

GREEN economy

in a Blue World

SYNTHESIS REPORT



United Nations Environment Programme (UNEP)

UNEP coordinates United Nations environmental activities, assisting developing countries in implementing environmentally sound policies and practices. It was founded as a result of the United Nations Conference on the Human Environment in June 1972. Its mission is to provide leadership and encourage partnership in caring for the environment by inspiring, informing and enabling nations and peoples to improve their quality of life without compromising that of future generations.

Food and Agriculture Organisation (FAO)

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 well-being 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 well-being, 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.

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 ninety percent 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 ninety-nine percent 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.

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.

The United Nations Department of Economic and Social Affairs (DESA)

DESA and its predecessors have helped countries around the world meet their economic, social and environmental challenges for more than 50 years.

DESA's mission - to promote development for all - reflects a fundamental concern for equity and equality in countries large and small, developed and developing.

IUCN Global Marine Programme

Founded in 1948, The World Conservation Union brings together States, government agencies and a diverse range of non-governmental organizations in a unique world partnership: over 1000 members in all, spread across some 140 countries. As a Union, IUCN seeks to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable.

WorldFish Center

The WorldFish Center an organization dedicated to reducing poverty and hunger by improving fisheries and aquaculture. It is an international, non-profit research organization that focuses on the opportunities provided by fisheries and aquaculture to reduce poverty, hunger and vulnerability in developing countries. The WorldFish Center is one of the 15 members of the Consortium of International Agricultural Research Centers supported by the Consultative Group on International Agricultural Research (CGIAR), a global partnership that unites the organizations engaged in research for sustainable development with the funders of this work. The funders include developing and industrialized country governments, foundations, international and regional organizations.

GRID-Arendal

GRID-Arendal is a collaborating centre of the United Nations Environment Programme (UNEP). Established in 1989 by the Government of Norway as a Norwegian Foundation, its mission is to communicate environmental information to policy-makers and facilitate environmental decision-making for change. This is achieved by organizing and transforming available environmental data into credible, science-based information products, delivered through innovative communication tools and capacity-building services targeting relevant stakeholders.

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FOREWORD

A worldwide transition to a low-carbon, resource-efficient Green Economy will not be possible unless the seas and oceans are a key part of these urgently needed transformations.

The marine environment provides humanity with a myriad of services ranging from food security and climate regulation to nutrient cycling and storm protection. These in turn underpin lives and livelihoods in sectors from tourism to fisheries.

Yet despite this importance, the last three to four decades have seen increasing degradation of oceans as a result of, for example, pollution from land-based sources, overfishing and increasingly, climate change.

This in turn, is threatening the livelihoods of millions of people around the world who depend on these critical ecosystems for their primary source of protein and for job security both directly and indirectly.

With a growing population, set to rise from seven billion today to over nine billion by 2050, these pressures and impacts are likely to intensify unless the world becomes more intelligent about managing these essential resources.

The Green Economy in a Blue World report analyzes how key sectors that are interlinked with the marine and coastal environment – the blue world – can make the transition towards a Green Economy.

The report covers the impacts and opportunities linked with shipping and fisheries to tourism,

marine-based renewable energies and agriculture.

The findings underline that a shift to sustainability in terms of improved human well-being and social equity can lead to healthier and more economically productive oceans that can simultaneously benefit coastal communities and ocean-linked industries.

Many countries are already acting to chart a fresh future for their seas and oceans and adopting the kinds of smart public policies needed to unlock the investments and creative strategies necessary.

The upcoming Rio+20 Summit is an opportunity to scale-up and accelerate these transitions under the twin themes of a Green Economy in the context of sustainable development and poverty eradication and an institutional framework for sustainable development.

Both the marine and the terrestrial environments are more than just an economy—they are part of humanity’s cultural and spiritual dimensions. However, through a better understanding of the enormous economic losses being sustained and the enormous opportunities from investing and re-investing in marine ecosystems, perhaps the balance can be tipped away from degradation and destruction to sustainable management for this generation and the ones to come.



Achim Steiner
 UN Under-Secretary General
 and UNEP Executive Director

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INTRODUCTION

The world's oceans and coasts – the *Blue World* – are the cornucopia for humanity. They provide us with food, oxygen and livelihoods.

Most of the world's international trade travels by sea. Sea floors yield important minerals, sand and gravel. Technology is beginning to tap new sources of energy from ocean tides, waves and wind. Coastal habitats provide firewood, fibres and other resources, are natural carbon sinks and protect from storms and surges. Ocean views have been shown to improve people's wellbeing and are an important reason homes near the sea have higher value. Tourism that relies on clean beaches, safe water and abundant marine wildlife provides many ocean communities with jobs, income and foreign exchange. Ocean recreation offers both market and non-market benefits to residents and visitors of the coasts.

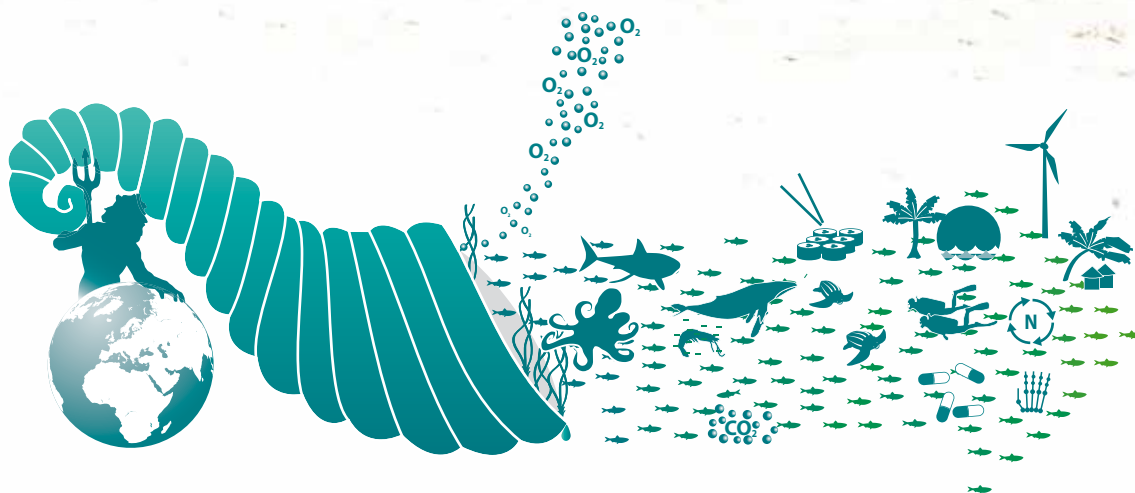
Throughout the course of history, humans have been drawn to coastal areas to enjoy the bounty of the sea. Oceans and coasts are the foundation of much of the world's economy and the cultures of many peoples. As much as 40 per cent of the world's population now lives within 100 km of the shore line. Many of the world's great cities, markets and industries have risen along the coast because of access to trade and resources. Next to marine fisheries, traditional economic sectors like shipping, power generation and manufacturing are often concentrated in coastal areas. Only recently, however, have we started to understand the economic importance of the ecological health of our seas. Ocean and coastal habitats, species, and ecosystems support natural capital and economic flows, together referred to as ecosystem services, which may

rival global market output in terms of sheer economic value.

Harmonising traditional economic activity and ecosystem-dependent economic values is a challenge we must address. Because of the fluid nature of the ocean, coastal and marine industries cannot be isolated from the watersheds and ocean ecosystems in which they operate. Economic activities near the sea and even far away have damaged the integrity of oceans and coasts. Human impacts on coasts and oceans have destroyed 20 per cent of mangroves and now put more than 60 per cent of tropical coral reefs under immediate, direct threat. Today, more than 30 per cent of the world's fish stocks are overexploited, depleted or recovering from depletion, and over 400 oxygen-poor "dead zones" exist in the world.

The decline in the ecological health and economic productivity of the world's oceans can be reversed by shifting to a greener, more sustainable economic paradigm in which human well-being and social equity are improved, while environmental risks and ecological scarcities are reduced. Technological advances now permit more profitable industrial output with fewer environmental impacts. Research shows that many ocean industries and businesses benefit directly from cleaner, more ecologically robust marine ecosystems. Market mechanisms and innovative agreements now exist to provide financial incentives for people to protect economically valuable marine ecosystem services that traditionally have fallen outside the market. Policies and collaborative solutions are

World oceans, a cornucopia of goods and services



emerging that internalise the external costs of environmentally damaging practices and reward those who create external benefits through sound uses. Sustainable practices can improve the current and future economic, nutritional, cultural and societal value of oceans to people and guarantee these values far into the future.

This report highlights ways to reduce the environmental impact and improve the environmental, economic and social sustainability of traditional and emerging ocean-oriented economies. The chapters that follow show where fisheries, tourism and maritime transportation can take steps to reduce their impact on the marine environment. In doing so, these industries themselves can become more efficient and profitable and sustainable and can contribute

directly to the sustainability and productivity of other businesses and livelihoods that depend on healthy oceans and coasts. The authors also explore what it will mean to “green” emerging ocean economic activities including energy generation, aquaculture and the mining of deep-sea minerals. Lastly, the volume highlights how ‘greening’ the agriculture, wastewater and fertilizer industries could transform the nutrient economy with substantial benefits to ocean sustainability.

Throughout, the report demonstrates that creating a green economy in the blue world, one that “improves human well-being and social equity, while significantly reducing environmental risks and ecological scarcities” means creating sustainable jobs, lasting economic value and increased social equity.

FISHERIES AND AQUACULTURE



Fishers and fish-farmers should, given the dependence of their businesses and livelihoods on ecosystem services, be stewards of the marine environment. Greening the fisheries and aquaculture sectors requires the overall recognition of their wider societal roles – in particular that of small-scale operations for local economic growth, poverty reduction and food security – through a comprehensive governance framework managing externalities from and on the sector, implementing an ecosystem approach to fisheries and aquaculture with fair and responsible tenure systems that foster stewardship and greater social inclusiveness, and integrating fisheries and aquaculture into watershed and coastal area management, including through spatial planning.

The potential economic gain from reducing fishing capacity to an optimal level and restoring fish stocks is on the order of USD 50 billion per annum. Approximately 32 per

Investment to reduce fossil energy use and thus the carbon footprint of fisheries and aquaculture has potential gains in terms of improved economic performance and in contributing to mitigating climate change.

The needed reductions in fishing capacity and effort in capture fisheries along with the adoption of green technologies can drastically lower fuel consumption and GHG emissions while greatly enhancing the fisheries sector's contribution to economic growth, food and nutrition security and poverty reduction. Well-managed coastal aquaculture and mariculture offer significant scope for green growth and employment opportunities for coastal communities at low levels of CO₂ emissions when compared to other protein production systems.

Supporting development and investment in green technology and raising industry and consumer awareness on the sustainability of fisheries and aquaculture are key approaches to behavioral change and transition to green growth

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