

LEGAL ASPECTS OF SUSTAINABLE DEVELOPMENT

TOWARDS SUSTAINABLE
COASTAL DEVELOPMENT

Institutionalizing Integrated Coastal Zone Management
and Coastal Climate Change Adaptation in South Asia

TONY GEORGE PUTHUCHERRIL

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Towards Sustainable Coastal Development

*Institutionalizing Integrated Coastal Zone
Management and Coastal Climate Change
Adaptation in South Asia*

By

Tony George Puthucherril



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Towards Sustainable Coastal Development

Institutionalizing Integrated Coastal Zone Management and Sustainable Tourism Change Adaptation in South Africa

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Abstract text describing the research objectives and findings related to institutionalizing Integrated Coastal Zone Management and Sustainable Tourism Change Adaptation in South Africa.



Legal Aspects of Sustainable Development

Series Editor

David Freestone

This series publishes work on all aspects of the international legal dimensions of the concept of sustainable development. Its aim is to publish important works of scholarship on a range of relevant issues including conservation of natural resources, climate change, biodiversity loss and the role of international agreements, international organizations and state practice.

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Dedicated to My Most Beloved Ammamma, the Late Mrs. Lily George



Series Editor's Preface

This is the twentieth volume in the Brill Nijhoff series on *Legal Aspects of Sustainable Development* published under my General Editorship. The aim of this series is to publish works at the cutting edge of legal scholarship that address both the practical and the theoretical aspects of this important concept.

I am very pleased to be able to include this work by Dr Tony George Puthucherril in this series. It is in fact his second volume in the series. The previous volume, published in 2010, was the first major assessment of the 2009 International Maritime Organization's International Convention for the Safe and Environmentally Sound Recycling of Ships.¹ The industry he discussed in that work is based mainly in South Asia, with notoriously hazardous working conditions. He returns to the South Asia region in this volume—which is the revised version of his doctoral thesis at the Dalhousie University Law School.

Dr Puthucherril starts his work with a quotation from *The Mahabharata*, an ancient Hindu text, which relates vividly how the ocean overwhelmed Lord Krishna's city of *Dwaraka*. The Intergovernmental Panel on Climate Change in its 2014 Assessment Report predicts sea level rises over the next century which although more gradual seem likely to have similarly apocalyptic impacts on low lying areas and cities of the world, particularly in the Pacific and South Asia. The only long term solution is of course global agreement on hard hitting greenhouse gas mitigation measures, but in the meantime there is a lot that can be done to manage and adapt to coastal changes. The main tools are integrated coastal zone management and establishing linkage to systematic adaptation measures. International funding for this is being developed through bilateral mechanisms as well as from the Global Environment Facility and the new UNFCCC Green Climate Fund.

This volume contains an encyclopedic treatment of the state of coastal zone law and coastal management regimes in South Asia. The author's basic premise is that a proactive approach will be necessary in the region to address the large scale climatic impacts that can be expected. Obviously a great deal remains to be done. Based on a scholarly assessment of lessons to be learned from other

1 Tony George Puthucherril, *From Shipbreaking to Sustainable Ship Recycling: Evolution of a Legal Regime*. (Legal Aspects of Sustainable Development, Vol. 5), Brill, Leiden and Boston, 2010.

regions, the work provides a comprehensive blueprint for regional action. It is also an important contribution to our understanding of sustainability in the context of coastal development in the age of climate change.

David Freestone

Washington DC

July 2014

Acknowledgements

This Book is a revised and abridged version of a much larger doctoral thesis, which I recently completed at the Schulich School of Law, Dalhousie University. It goes without saying that re-engineering a thesis into a Book involves input and support from several quarters. I would not have been able to complete it were it not for the blessing of the Almighty, and the support of my family, elders, teachers, and friends.

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To my church, *Madre de deus* at *Vettucaud*, Trivandrum, along with St. George Forane Church at *Edathua* and Our Lady of Health at *Vailankanni*: As you daily carry out your ministry of love and compassion to coastal communities impacted by the central problems discussed in this book, I hope my words give voice to the pain and loss you quietly and tirelessly seek to alleviate.

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Tony George Puthucherril

Halifax, Nova Scotia

July, 2014

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List of Abbreviations

AR4	IPCC Fourth Assessment Report
AR5	IPCC Fifth Assessment Report
Barbados CZMA	<i>Coastal Zone Management Act, 1998</i>
Belize CZMA	Belize Coastal Zone Management Authority
BOBLME	Bay of Bengal Large Marine Ecosystem Project
CBD	<i>United Nations Convention on Biological Diversity, 1992</i>
CC&CRMA	<i>Coast Conservation and Coastal Resource Management Act, 2011</i>
CCA	<i>Coast Conservation Act, 1981</i>
CCCA	Coastal Climate Change Adaptation
CDA	Coast Development Authority
CDS	Coastal Development Strategy, 2006
CMAAs	Coastal Management Areas
CMP	Coastal Management Program
CMZ 2008	<i>Draft Coastal Management Zone Notification, 2008</i>
CO ₂	Carbon dioxide
CRZ	Coastal Regulation Zone
CRZ 1991	<i>Coastal Regulation Zone Notification of 1991</i>
CRZ 2011	<i>Coastal Regulation Zone Notification of 2011</i>
CVCAs	Critically Vulnerable Coastal Areas
CZ&CRMP	Coastal Zone and Coastal Resource Management Plan
CZM	Coastal Zone Management
CZMA	<i>Coastal Zone Management Act, 1972</i>
CZMP	Coastal Zone Management Programs/Coastal Zone Management Plan
CZMS	Coastal Zone Management Subgroup
CZP	Coastal Zone Policy 2005
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EPPA	<i>Environmental Protection and Preservation Act of Maldives, 1993</i>
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
GHGs	Greenhouse Gases
HRM	Halifax Regional Municipality
HTL	High-tide Line
HWM	High Water Mark

ICM	Integrated Coastal Management
ICM Act	<i>National Environmental Management: Integrated Coastal Management Act, 2008</i>
ICOM	Integrated Coastal and Ocean Management
ICZM	Integrated Coastal Zone Management
ICZMP	Integrated Coastal Zone Management Plan
IMCAM	Integrated Marine and Coastal Area Management
IPCC	Intergovernmental Panel on Climate Change
LME	Large Marine Ecosystem
LOMAs	Large Ocean Management Areas
LOSC	<i>United Nations Convention on the Law of the Sea, 1982</i>
LTL	Low-tide Line
MAF	Million Acre Feet
MAP Phase II	Action Plan for the Protection of the Marine Environment and the Sustainable Development of the Coastal Areas of the Mediterranean
MARPOL	<i>International Convention for the Prevention of Pollution from Ships, 1973</i>
MoEF	Ministry of Environment and Forests
MoWR	Ministry of Water Resources
MPAs	Marine Protected Areas
MSP	Marine Spatial Planning
NAPA	National Adaptation Programmes of Action
NCZMA	National CZM Authority
NOAA	National Oceanic and Atmospheric Administration
RCP	Representative Concentration Pathways
RMA	<i>Resource Management Act, 1991</i>
SAARC	South Asian Association for Regional Cooperation
SACEP	South Asia Co-operative Environment Programme
SASAP	South Asian Seas Action Plan
SCD	Sustainable Coastal Development
SIDS	Small Island Developing States
Sindh CDA	<i>Sindh Coastal Development Authority Act, 1994</i>
SLR	Sea Level Rise
SWOT	Strengths, Weaknesses, Opportunities and Threats
TCCA	<i>Texas Coastal Coordination Act, 1991</i>
TCMP	Texas Coastal Management Program
TCPLMA	<i>Coastal Public Lands Management Act, 1973</i>
UNCCD	<i>United Nations Convention to Combat Desertification</i>

- UNCED United Nations Conference on Environment and Development
- UNDP United Nations Development Programme
- UNEP United Nations Environment Programme
- UNFCCC *United Nations Framework Convention on Climate Change*
- UNHCR Office of the United Nations High Commissioner for Refugees

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