

2005

Analysis of the effectiveness of Indonesia's coral reef management framework

Dirhamsyah
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ANALYSIS OF THE EFFECTIVENESS OF INDONESIA'S CORAL REEF MANAGEMENT FRAMEWORK

**A thesis submitted in fulfillment of the
requirements for the award of the degree**

Doctor of Philosophy

**from
UNIVERSITY OF WOLLONGONG**

by

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Drs (School of Public Administration, Indonesia)
MA (University of Wollongong, Australia)**



**in the Centre for Maritime Policy
University of Wollongong
2005**

DECLARATION

I, Dirhamsyah, declare that this thesis, submitted in fulfillment of the requirements for the award of Doctor Philosophy, in the Centre for Maritime Policy, Faculty of Law, University of Wollongong, is wholly my own work unless otherwise referenced or acknowledged. The document has not been submitted for qualifications at any other academic institution.

Dirhamsyah
23 November 2005

ABSTRACT

Coral reefs are one of the important components of coastal and marine ecosystems in Indonesia. Uncontrolled and irresponsible management has resulted in them being severely stressed. At least 70% of Indonesia's coral reefs are under rigorous threat and this is now considered one of the most serious environmental problems in the country. This thesis analyses the challenges of managing coral reef ecosystems in Indonesia. The problems identified include: lack of community participation; weakness in national and local legislative framework; lack of national policy and planning; lack of law enforcement and compliance systems; weakness in institutional arrangements for coastal and coral reef resources management; and most importantly, the general lack of political and bureaucratic commitment and lack of interagency cooperation at the national and regional government levels.

The thesis concludes with several recommendations for improving the management of coastal and coral reef resources and their ecosystems. The recommendations include: the application of community-based management or co-management concepts in coastal and coral reef resources management; the establishment of a national ocean policy; amendment of several natural resource laws and the enactment of a new integrated natural resources law; the establishment of horizontal and vertical interagency cooperative mechanisms for policy and management planning and implementation; the establishment of national and regional law enforcement units; and the creation of a new Coordinating Ministry for Ocean Activities.

ACKNOWLEDGMENTS

I wish to express my gratitude to a number of people who have assisted and encouraged me during the completion of this thesis. I want to give special thank to my supervisors, Professor Martin Tsamenyi and Associate Professor Sam Bateman, for their continuous support and guidance, for their patience and compassion to convince me that I can complete this study. I also thank Professor Richard Kenchington for his intellectual and policy guidance.

I am also deeply indebted to my brother Mr Peter Flewwelling for his time and effort in proof reading of this thesis. His experience in monitoring, control and surveillance for fisheries management around the world guided me to understand how coastal states can, and in many cases do address the problem of illegal fishing.

I am so grateful to ACIL-Australia, who was appointed by the Australian Agency for International Development (AusAID) to manage my scholarship. I am particularly grateful to Mr. Simon Field, Robert Kingham, Sam Chittick, and Sonia Fallon,

I would like to thank sincerely Dr Ono Kurnaen Sumadhiharga, Director of the Research Center for Oceanography-LIPI, Dr Anugerah Nontji, former Director of Project Management Office of COREMAP, and my superior Dr. Kasim Moosa and Drs Wanda Suryana Atmadja, M.Sc., who have supported me throughout my studies in Australia.

I would also like to thank my friend Leonas Chatim, and Dendie Yunanda, my colleagues in the Centre for Maritime Policy, the Research Center for Oceanography-LIPI, and Project Management Office of COREMAP and Dr Arifin Rudyanto from the National Development Planning Agency (BAPPENAS).

Finally, and most important of all, my deepest appreciation to my lovely wife Tuti Priyanti, my daughter Lia, my sons Reza and Gilang, for all their patience and support for my studies, and my parents and my family who have always been a source of strength and support throughout my academic pursuits. Without their love, this thesis would have never have been completed.

DEDICATION

This thesis is dedicated to my dearest wife Tuti Priyanti, my daughter Lia Fauziah Wati, and my sons Mohammad Reza Darmawan and Mohammad Gilang Kurniawan, who have supported me all the time, and to my father and mother who stimulated my interest in academic pursuit. Their dream that their son will one day graduate with a PhD has finally been realised.

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LIST OF ABBREVIATIONS AND ACRONYMS

ADB:	The Asian Development Bank
AIG:	Alternative Income Generation
APBN:	National Income and Expenses
ASL:	Archipelagic Sea Lanes
AURI:	The Indonesian Air Force
BAKOSURTANAL:	National Coordinating Agency for Survey and Mapping
BAPPEDA:	Regional Development Planning Board
BAPPENAS:	National Development Planning Board
BPPT:	Board of Implementation and Assessment of Technology
BPS:	Statistic Bureau of Indonesia
CBCRM:	Community-based Coastal Resource Management
CBCRM:	Community-based Coastal Resource Management
CBM:	Community-based Management
CBNRM:	Community-based Natural Resource Management
CCRMP:	Community Coral Reef Management Plans
CI:	International Conservation
CITES:	Convention on International Trade in Endangered Species of Wild Fauna and Fauna
CMT:	Customary Marine Tenure
COREMAP:	Coral Reef Rehabilitation and Management Programme
CRMP:	Coastal Resources Management Project

DGC:	The Directorate General of Custom
DGFPNC:	Directorate General of Forest Protection and Nature Conservation
DGI:	The Directorate General of Immigration
DMI:	Indonesian Maritime Council
DU:	District Unit
EEZ:	Exclusive Economic Zone
ENSO:	El Niño Southern Oscillation
FAO:	Food and Agriculture Organisation of the United Nations
FPNC:	The Directorate General of Forest Protection and Nature Conservation
FRMP:	Fisheries Resources Management Project
GBHN:	Broad Guidelines of State Policy
GCRMN:	Global Coral Reef Monitoring Network
GDP:	Gross Domestic Product
GESAMP:	Group of Experts on Scientific Aspects of Marine Pollution
GOI:	Government of Republic of Indonesia
ICEL:	The Indonesian Centre for Environmental Law
ICLARM:	International Centre for Living Aquatic Resources Management
ICM:	Integrated Coastal Management
ICRI:	International Coral Reef Initiative
ICZM:	Integrated Coastal Zone Management
IFM:	Institute of Fisheries Management
IMA:	International Marine Alliance

IMO:	International Maritime Organization
IPB:	Institute of Agriculture Bogor
IUCN:	The World Conservation Union
KEHATI:	The Indonesian Biodiversity Foundation (An Indonesian NGO)
KLH:	State Ministry for Environment
LAPAN:	National Agency for Aerospace
LIPI:	Indonesian Institute of Sciences
LNG:	Liquid Natural Gas
LOSC:	United Nations Convention on the Law of the Sea
MAB:	Man and Biosphere
MCS:	Monitoring, Controlling and Surveillance
MENKO ECU:	Coordinating Ministry for Economic
MMA:	Marine Management Area
MNP:	Marine National Parks
MOA:	Memorandum of Agreements
MOCT:	The Ministry of Communication and Transportation
MODS:	Ministry of Defense and Security
MOEMR:	Ministry of Energy and Mineral Resource
MOF:	Ministry of Forestry
MOHARA:	Ministry of Home Affairs and Regional Autonomy
MONE:	Ministry of National Education
MORRI:	Ministry of Resettlement and Regional Infrastructure
MOTC:	Ministry of Transportation and Communication
MOTI:	Ministry of Trade and Industry
MPA:	Marine Protected Area

MPR:	General People Assembly
MREP:	The Marine Resources, Evaluation and Planning Project
MRP:	Marine Recreation Parks
MSY:	Maximum Sustainable Yield
MWWS:	Marine and Wetland Wildlife Sanctuaries
NGO:	Non-Governmental Organization
OECD:	Organization for Economic Cooperation and Development
PCRA:	Participatory Coastal Resource Assessment
PERDA:	Regional Government Regulation
PRA:	Participatory Resource Assessment
PROPENAS:	National Development Program
PU:	Provincial Unit
RCO:	Research Centre for Oceanography
REPELITA:	Five Years Development Plan
RUMSRAM:	A local NGO in Biak Numfor, Indonesia
SEAPOL:	South East Asian Programme in Ocean Law, Policy and Management
SMCT:	State Ministry for Cultural and Tourism
SMNDP:	State Ministry for National Development Planning
SMRST:	State Ministry for Research and Technology
TAC:	Total Allowable Catch
TNC:	The Nature Conservancy
UNAIR:	University of Airlangga
UNCED:	United Nations Conference on Environment and Development
UNDP:	United Nations Development Programme

UNSD:	United Nations Division for Sustainable Development
UNEP:	United Nations Environmental Programme
UNHAS:	University of Hasanuddin
UNPATTI:	University of Pattimura
UNRI:	University of Riau
UNSRAT:	University of Sam Ratulangi
VMS:	Vessel Monitoring System
WALHI:	The Indonesian Forum for the Environment
WCED:	World Commission on Environment and Development
WSSD:	World Summit on Sustainable Development
WWF:	World Wildlife Funds for Nature