels of the critical need to ensure responsible fisheries management and aquaculture development through rapid progress in implementation of the FAO Code of Conduct for Responsible Fisheries and its related instruments. In so doing connection with other sectors and decision-makers is critical to ensure that related issues are included on the global agenda, highlighting the principles and benefits of long-term sustainable use and management.

Expected results include increased efforts and resources from institutions at all levels towards achieving already agreed on goals related to fisheries, aquaculture, and sustainable use of marine resources and ecosystems. They include those in the Millennium Development Goals, and the World Summit on Sustainable Development Plan of Implementation, among others.

### **PROPOSAL 2.C.** **Green the Nutrient Economy and Reduce Ocean Hypoxia through Policy, Regulatory and Economic Instruments that Promote Nutrient Efficiency and Recovery**

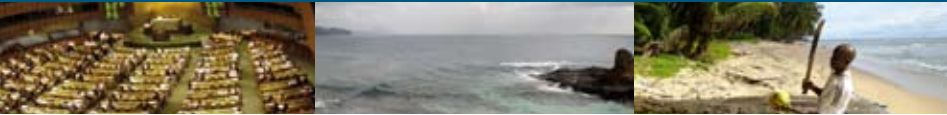
Since the early 1900s there has been a substantial increase in the amount of nitrogen and phosphorous from both agricultural runoff (fertilizers and manure) and wastewater reaching coasts and oceans. Excess amounts can create dead zones in which decomposing plankton consumes almost all available oxygen, seriously impacting coastal ecosystems and the economic sectors and livelihoods that depend on them. This, in combination with the fact that much of the world's sewage is poorly treated or entirely untreated has led to continued growth in the occurrence of coastal hypoxic zones. By 2008, 400 of these hypoxic or dead zones around the world had been reported.

With nutrient pollution and hypoxia emerging as a major global issue for the oceans, there is an urgent need for substantial increases in the efficiency of agricultural nutrient use and for 'waste' nutrients to be increasingly recovered and reused for fertilizer and other needs. Available and proven policy, regulatory and economic instruments, such as taxes, cap and trade, and subsidies, that promote efficiency and recovery, need to be scaled up to transform the nutrient economy from largely linear to much more cyclic over an appropriate time frame. In countries with Emissions Trading Schemes (ETS), fertilizer companies that innovate in response to these market and regulatory signals, would be able to sell carbon emissions credits due to the sizeable reductions in their energy use and associated emissions of greenhouse gases.

The end game of this proposal is a gradual increase in the volume of fertilizer produced from recovered nitrogen and phosphorus and increased efficiency in agricultural use of manufactured and recovered fertilizer. The increased diversification of fertilizer raw material sources should in turn help to moderate fertilizer prices and their volatility, contributing to global food security. Resulting decreases in the loads of nitrogen and phosphorus entering coastal areas will reduce hypoxia issues.

# OBJECTIVE 3

## ACTIONS LEADING TO POLICY, LEGAL AND INSTITUTIONAL REFORMS FOR EFFECTIVE OCEAN GOVERNANCE



### **PROPOSAL 3.A.** **Create and Implement an Institutional and Legal Framework to Protect Habitats and Biodiversity Beyond National Jurisdictions**

Habitats containing extensive biodiversity that lie outside the jurisdiction of nations, areas known as biodiversity areas beyond national jurisdiction, increasingly require urgent attention. Technological change along with newer practices such as deep-sea mining, more intensive fishing, biogenetics, and deeper oil and gas drilling operations all increase risks to areas historically not under threat. Inadequate governance is likely to affect the conservation and sustainable use of marine biodiversity in such areas

This proposal seeks to initiate a process towards the identification and addressing of governance gaps and ways forward, including the possible development of a multilateral agreement under the UN Convention on the Law of the Sea.

Agreement will also be sought on targets and a process for identification of biodiversity areas beyond national jurisdiction in need of protection, including on matters of marine biodiversity conservation measures.

The desired end result is a globally consistent and universally applied governance and management framework for areas beyond national jurisdiction based on the precautionary principle and ecosystem approach.



## OBJECTIVE 3

### **PROPOSAL 3.B.** **Reform Regional Ocean Management Organizations**

There is a critical need to reform regional ocean governance.

This proposal seeks to improve cooperation among the different regional organizations and strengthen the individual ones to ensure effective management, including conservation and sustainable use of the marine environment, through ecosystem-based approaches.

The goals include stronger regional institutional capacity across a range of issues that will bridge the gap that currently exists between international and national bodies; and stronger regional cooperation to ensure effective implementation of global and regional agreements.

### **PROPOSAL 3.C.** **Enhance Coordination, Coherence and Effectiveness of the UN System on Ocean Issues**

UN-Oceans was created in 2003 to establish an effective, transparent and regular inter-agency coordination mechanism on ocean and coastal issues within the United Nations system. There is now a need for a stronger and more visible mechanism to foster dialogue, coordination and cooperative action among UN agencies.

This proposal seeks to review UN-Oceans with a goal of developing a higher-level, more effective coordination and collaboration mechanism for Ocean and coastal issues.

An enhanced UN-Oceans would improve interagency coordination, coherence and cost efficiency, lead to more strategic outcomes across the UN system on oceans issues, and promote joint programming, building on comparative advantages of agencies on ocean matters.

# OBJECTIVE 4

**ACTIONS SUPPORTING MARINE RESEARCH, MONITORING, AND EVALUATION, TECHNOLOGY AND CAPACITY TRANSFER FOR IMPROVING KNOWLEDGE, ADDRESSING EMERGING ISSUES, DEVELOPING CAPACITIES IN SUPPORT OF A SUSTAINABLE USE OF THE OCEAN**



**PROPOSAL 4.A.**  
**Increase Institutional and Human Capacity for Sustained Observations, Monitoring, Marine Research, and Evaluation of Progress toward International Commitments**

Sustainable, ecosystem-based policies and measures for the ocean and coasts need to be supported by science and solid institutional frameworks. A number of organizations have long recognised that a mechanism for the global reporting on, and assessment of, the ocean is required to produce the information necessary for policy formulation. To that end in 2005, the UN General Assembly launched such a mechanism, first with the start-up phase of the Regular Process for Reporting and Assessment of the Marine Environment, called the Assessment of Assessments, and then the formal start of the Regular Process in 2010. It is now critical that UN Member States provide the Regular Process with appropriate support so that the planned global assessment can be finalized and delivered in 2014, in time for the Commission on Sustainable Development review of the ocean, and thereafter on a five-year basis.

For those nations for whom scientific monitoring remains a challenge, capacity development and technology transfer continues to be an issue of central importance, especially to developing states and SIDS.

This proposal seeks to promote a commitment by Member States and international financial institutions to provide appropriate means for the Regular Process to operate. In this regard it is important to improve the readiness of the Global Ocean Observing System, conduct a global and regional assessment of capacity development needs, and promote effective conservation and management measures in developing countries through scientific assessment. An international body should be appointed, charged with collecting and collating information on the ocean and coastal areas.

The end result will be improved knowledge of the impact of human activities on marine ecosystems and a stronger scientific basis for producing a more secure foundation for decision making in the context of the precautionary approach. An agreed evaluation framework and indicators against which to assess progress by a single agency will assist advancement toward the sustainable development of the ocean and implementation of agreements.

