Copyright is owned by the Author of the thesis. Permission is given for a copy to be downloaded by an individual for the purpose of research and private study only. The thesis may not be reproduced elsewhere without the permission of the Author.

# EVALUATION AND ITS ROLE IN THE DEVELOPMENT OF A NATIONAL COASTAL POLICY STATEMENT: A PHILIPPINE CASE STUDY

A thesis presented in partial fulfilment of the requirements for the degree of

Master of Philosophy: Resource and Environmental Planning

at Massey University, Palmerston North

New Zealand

Cheryl C. Agustin-Flores
1993

#### ABSTRACT

The purpose of this study is to formulate a National Coastal Policy Statement for the Philippines whose unsustainable management methods and practices over the years have increasingly degraded the coastal environment in a way which is likely to prevent future generations from having the same opportunities as the present. The practices in the Philippines, have exceeded the carrying capacities of resources, reduced the diversity of species, and contributed to the extinction of significant and endangered species. These actions and impacts are all attributed to the economic situation in the Philippines: poverty of coastal residents, and the rate of population increase. Both sectors: socioeconomic and ecological, in addition to institutional sector, need reconciliation in order for people to live in harmony with nature and coastal resources. Thus, it is envisaged that the Philippines should have an integrated coastal policy statement at the national level. This move is according to IUCN recommendation and is the answer to emerging issues on the coastal zone: impacts of human activities on coastal resources, issues arising from hazard occurrence, issues on developmental needs and their likely impacts, and organizational process problems.

In order to develop a NCPS for the Philippines, nine criteria for the coast are developed: water quality (including prevention of pollution at source, species diversity), carrying capacity, equity (including intrinsic values), coastal protection from hazards, cooperation, financial criteria, administrative efficacy and systems approach in planning. These are used in evaluating the effectiveness of various coastal policy statements at different levels, using a framework developed for the purpose.

The developed NCPS for the Philippines is aimed at addressing all coastal issues, and is based on: the IUCN principles, the Philippine principles, and some of the policies of Hawaii and New Zealand. It is envisaged that the implementation of the Philippine NCPS will lead to the achievement of sustainable development of coastal resources, including a sustainable living which hopes to alleviate poverty.

17

#### ACKNOWLEDGMENTS

In preparing this planning study, I received help and guidance from various individuals and institutions. Dr. Johanna Rosier provided expert review, and made substantive and valuable comments. The New Zealand Government and the Philippine Government jointly sponsored my scholarship studies through the Overseas Development Assistance - Bilateral Aid Program. Mr. Mike Randall and Miss Rachel Gundesen of the Ministry of External Relations and Trade, continuously supported and encouraged me to go on. The Geography Department staff, particularly, Mrs. Olive M. Harris and Mrs. Glynis E. Walsh, were instrumental in providing materials for my work; Karen M. Puklowski shared her time in drawing illustrations and figures; Mr. Derek B. Williams helped in solving problems related to computer use and photocopying of materials; and Mr. Richard G. Heerdegen untiringly took the time in handing my drafts to my supervisor, taking them back to the university after correction. Mr. Ron Thomas provided considerable effort in proof reading the text.

I am indebted also to my husband, Audie, who assisted in research work, in preparing maps and in doing domestic work for me; to our flatmates Louie D. Miranda and Poly C. Wong, and our friends Maricel Lee, Sue S. Young and Ruffy D. Guinto for providing rides to and from the university; to Audie and Louie for word processing; to my parents, brothers, sisters, nephew and nieces who encouraged me all the time; to my friends and cousins in the USA and the Philippines who provided me with moral support and to all our friends in New Zealand who made our stay worthwhile.

As with my professional undertakings, I have enjoyed the unfailing support of my husband Audie, and our daughter, Danielle Kaye who served as my precious inspiration.

The mechanics of preparing a thesis can be discouraging, and the help and encouragement of everyone, is much appreciated.

Most of all I am very grateful to God for making everything possible.

Cheryl Agustin-Flores

# TABLE OF CONTENTS

		<b>PAGE</b>
Abstra	act ·	i
Acknowledgments		
Table of Contents		iii
List of Figures		ix
List of Tables		ix
Acron	yms	X
Glossa	nry	xiii
CHAI	PTER ONE INTRODUCTION	1
1.1	The Coastal Zone	1
	1.1.1 The Need for a National Coastal Policy	8
	1.1.2 National and Regional Coastal Policy Statements and their Roles	11
1.2	Coastal Zone Management (CZM) in the Philippines	13
	1.2.1 Background	13
	1.2.2 Issues and Problems	16
	1.2.2.1 Impact Issues	17
	1.2.2.2 Hazards	22
	1.2.2.3 Developmental Issues	23
	1.2.2.4 Organizational Process Problems	24
	1.2.3 Philippine Strategy for Sustainability	25
	1.2.4 Need for a National Coastal Policy	26
	1.2.5 Possibility of Integration	27
1.3 Study Methodology		28
	1.3.1 Aim and Objectives	28
	1.3.2 Limitations	29
	1.3.3 Research Plan	30
1.4 Conclusion		

	iv
CHAPTER TWO REVIEW OF LITERATURE CONCERNING	3
INDIVIDUAL ISSUES	34
2.1 Introduction	34
2.2 Coastal Issues	35
2.2.1 Impact Issues	36
2.2.2 Hazard Issues	39
2.2.3 Developmental Issues	41
2.2.4 Organizational Process Problems	42
2.3 Development of Criteria for the Coast	44
2.3.1 Water Quality Criteria	45
2.3.1.1 Prevention of Pollution at Source	50
2.3.1.2 Species Diversity	50
2.3.2 Carrying Capacity	52
2.3.3 Equity	56
2.3.4 Coastal Protection	59
2.3.5 Economic Efficiency	61
2.3.6 Financial Criteria	62
2.3.7 Cooperation	63
2.3.8 Administrative Efficacy	66
2.3.9 Systems Approach	67
2.4 Conclusion	71
CHAPTER THREE REVIEW OF EVALUATION METHODS	73
3.1 Introduction	73
3.2 Ideal Characteristics of Evaluation Methods	76
3.2.1 Systematic	77
3.2.2 Rational	77
3.2.3 Comprehensive	77
3.2.4 Integrative	78
3.2.5 Flexible	78
3.2.6 Simple	78
3.2.7 Quick	70

	v
3.2.8 Inexpensive	79
3.2.9 Legally Acceptable	79
3.2.10 Open-ended	80
3.3 Choosing an Evaluation Framework	80
3.4 Critique of Evaluation Methods	81
3.4.1 Minimum Requirements Approach	81
3.4.2 Topic Evaluation	83
3.4.3 Composite Evaluation	83
3.4.4 Social Cost Benefit Analysis	84
3.4.5 Planning Balance Sheet Analysis	85
3.4.6 Goals-Achievement Matrix	86
3.5 The Conceptual Evaluation Framework	88
3.5.1 Identification of Goals	90
3.5.1.1 Socio-economic	91
3.5.1.2 Ecological	91
3.5.1.3 Organizational/Institutional	92
3.5.2 Evaluation Criteria	93
3.5.3 Design Strategy	93
3.5.3.1 Socio-economic	93
3.5.3.2 Ecological	94
3.5.3.3 Organizational/Institutional	95
3.5.4 Synthesis and Evaluation	95
3.5.5 Decision	96
3.5.6 Implementation and Monitoring	97
3.5.7 Public Participation	98
3.6 Conclusion	102
CHAPTER FOUR ANALYSIS OF COASTAL POLICY	
STATEMENTS	103
4.1 Introduction	104
4.2 Analysis of Coastal Policy Statements	105
4.2.1 New Zealand	105

	V1
4.2.1.1 Water Quality	107
4.2.1.1.1 Prevention of Pollution at Source	108
4.2.1.1.2 Species Diversity	108
4.2.1.2 Carrying Capacity	109
4.2.1.3 Equity	109
4.2.1.3.1 Intrinsic Values	110
4.2.1.4 Coastal Protection	110
4.2.1.5 Economic Efficiency	111
4.2.1.6 Financial Criteria	111
4.2.1.7 Cooperation	111
4.2.1.8 Administrative Efficacy	112
4.2.1.9 Systems Approach	112
4.2.2 Hawaii	112
4.2.2.1 Water Quality	114
4.2.2.1.1 Prevention of Pollution at Source	114
4.2.2.1.2 Species Diversity	115
4.2.2.2 Carrying Capacity	115
4.2.2.3 Equity	116
4.2.2.3.1 Intrinsic Values	116
4.2.2.4 Coastal Protection	116
4.2.2.5 Economic Efficiency	117
4.2.2.6 Financial Criteria	117
4.2.2.7 Cooperation	117
4.2.2.8 Administrative Efficacy	118
4.2.2.9 Systems Approach	118
4.2.3 Thailand	118
4.2.4 Canada	119
4.2.5 Philippines	120
4.2.6 Lingayen Gulf	122
4.3 Comparison of CPSs	122
4.4 Conclusion	125

	vii
CHAPTER FIVE PROPOSED NATIONAL COASTAL	+1
POLICY STATEMENT FOR THE PHILIPPINES	126
5.1 Introduction	126
5.2 Institutional Arrangements	127
5.3 Structure of the PNCPS	130
5.4 The Proposed Philippine National Coastal Policy Statement	132
5.5 Implications for Implementation	161
5.6 Conclusion	162
CHAPTER SIX CONCLUSION	164
6.1 Outcomes	164
6.2 Implementation	169
6.3 Implications for Research	169
6.4 Conclusion	170
BIBLIOGRAPHY	172
APPENDICES	179
A Agencies responsible for CZM in the Philippines	180
B Local Government Units (LGUs) of the Philippines	
and their roles in development	184
C The Local Development Councils (LDCs) of the	
Philippines and their functions	187
D Relationships of LGUs to the national government	
(The Philippines)	189
E List of issues of socio-economic and ecological	
concern in various countries	190
F Current rules and regulations concerning the	
Philippine coastal zone	194
G. IUCN (1991) recommendations concerning CZM	
at a regional level	201

	viii
H New Zealand Resource Management Act 1991,	
Water Quality Classes - Third Schedule	202
I Range of Evaluation Methods	205
J New Zealand Resource Management Act 1991,	
Purpose and principles	213
K New Zealand Resource Management Act 1991, Section 32	216
L IUCN (1991) Principles of a sustainable society	219
M Shoreline Management Principles - Canada 1978	224
N Hawaii Coastal Policies	227

## LIST OF FIGURES

Figure 1.1	IUCN (1991) Requirements for National Policies	7
Figure 1.2	The Philippines	14
Figure 1.3	Lingayen Gulf	18
Figure 1.4	Bacuit Bay	20
Figure 1.5	Relationship of logging versus fisheries in the Philippines	21
Figure 1.6	Thesis Plan	31
Figure 2.1	Evaluation Criteria for the Coast	46
Figure 3.1	Framework for evaluation of policies/plans (FEP)	89
Figure 5.1	BCZM and its relationship with LGUs and other agencies	128
	Appendix	
Figure C.1	The development councils of the Philippines	
	(organizational structure)	188
	LIST OF TABLES	
Table 3.1	Choosing an appropriate evaluation method	
	with respect to a set of characteristics	82
Table 4.1	Summary of analysis of national/state/regional	
	coastal policy statements with respect to developed criteria	106
	Appendix	
Table E.1	List of issues having impacts of socio-economic	
	and ecological concern in various countries	191
Table I.1	The Planning Balance Sheet Analysis	210
Table I.2	The Goals-Achievement Matrix	212

## **ACRONYMS**

ACEC Australian Committee on Environment and Conservation

ASEAN Association of South East Asian Nations

CFCs ChloroFlouroCarbons

CMT Customary Marine Tenure

CZMA Coastal Zone Management Act

**DENR** Department of Environment and Natural Resources

**DoC** Department of Conservation

EEZ Exclusive Economic Zone

FC Faecal Coliform

FEPA Format for Environmental Policy Analysis

GAM Goals-Achievement Matrix

GOCC Government Owned and/or Controlled Corporations

HCZMP Hawaii Coastal Zone Management Program

HOMRC Hawaii Ocean and Marine Resources Council

HORMP Hawaii Ocean Resources Management Plan

ICLARM International Center for Living Aquatic Resources Management

IUCN International Union for the Conservation of Nature and Natural

Resources

LAC Limits of Acceptable Change

LDC Local Development Council

LGC Local Government Code

LGCAMP Lingayen Gulf Coastal Area Management Program

LOI

Letter of Instruction

mg/l

milligram per liter

M has

Million hectares

ml

milliliter

MPN

Most Probable Number

NCPS

National Coastal Policy Statements

**NEDA** 

National Economic Development Authority

NEPC

National Environmental Protection Council

NGA

National Government Agency

NGOs

Non-government Organizations

nm

Nautical mile

**NPCC** 

National Pollution Control Commission

OSP

Office of State Planning

PBSA

Planning Balance Sheet Analysis

PD

Presidential Decree

PEC

Primary Environmental Care

ppm

Parts per million

**PSSD** 

Philippine Strategy for Sustainable Development

RA

Republic Act

RDC

Regional Development Council

RMA

Resource Management Act

SB

Sangguniang Bayan

SCBA/CBA

Social Cost Benefit Analysis/ Cost Benefit Analysis

SP

Sangguniang Panglungsod

UET Ultimate Environmental Threshold Analysis

UNCLOS United Nations Convention on the Law of the Sea

UNEP United Nations Environment Programme

USAID United States Agency for International Development

USEPA United States Environmental Protection Agency

1.

### **GLOSSARY**

- **AUTOPOIESIS** this concept refers to the essential feature of living systems as they continuously strive to produce and sustain their own organizational activity and structure.
- CHLOROFLOUROCARBONS man-made chemical compounds of chloride, flouride and carbon used in a wide variety of applications including refrigerators and aerosols.
- CONSERVATION the management of human use of organisms or ecosystems to ensure such use is sustainable. Besides sustainable use, conservation includes protection, maintenance, rehabilitation, restoration and enhancement of populations and ecosystems.
- CUSTOMARY MARINE TENURE customary refers to a system that emerges from traditional roots, constituting part of what is often termed "customary law", which has continuous links with local history as it adapts to changing circumstances; marine refers to the system as dealing with reefs, lagoons, coasts and open sea including islands and islets contained in the overall seaspace; tenure refers to a social process of interacting activities concerning control over territory and access to resources.
- **DEGRADED ECOSYSTEM** an ecosystem whose diversity and productivity have been so reduced that they are unlikely to recover without rehabilitation or restoration measures.
- **DEVELOPMENT** increasing the capacity to meet human needs and improve the quality of human life.

- DISCOUNTING the costs and benefits means putting a computed monetary value to a cost or benefit taking into account the rate of inflation, from the principle that the goods bought today for one dollar will be worth more than the goods bought for one dollar in a year's time, or at some time in the future.
- **ECOSYSTEM** a system of plants, animals and other organisms together with the non-living components of their environment.
- **GREENHOUSE EFFECT** the raising of global temperatures by a blanket of gases around the earth reflecting infra-red radiation back to the earth's surface.
- GREENHOUSE GASES gases which re-radiate infra-red radiation from the earth's surface creating the greenhouse effect, include such gases as water vapour, carbon dioxide, methane, nitrous oxides and chloroflourocarbons.
- LOCAL GOVERNMENT CODE law governing and justifying the actions of local governments and their elected officials in the Philippines. It lays down the policies that seek to institutionalize democracy at the local level. It hopes to complete the initial process of empowering the Filipino people through direct participation in the affairs of government through decentralization, or by allowing them the widest possible space to decide initiate and innovate.
- NON-GOVERNMENTAL ORGANIZATION (NGO) any organization that is not a part of federal, provincial, territorial, or municipal government. Unless otherwise indicated, includes private voluntary organizations, corporations, educational institutions, and labour unions.
- PRIMARY ENVIRONMENTAL CARE (PEC) the process by which communities organize themselves, strengthen their capabilities for environmental care and apply them in ways that satisfy their social and economic needs.

- RA 7160 a Republic Act of the Philippines providing the rules and regulations implementing the Local Government Code of the Philippines.
- **RESOURCE** anything that is used directly by people. A renewable resource can renew itself (or be renewed) at a constant level, either because it recycles quite rapidly (water), or because it is alive and can propagate itself or be propagated (organisms and ecosystems). A non-renewable resource is one whose consumption necessarily involves its depletion.
- **RESOURCE MANAGEMENT ACT** is a New Zealand legislation in 1991, the purpose of which is to promote the sustainable management of natural and physical resources (see Appendix J).
- SANGGUNIAN a term for a legislative body in Philippine Local Government Units (such as province or "lalawigan", city or "lungsod", municipality/towns or "bayan", and villages or "barangay"). Sanggunian comes from the Tagalog word "sangguni" which means refer. It is used with the local LGU term at the appropriate level to form the legislative body of each LGU concerned. For example, the legislative body of the province is the "Sangguniang Panlalawigan", the city is "Sangguniang Panglungsod", the municipality is "Sangguniang Bayan", and the village is "Sangguniang Pambarangay".

TANGATA WHENUA - the Maori guardians of natural resources.

UNCLOS - the first comprehensive, enforceable international environmental law, covering all forms of marine pollution (land-based, atmospheric, shipborne, and originating from activities on the sea bed). It takes an ecosystem approach to all uses of the oceans, and provides an advanced institutional framework for international environmental, scientific and technological cooperation. It is the only convention that provides for a comprehensive, binding system for the peaceful settlement of disputes.

WAAHI TAPU - to the Maori, their kin relationship with all entities within the environment is sacred, and being tapu must be treated with respect following appropriate traditional rituals.