



GOVERNING COASTAL RESOURCES

IMPLICATIONS FOR A SUSTAINABLE BLUE ECONOMY

Copyright © United Nations Environment Programme, 2021

This publication may be reproduced in whole or in part and in any form for educational or non-profit purposes without special permission from the copyright holder, provided acknowledgement of the source is made. The United Nations Environment Programme would appreciate receiving a copy of any publication that uses this publication as a source.

No use of this publication may be made for resale or for any other commercial purpose whatsoever without prior permission in writing from the United Nations Environment Programme.

Disclaimer

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the United Nations Environment Programme concerning the legal status of any country, territory, city or area or of its authorities, or concerning delimitation of its frontiers or boundaries. Moreover, the views expressed do not necessarily represent the decision or the stated policy of the United Nations Environment Programme, nor does citing of trade names or commercial processes constitute endorsement.

Job No. DTI/2304/PA

ISBN: 978-92-807-3806-3

Layout: Claudia Tortello

Infographics design: Yi-Ann Chen (IRP Secretariat), Adam Turney (UNEP-WCMC)

Vectors and Icons: Freepik at www.freepik.com

Photo cover: Lower Duden Waterfall in Antalya City. Shutterstock/Nejdet Duzen

Printed by: UNESCO

GOVERNING COASTAL RESOURCES

IMPLICATIONS FOR A SUSTAINABLE BLUE ECONOMY

ACKNOWLEDGEMENTS

Lead authors: Stephen Fletcher, Yonglong Lu, Porfirio Alvarez, Chris McOwen

Contributing authors (alphabetic): Yvette Baninla, Annik Magerholm Fet, Guizhen He, Christina Hellevik, Helen Klimmek, Juliette Martin, Roberto Mendoza Alfaro, Gaspard Philis, Nancy Rabalais, Uriel Rodriguez Estrada, Josie Wastell, Sam Winton, Jingjing Yuan.

This report was written under the auspices of the International Resource Panel (IRP) of the United Nations Environment Programme (UNEP). We thank Janez Potočnik and Izabella Teixeira, the co-chairs of the IRP, and the members of the IRP and its Steering Committee.

We are very grateful to the Review Editor, Ester van der Voet (IRP Panel member, Leiden University) and expert reviewers who provided valuable comments on the report: David S. Berry (University of the West Indies), Theophile Ndougsa Mbarga (University of Yaounde I, Cameroon), Judith Gobin (University of the West Indies, St. Augustine Campus), Ramesh Ramachandran (National Centre for Sustainable Coastal Management, Ministry of Environment, Forest and Climate Change, India), Prof. N. Raghuram (International Nitrogen Initiative and Sustainable India Trust, New Delhi), Dr. Sivaji Patra (South Asian Cooperative Environment Programme, Colombo), Rahanna Juman (Institute of Marine Affairs, Trinidad and Tobago), Bryan M. Spears (UK Centre for Ecology & Hydrology), Xinhua Yuan (FAO), Ann Dom (Seas at Risk), Huaping Sun (Jiangsu University).

The lead authors are grateful to the UNEP International Resource Panel and Steering Committee for their valuable discussions, comments, and inputs, in particular Ester van der Voet in her role as review editor. We would like to offer special thanks to Ainhoa Carpintero Rogero, Simone Malaika Retif and Peder Jensen of the UNEP International Resource Panel Secretariat for their support throughout the preparation of this report. Colleagues who provided value comments on initial drafts include: Ole Vestergaard (UNEP), Trine Christiansen (European Environment Agency), Jake Rice (NOAA (retired)), Peter T Harris (GRID-Arendal), and Shang Chen (First Institute of Oceanography, State Oceanic Administration of China). We acknowledge the valuable input of participants at the validation workshops and governance workshop. We acknowledge Saleem Ali for his generous assistance in editing of Chapter 6. We appreciate the financial support from the National Natural Science Foundation of China (Grant No. 71761147001) and the International Partnership Program by the Chinese Academy of Sciences (121311KYBS20190029) for the three international symposia held in Beijing.

Recommended citation: IRP (2021). Governing Coastal Resources: Implications for a Sustainable Blue Economy. Fletcher, S., Lu, Y., Alvarez, P., McOwen, C., Baninla, Y., Fet, A.M., He, G., Hellevik, C., Klimmek, H., Martin, J., Mendoza Alfaro, R., Philis, G., Rabalais, N., Rodriguez Estrada, U., Wastell, J., Winton, S., Yuan, J. A. Report of the International Resource Panel. United Nations Environment Programme. Nairobi, Kenya.

FOREWORD

Our shared ocean is at risk.

Two thirds of our planet is covered by the ocean, a system that not only supports life on Earth and human well-being but also regulates the climate. The ocean provides oxygen, food, energy, water and raw materials. It offers remarkable cultural services and is a source of jobs and economic activity across our planet.

Despite its importance, the future of our world's ocean is at a critical point. Over-exploitation, pollution and climate change are causing a serious loss of marine biodiversity. Without a healthy ocean all the services it provides will be disrupted and the consequences will be dire.

The 2030 Agenda dedicates Sustainable Development Goal 14: Life Below Water to "conserve and sustainably use the oceans, seas and marine resources". As we enter the decade for achieving the 2030 Agenda, we need urgent action to mitigate the detrimental effects human activities are triggering, from those undertaken at sea or in coastal areas, to those occurring inland, hundreds of kilometres away from the coast.

A wide range of initiatives across the planet are working in this direction. This includes UNEP's ecosystem-based marine and coastal management and ocean governance work: the Sustainable Blue Economy Initiative, the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, and efforts of the Regional Seas programmes. In addition, scientific findings continue to strengthen our knowledge-base for ocean policy-making and management solutions, a focus of the UN Decade of Ocean Science for Sustainable Development (2021-2030), and the UN Decade for Action on Ecosystem Restoration (2021-2030) which UNEP is proud to co-lead with numerous partners.

This International Resource Panel report, "Governing coastal resources: implications for a sustainable blue economy", outlines key pathways through which land-based activities influence coastal resources, across land-sea boundaries and at multiple spatial scales. This report also stresses the need for a holistic governance approach that accounts for the connections between land-based activities and coastal resources. The report provides practical options to strengthen existing land-sea governance practices and presents new governance

structures to reduce the impact of land-based activities on coastal resources and support the transition to a sustainable blue economy. We have a significant opportunity and responsibility to mitigate human impacts.

It is time to act and save our Blue Planet for humanity to thrive. I believe this important report of the International Resource Panel will make valuable contributions to an urgently needed shift towards more comprehensive and effective ocean stewardship, placing us on a sustainable ocean trajectory that we are all relying on. Business as usual is no longer an option. COVID-19 has demonstrated that humanity can respond collectively to a shared global challenge – let's build on this to create an unstoppable movement for sustainable oceans for All.

Ligia Noronha

*Director, Economy Division
UN Environment Programme
(April 2021)*

PREFACE

Historically the management of our ocean has been fragmented by natural, legal and administrative boundaries. Land-based and ocean-based activities have been governed independently creating a disconnect between where impacts are experienced and where they originate.

It is widely recognised that land-based human activities significantly impact the marine environment. For instance, estimates suggest that 80 per cent of marine pollution originates on land. Still, there are very few, if any, truly effective governance mechanisms that take account of land-ocean interactions.

Since 2007 the International Resource Panel has provided independent, authoritative and policy-relevant scientific assessments on the status, trends and future state of natural resources. In this report, our focus is on coastal resources, specifically how land-based human activities affect the quality and availability of coastal and marine resources.

This report identifies the numerous pathways through which land-based activities generate impacts on coastal resources, acknowledging that they can differ, depending on the location, type, condition and resilience of the local ecosystems. It also identifies implications for the sustainable blue economy of changes to the coastal resource base caused by land-based activities. This is further explored in detailed assessments of shrimp aquaculture and coastal mining.

Based on its scientific findings, the report calls for vastly improved governance approaches to reduce the negative impacts of land-based activities on coastal resources as well as supporting the transition to a sustainable blue economy. We have a significant opportunity and responsibility to reverse human impacts on our shared ocean.

We thank the lead authors and their team for their dedicated efforts to draw together an evidence base that demonstrates beyond question the need for enhanced governance coordination between terrestrial activities and marine resources. As the report advocates, future governance systems should not be constrained by existing boundaries which often disconnect causes from effects. Instead greater emphasis should be placed on safeguarding our natural resources, advancing the sustainable development goals of the Agenda 2030 and breaking away from current unsustainable resource use patterns.



Izabella Teixeira
Co-Chair
International Resource Panel



Janez Potočnik
Co-Chair
International Resource Panel

EXECUTIVE SUMMARY

Coastal resources - including fish, minerals and energy - are critical to people, nature and the economy, and are a focus for the emerging sustainable blue economy agenda. Whilst there is no globally agreed definition of a Sustainable Blue Economy, the working definition in this report is *an ocean-based economy that provides equitably distributed social and economic benefits for current and future generations, while restoring and protecting the intrinsic value and functionality of coastal and marine ecosystems and is based on clean technologies and circular material flows* (adapted from WWF, 2018). It has long been recognized that a particular challenge in coastal areas is the management of land-based activities that generate detrimental impacts on coastal resources in the marine environment. Many of these pressures are negative externalities of land-based human activities that are not taken into account within existing resource-governance frameworks. While a range of market-based, non-market and other interventions are worthy of consideration, the development of improved approaches to land-sea governance that take account of how land-based activities affect the quality and availability of coastal resources is the focus of this report.

The primary purpose of the study was to determine appropriate governance approaches to reduce the effects of land-based activities on coastal resources and to support the transition to a sustainable blue economy. A secondary purpose of the study was to test a new method to identify the pathways through which land-based activities affect coastal resources. This global study used a Drivers, Pressures, State,

based activities on coastal resources. In total, over 1,000 separate pieces of evidence were reviewed, supported by three workshops to validate and refine the analysis.

We found that land-based activities generate multiple impacts of different strength on coastal resources and that biotic coastal resources are more impacted by land-based activities than abiotic coastal resources (however, this could in part be due to fewer studies focusing on abiotic resources). There is comparatively strong evidence that all biotic coastal resources are highly impacted by land-based activities, with agriculture, ports/harbours and aquaculture being particularly impactful land-based activities. Biodiversity was the coastal resource most impacted by land-based activities. By examining the dependency of sustainable blue economy sectors on coastal resources, we found that aquaculture, fishing and tourism were most vulnerable to changes in the coastal resource base arising from land-based activities. In comparison, sectors dependent on abiotic coastal resources, such as aggregate extraction, were somewhat isolated from the effects of land-based activities.

The results clearly showed that coastal resources, particularly living resources, are negatively affected by stressors generated by land-based activities that may take place at great distances from the coast. Land-based activities, however, are currently managed through sector-specific arrangements with limited, if any, regard for their effects on coastal resources. An additional barrier is that terrestrial and marine areas typically operate within separate governance frameworks with no means of coordination. Therefore, in order to ensure the effective conservation

预览已结束，完整报告链接和二维码如下：

https://www.yunbaogao.cn/report/index/report?reportId=5_13592

