Navigating the Institutional Landscape: Introduction and Overview

Magnus Torell and Albert M Salamanca
ICLARM – The World Fish Center, Malaysia

INTRODUCTION

Southeast Asia is one of the world's most productive areas in terms of fisheries and other coastal resources.These resources are important to the local, regional and national economies. Coastal areas are also the focus for tourism, harbour development, industrial and urban development. Unfortunately, the status of the fisheries and coastal resources in Southeast Asia is reported to be in various stages of degradation and overexploitation (APFIC 1996) and is generally characterized as overfished. In the near-shore areas, overfishing and habitat degradation is already approaching critical levels (Silvestre and Pauly 1997b).

More than 80 percent of the coral reefs in Southeast Asia are at risk. They are considered the most threatened in the world due, in whole or in part, to unbridled coastal development, destructive fishing practices, inland pollution and erosion, marine-based pollution and a burgeoning coastal population (Bryant et al. 1998). Approximately one half of the mangroves in the region have been lost to fish and shrimp ponds during the past 50 years. The Philippines and Thailand have the highest losses at 60-80 percent. Indonesia has lost about 50 percent of its mangroves while Malaysia has lost 30 percent. The seagrasses in the region, among the richest and most diverse in the Indo-West Pacific region, are in a similar condition (Sudara 1997).

Artisanal fisheries have been marginalized economically, socially and politically (Pauly 1997). This marginalization underlies the problems confronting fisheries and coastal resources in the region (Pomeroy and Williams 1994). Small-scale fisheries in Southeast Asia and elsewhere in the developing world are hampered by the lack of adequate infrastructure such as post harvest facilities, roads, markets, information, and communications which are necessary for the fishing industry to thrive and to create value-added products. Physical remoteness compounds problems of data collection which is needed for more effective resource management (Silvestre and Pauly 1997a).

Poverty within the fishery sector is partly a cause and result of environmental and resource degradation. It is also associated with the lack of resources, such as land and capital. According to many studies, people in small coastal villages in the region are among the poorest (Pomeroy and Cruz-Trinidad 1996). Social and political marginalization prevents effective resource management and hampers the participation of stakeholders in the planning and management process (Pauly 1997). Where effective institutions do exist to channel stakeholder participation, enforcement of laws and regulations is sometimes lacking. Ideas, policies, and actions of influential interest groups and uncontrolled economic development have a profound impact on how the environment and its resources are used and on the relationships among the users of those resources. This makes resource management problems not only a technical problem but also a political, social and economic one (King 1998).

The authors of this volume highlight important demands and challenges in fisheries and coastal resources management through case studies in four countries – Cambodia, Indonesia, Philippines and Thailand. The main focus is on the fisheries sector, a major resource in the coastal zone. Since issues in this sector cannot be divorced from issues affecting the integrated management of coastal resources, both are addressed in the discussion. This chapter will summarize important and relevant themes

while subsequent chapters discuss the fisheries management situation vis-à-vis institutional arrangements in each of the countries. An emphasis is placed on issues that are not fully covered in the chapters in this volume.

The Role and Importance of Institutions

The Fisheries Co-management Project of ICLARM and Institute of Fisheries Management and Coastal Community Development (IFM) defines institutions as "the rules of the game in a society; the humanly devised constraints that shape human interactions, and that are affected by social, cultural, economic and political factors" (ICLARM and IFM 1998). Institution and organization are words that are used interchangeably although the latter refers to "groups of individuals bound by common factors to achieve particular objectives" (ICLARM and IFM 1998). If institutions are conceived as the rules of the game in society, organizations are the players (Leach et al. 1999).

Institutions can be formal or informal. Formal institutions are framed in written legislation, administrative regulations, and court decisions (Ostrom 1990). Informal institutions exist as rules and norms by virtue of (oral) tradition, customs and indigenous belief systems which may not be sanctioned, recognized or supported by the state. The nature of enforcement helps further define formal or informal institutions. Formal institutions require exogenous enforcement by a third party organization such as the courts, while informal institutions are enforced endogenously through mutual agreements, or by relations of power and authority between among social actors involved (Leach et al. 1999).

Institutions are important in management because they define the rights and rules of resource use, determine access by groups of people, members of an organization or individuals in a community. Rights are actions that are authorized while rules refer to prescriptions that forbid, permit, or require acts performed in relation to a right (Ostrom 1990).

Analysis of the institutions underlying fisheries and coastal resources management in Southeast Asia is important for several reasons. First, formal institutions play a significant role in the management of fisheries and coastal resources in the region to ensure the transfer (or conservation) of the present resource endowments for future generations (Garcia and Grainger 1997). Second, appropriately crafted formal institutions together with strong political support have been shown to enhance the management of common pool resources such as fisheries (Ostrom 1990). Third, interest in cooperation and interaction between governments, agencies and resource users as well as community involvement in resource management is increasing due to the benefits that accrue from sharing responsibilities and ownership (Pomeroy 1993, 1994; Pomeroy and Williams 1994). Formal institutions provide a structure for cooperation between resource users and government and for participation of local communities and various fisheries organizations as well as other private sector stakeholders in managing natural resources.

In developing countries, institutional weaknesses and constraints are pervasive in the fisheries and coastal resources management sector. Legal, policy and institutional frameworks are not crafted to suit the unique features of fisheries and other coastal resources and this has resulted in mismatches and overlaps. These features include:

- The biological renewability of fish stocks;
- The uncertainty of scientific data on the state of fish stocks; and
- The absence of secure and well-defined property rights governing access to fish stocks (Bailey and Jentoft 1990).

The Case Studies

Each of the case studies provides important insights into the challenges and demands of policy-making for effective fisheries and coastal resources management. While each is distinct, there are common themes that enable us to better understand the intricacies of fisheries and coastal resources management and options to improve the management of resources in these countries. This chapter will summarize important and relevant themes, or strands, of information discussed in succeeding chapters.

The Thailand case study, conducted by the Coastal Resources Institute (CORIN) of the Prince of Songkhla University, reviewed Thailand's legal, institutional and policy framework for managing their fisheries and coastal resources and proffered suggestions to address the problems identified. In the Indonesian case, Drs. Purwaka and Sunoto of the Center for Archipelago, Law and Development Studies selected three cases to explore institutional problems in coastal resource management. They noted that problems arise due to the poor implementation of existing laws and overlapping jurisdictions among government institutions and agencies tasked with implementing coastal and marine resources management.

The Philippine case study, written by Dr. Antonio G.M. La Viña, emphasizes conflict over control of resources, between modes of use, and among different stakeholders and interest groups. In the Cambodian case study, a working group was formed and headed by senior civil servants with representation from international organisations such as Wetlands International and IDRC. The authors returned to the villages to present the results and gather feedback. A workshop was also held for institutional players (i.e. government agencies, bilateral/multilateral development assistance organizations, NGOs and representative from local districts) to present the result of the case study and validate their findings.

Common Trends and Themes

Each of the case studies consists of the following components:

- Discussion of the status of the fisheries and their management issues;
- Discussion of the evolution of existing fisheries policies and laws;
- Case studies of at least three locations; and
- The role of international conventions and regional agreements in management of natural resources and the environment.

Although the layout of the information differs depending on the style and approach of the authors, common trends and themes are apparent. These are the factors that drive the nature of institutional arrangement for fisheries and coastal resources management in Cambodia, Indonesia, Philippines and Thailand. The major points raised in the case studies are summarized in Figure 1.1 along with some of the major influences on institutional arrangements.

Design Problems

The authors raise important issues about the organizations and rules that make up the institutional framework for the management of fisheries and other coastal resources as well as their associated design problems. Design problems refer to the fit between the operational rules and the demands of the resources to be managed: either there are sufficient operational rules or there are not (Oakerson 1992). In the case studies, overlapping jurisdictions of departments, policies and laws; institutional confusion; and unclear mandates for management and the environment are important themes. These institutional problems are a legacy of past institutional arrangements where environmental concerns were ignored (Brookfield and Byron 1993). But the creation of environmental departments to address these environmental concerns did not necessarily lead to overcoming institutional confusion as more confusion and overlapping roles and responsibilities came about when mandates were unclear.

In reality, however, some functional overlap among government agencies tasked with managing certain resource sectors (e.g. tourism, mining, port, fishery etc.) is expected due to the overlapping nature of the resource sectors and their environments. When functional overlaps are properly understood and appropriate interventions are in place to manage overlapping functions, alternative approaches to management problems can be formulated and previously destructive competition can be eliminated.

Ecologically, resource sectors are not clearly bounded systems. They are interlocking and interdependent ecosystems and their existence is dependent on shared and synergistic ecological processes. Ideally, all institutions of government should be examined if the mechanisms for coastal resources management are to be effectively assessed. The example in the Philippines (Table 1.1) mirrors

the functional overlaps among government agencies in the case study countries which have, either directly or indirectly, a role to play in coastal resources management. La Viña (this volume) suggests a review of the formal institutions involved in managing these resources would be similar to reviewing the whole governmental machinery and bureaucracy.

Within the Philippine bureaucracy, there are two main agencies responsible for fisheries and coastal resources management - the Department of Environment and Natural Resources (DENR) and the Department of Agriculture (DA). Overall responsibility for coastal environmental protection and management lies within the DENR, while management, development and conservation of fishery resources is under the DA through its line agency, the Bureau of Fisheries and Aquatic Resources

Figure 1.1 Some of the Major Factors Affecting Institutional Arrangements.

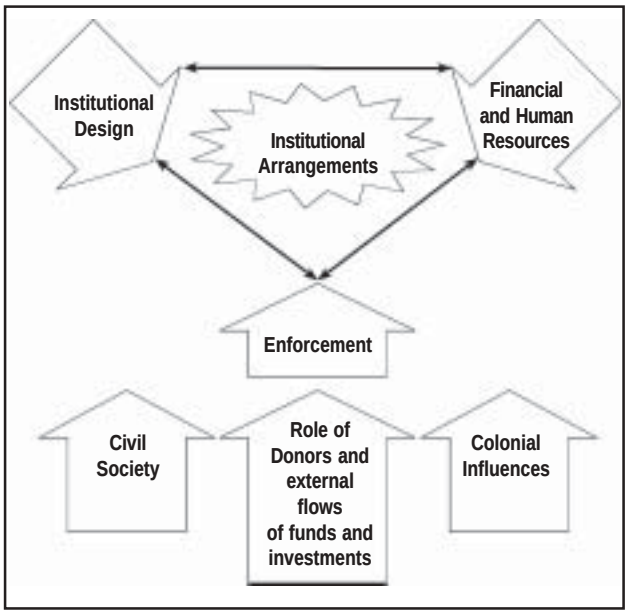

Table 1.1 Functional Overlaps among Agencies Involved in Coastal Resources Management in the Philippines (DENR et al. 1997)

CRM Concerns/ Activities	Agencies Involved
Policy formulation	LGU, FARMC, NGA, DENR
Resource assessments:	
Coastal	DA- BFAR, DENR, PCAMRD
Marine	DA- BFAR, DENR, PCAMRD
Statistics gathering and compilation:	
Fisheries	DA- BAS
Mangroves	DENR
Fishponds	DA- BFAR
Establishment of protected areas	LGU, DA- BFAR, DENR, Congress
Mangrove reforestation	LGU, DENR
Fishery licensing:	
Municipal waters	LGU
Offshore waters	DA- BFAR
Fishery law enforcement	LGU- PNP, PCG, DA- BFAR, deputies
Pollution law enforcement	LGU, PCG, DENR
Land use management	LGU, DENR
Tourism management	LGU, DoT
Reclamation	DENR (LMB and EMB), PEA
Pollution monitoring, including marine waters	LGU, DENR- EMB, PCG
Establishment of municipal/ fishing ports	PFDA, PPA, LGU
Research	DA- BFAR, DA- BAR, PCAMRD

Note: LGU = local government unit; FARMC = Fisheries and Aquatic Resources Management Councils; NGA = National Government Agency; DENR = Department of Environment and Natural Resources; DA BFAR = Department of Agriculture Bureau of Fisheries and Aquatic Resources; DA BAS = Department of Agriculture- Bureau of Agricultural Statistics; PNP = Philippine National Police; PCG = Philippine Coast Guard; PPA = Philippine Ports Authority; PFDA = Philippine Fisheries Development Authority; PCAMRD = Philippine Council for Aquatic and Marine Research and Development; LMB = Land Management Bureau; EMB = Environmental Management Bureau; BAR = Bureau of Agricultural Research; DoT = Department of Tourism.

(BFAR). National fisheries policy and fisheries administrative orders to limit entry into fishing and prohibit certain gear and fishing practices emanate from BFAR. In short, exploitation of fisheries are lodged within the DA while conservation and protection fall under the DENR. Sometimes this division blurs the roles and mandates of these two departments which results in overlaps and institutional confusion.

A review of the Asian Development Bank (ADB)-funded Fisheries Sector Program in 1996, a multi-million dollar project, described the institutional problems as "the lack of a unified, central focus for fisheries management and the institutional weaknesses of existing agencies to cope with the demands and complexities of fisheries management" (PRIMEX and ANZDEC 1996:49). This is due to:

- Fragmentation of functions and a diffusion of responsibilities among a number of departments working in the fisheries sector;
- Institutional weaknesses within BFAR as a result of its conversion from a national line agency into a staff bureau;
- Devolution of authority and responsibility for fisheries from DA-BFAR to the local government units; and
- Lack of skills and financial resources among local government units to carry their devolved functions (PRIMEX and ANZDEC 1996)

Currently, both DENR and DA-BFAR are strengthening their roles in fisheries and coastal resources management by establishing programs and other initiatives as well as making administrative changes in the way the fisheries and other coastal resources are managed. In the early 1990s, DENR established the Coastal Environment Program to broaden its role in coastal resources management. In 1998, DA-BFAR was reconstituted as a line bureau to address the growing role of fisheries and other aquatic resources in food security in an era of resource scarcity and globalized trade. Fisheries issues received increased attention under the New Fisheries Code enacted in 1998, the Agricultural and Fisheries Modernization Act in 1997, and the establishment of large projects funded by loans from multilateral development agencies such as the Fishery Resources Management Program of DA-BFAR.

In Cambodia, unclear policies and guidelines at the ministerial levels, together with lack of resources (e.g. money and well-trained human resources), have led to difficulties for departments and local authorities at the provincial level to properly define their functions and responsibilities. These constrained the implementation of existing legal and institutional frameworks for natural resource management. The legal framework for coastal resources management and the way existing rules are enforced creates a situation that is inadequate to manage the country's coastal resources. The Fiat Law on Fisheries Management and Administration (1987) gives a broad mandate for fisheries administration. It forms the basic legal framework for managing fisheries, other coastal resources, and the coastal environment. All wetlands and seasonally flooded areas, including forests, are considered fishing areas and are known as the "fisheries domain". The Department of Fisheries (DoF) is mandated to manage all activities related to aquatic habitats, fish and other aquatic species, flooded forests, mangroves and swamps. But the Fiat Law together with insufficient institutional mechanisms and financial resources, for instance, is not providing a suitable framework to prevent overexploitation of the fisheries resources. Among other things, it has no provision to limit the size of harvestable marine fish or the protection of endangered species and there is no prohibition on the use of mechanized push gear which destroys the seabed ecosystem.

The relative newness of most laws has affected their implementation as they do not have the rules and regulations needed to guide their implementation, nor institutions and financial resources to actually enforce them. The political context of legal and institutional development in Cambodia is also affected by its history of political turmoil. Currently, the country is in a reconstruction phase and it will take some time before appropriate legal and institutional structures are re-established and fully operational. As Vicheth et al. (this volume) have indicated, institutional development is trying to keep pace with the demands of rapid economic development and this has led to situations where laws are drafted too quickly (mostly by foreign experts) and local commu-

nities and other user groups or the departments that are supposed to oversee their implementation have not been given adequate opportunities to participate.

In Indonesia, two levels of policy formulation is creating problems in project implementation. At the national level, the GBHN (Guidelines of State Policy) prepares Five-year Development Plans (REPELITA) that translate the principles outlined in the GBHN[1]. The REPELITA provides for detailed sectoral development programs and projects which include, among others, coastal and fisheries resources management. REPELITAs can be formulated by either national or provincial governments. Problems occur when these two levels of government do not coordinate their activities. Effective project implementation is hampered when two operational plans have diverging priorities, aims and goals. Parallel to this situation is the relationship between the KANWIL *(kantor wilayah)* and DINAS. KANWILS are working units at the provincial or regional levels established by national government departments to implement their policies and programs. DINAS are implementing agencies established by provincial governments. They may work with KANWIL but the two have no formal structural ties. Each KANWIL is accountable to the national agency, but they are under the coordination of the Governors in the provinces. At the district level, there are also *kantor perwakilan* which work with national KANWIL but are under the coordination of the *bupati*, the head of the district government. The situation becomes problematic when KANWIL and DINAS do not coordinate their activities and pursue different and opposing goals.

Purwaka and Sunoto (this volume) suggest that another major institutional problem in the management of fisheries and coastal resources in Indonesia is the centralized nature of most government regulations. There are no regulations giving legal mandates to provincial and district governments to manage coastal and marine resources, except for small-scale fishing and mining. Thus, regional governments cannot enact measures to manage, protect or conserve the resources within their jurisdictions.

Towards the last quarter of 1999, President Abdurahman Wahid created the Ministry of Marine Exploration and Fisheries to oversee the development and management of the marine environment and its resources, notably fisheries. Its main functions are: harmonization of marine research and exploration, coastal and sea use planning, coastal and marine conservation, protection and surveillance of coastal and marine environments, pollution control, coastal community empowerment, human resources, and institutional capacity building (Dahuri 1999). Whether this new agency will resolve the problems associated with overlapping jurisdictions remains to be seen. Another recent development in Indonesia is the devolution of power, particularly budget and administration, to its districts and provinces (Agence France Presse 2000). The aim is to bestow regional autonomy, but this may have serious ramifications for the use and management of natural resources.

In Thailand, the many plans and committees set up to address the issues affecting the management of natural resources such as fisheries and mangroves have also resulted in overlapping mandates and confusing lines of command. There are many plans at the various ministries, departments, provincial governments, districts, and sub-districts, but sometimes the contents are redundant if not conflicting (Nissapa et al., this volume). For example, in 1992, the Office of the National Environment Board-Ministry of Science Technology and Environment (Office of the National Environment Board-Ministry of Science Technology and Environment 1992:73) stated that:

> *Management of coastal resources in Thailand is not governed by a single, comprehensive law but by many laws governing the use of the various resources. They are generally purely sectoral by design and largely oriented toward resource exploitation for economic benefit. In*

[1] GBHN stands for *Garis-garis Besar Haluan Negara* and is enacted by the People's General Assembly (MPR or *Majelis Permusyawaratan Rakyat)*

many cases, the laws are outdated and have become very complex due to piecemeal legislative amendments and complicated regulatory processes associated with their implementation.

The continued validity of this statement is underpinned by the study of Nissapa et al. (this volume). The nature, therefore, of the legal frameworks supporting the management of coastal resources defines the manner by which government ministries or departments relate to each other in pursuing their mandates. There are a number of ministries and departments involved in planning, managing or using the country's coastal resources. Among these are the National Economic and Social Development Board, the Office of Environmental Policy and Planning, the Ministry of Agriculture and Cooperatives, Ministry of Interior, Ministry of Science, Technology and Environment, Ministry of Mining, Ministry of Transport and Communication, and Ministry of Public Health (Pintukanokl and Boromthanarat 1993). Furthermore, with the passage of the new Thai Constitution in 1997, each of the ministries is further challenged to seek cooperation from local resource users in planning and management of natural resources.

Enforcement

Poor enforcement of existing legislation has been shown to be a major problem, although it is also possible to have well-designed rules but poor enforcement. Wasserman (1994:15) defined enforcement as "the use of legal tools to assist in and compel compliance with environmental requirements, and in some contexts to establish liability or responsibility for harm to the public or environment from polluting activities".

Key policies and institutional arrangements have been enacted (Table 1.2) in the case study countries but enforcement is ineffective. The importance of environmental issues is often recognized and articulated as policy, but specific provisions are often incongruent, if not completely divergent, as shown in the quest for vigorous economic growth without due regard to ecological and environmental sustainability. The environmental sustainability index[2] of these countries except for Cambodia is relatively low. Thailand has 45.2; Indonesia, 42.6; and Philippines, 35.7. No data is available for Cambodia (Global Leaders of Tomorrow Environment Task Force et al. 2001). All case study countries have adopted blueprints on how to attain ecologically and economically sustainable development. Each interprets Agenda 21, which the Rio Convention introduced in 1992, from national perspectives. They have developed national environmental action plans and biodiversity action plans to conserve biodiversity and use their resources sustainably. However, there are few signs indicating that the current state of the fisheries and coastal resources is improving.

Political will to carry out environmental legislation among prevailing development and social agendas determine whether fisheries and coastal resources are ecologically sustained and the problems are properly addressed. It is important that government departments coordinate plans and programs to maximize output and achieve objectives in the coastal zone where ecosystems are highly interdependent and uses are interlocking. While a weak state is likely to fail in the exercise of its main function of stewardship and management of these resources (Marriott 1997), a strong state with a poorly designed and outdated planning mechanisms can be in no better position.

Financial and Human Resources

Notwithstanding the good intentions of governments in the case study countries, lack of skills and financial resources also impose constraints on effective enforcement and management. Generally, enforcement is very costly and takes a quarter to over half of all public expenditures (Sutinen and Viswanathan 1999). All the case studies mention the shortage of skills in government departments tasked with fishery enforcement and management as a

[2] This is "a measure of the overall progress towards environmental sustainability developed for 122 countries… A high ESI rank indicates that a country has achieved a higher level of environmental sustainability than most of the countries; a low ESI rank signals that a country is facing substantial problems in achieving environmental sustainability along multiple dimensions" (Global Leaders of Tomorrow Environmental Task Force et al. 2001).

major issue. There are insufficient funds to hire skilled personnel and to finance routine enforcement operations in countries with such extensive coastlines.

Monitoring a long coastline requires a functioning monitoring, control and surveillance system (MCS). An MCS includes an infrastructure of high-speed vessels, fuel, radar and weapons. It can also require the periodic strengthening of legislation to eliminate loopholes. Implementing an MCS requires substantial investment and the establishment of necessary management systems to operate it. Once established, high operational and maintenance costs are expected. But MCS systems should not be established in all sector departments. Instead, resources should be concentrated in one well-equipped multipurpose monitoring entity and could be implemented jointly for fisheries, pollution control, customs and other agencies.

As a result of the many demands, bleak realities confront fisheries and coastal resource management. Coastal poverty remains widespread and population pressure is still growing (The World Bank 2000). Economic difficulties brought about by the financial crisis of 1997 affected countries throughout South-east Asia while civil and political instability continues to be a major concern for many countries. The desire to revitalize sluggish economies to create jobs and address widespread poverty dominates many political agendas. This has an impact on the ecological sustainability of fisheries and coastal number of people depend for their livelihoods.

Conflict

The problematic institutional arrangements governing fisheries and coastal resources in these countries has resulted in institutional confusion that weakens the government's ability to manage resources wisely and to respond adequately when need arises. It erodes the ability of institutional arrangements to adapt to changing circumstances and the complex nature of fisheries resources. One consequence of the general failure to enforce agreed institutional arrangements is the increasing number of conflicts. There have been violent clashes between users, and between users and other stakeholders, such as the case in Southern Thailand (Hutasingh and Suksamran 1999; Mukem 1999). Tyler (1999:264) observed that "There is ample evidence from ... specific policies, government programs, and their implementation have generated or aggravated conflicts, even when the intention was to reduce the conflict".

Conflict occurs when users no longer cooperate or abide by established rules and conduct with respect to the use of a particular resource (Oakerson 1992). There are three kinds of conflict in the use and management of coastal resources: conflict between users within one sector, between users of different resources, and conflict between government agencies administering programs or projects related to the coast. Conflicts over natural resources can occur at many levels and have class and political dimensions (Buckles and Rusnak 1999).

In Southern Thailand, small-scale fishers attacked large-scale trawlers who were fishing in nearshore waters, where they are not allowed. On top of being trawling-free zones, these trawlers use fine mesh nets and electric lights that deplete local anchovy resources (Hutasingh and Suksamran 1999; Mukem 1999). In early 1998, The Nation, one of Thailand's two English language dailies, reported that six people died when Thai and Indonesian fishers clashed in the Java Strait because the Thai trawlers were fishing illegally using banned fishing gear (Harsono 1998). There has been an increase in the number of conflicts and dire predictions are made about "fish wars" unless efforts are made to stem the tide of resource depletion and scarcity (Dupont 1999). Authors of earlier studies and commentaries have already pointed out that social, civil and political anarchy will result from resource scarcity and environmental insecurity (Homer-Dixon 1991; Prins 1993; Homer-Dixon 1994; Kaplan 1994). At the level of nation-states, conflicts are likely to result from the convergence of several factors such as overlapping territorial jurisdictions, economic ambitions, competition, nationalism, militarization, superpower involvement, and environmental degradation (Valencia 1990).

In the Philippines, resource depletion and environmental degradation are largely the result of

Table 1.2 Indicative List of Major Legislation Relevant to Coastal Resources Management in the Case Study Countries.

Cambodia (Source: Vicheth et al., this volume)	**Indonesia** (Source: Purwaka and Sunoto, this volume Kusuma-Atmadja and Purwaka 1996)	**Philippines** (Source: DENR et al. 1997)	**Thailand** (Source: Tasneeyanond and Rubthong 1991)
Sub-decree No. 06 on River Navigation, 1986	Guidelines of State Policy (GBHN)	PD 705 - Revising Presidential Decree 389, otherwise known as the Forestry Reform Code of the Philippines	Agricultural Economics Act, 1979 (AEA)
Law on Fisheries Management and Administration, or Fisheries Law, 1987	Act No. 5 of 1967 on forestry	PD 825 - Providing Penalty for Improper Disposal of Garbage and Other Forms of Uncleanliness and for Other Purposes.	Agricultural Land Management Act, 1974 (ALMA)
Law on Forestry Management, or Forestry Law, 1988	Act No. 11 of 1967 on mining	PD 856 - Sanitation Code of the Philippines	Agricultural Land Reform Act, 1975 (ALRA)
Sub-decree on Private Transport Services, 1991	Act No. 1 of 1973 on continental shelf	PD 979 - Marine Pollution Decree	Building Controls Act, 1979 (BCA)
Royal Decree on the Creation and Designation of Protected Areas, 1993	Act No. 5 of 1974 on the basic provisions of regional government	PD 984 - National Pollution Control Decree of 1976	EIA Law under NEQA
Law on Land Management, Urbanization and Construction, 1994	Act No. 4 of 1982 on the Basic Provisions for the Management of the Living Environment	PD 1067 - The Water Resources Code	Electricity Generating Authority of Thailand Act, 1968 (EGAT)
Law on Investment, 1994	Act No. 5 of 1983 on Indonesia's EEZ	PD 1152 - Philippine Environment Code	Fisheries Act, 1947 (FISHA)
Law on Environmental Protection and Natural Resources Management, 1996	Act No. 9 of 1985 on fisheries and government regulation	PD 1586 - Philippine Environment Impact Assessment Act	Forest Act, 1941 (FOR A)
Royal Decree on the Establishment of the Ministry of Tourism, 1997	Act No. 17 of 1985 on ratification of the 1982 UNCLOS	RA 5173 - creates the Philippines Coast Guard	Hotel Act, 1936
Law on Financing and Property Regime in Provinces-Municipalities, 1998	Act No. 5 of 1990 on conservation of natural resources and their ecosystems	RA 6975 - An act establishing the Philippine National Police under a reorganized Department of Interior and Local Government, and for other purposes	Industrial Estate Authority of Thailand Act, 1979 (IEATA)
	Act No. 21 of 1992 on navigation		Industrial Works Act, 1969 (IWA)
	Act No. 24 of 1992 on spatial planning		Land Code of Thailand, 1954 (LCT)
	Act No. 6 of 1996 on Indonesian waters		Land Development Act, 1983 (LDA)
			Minerals Act, 1967 (MINERA)
			National Economic and Development Act, 1978 (NESDA)

(next page ...)

Note: PD = Presidential Decree; RA = Republic Act; EO = Executive Order.

Table 1.2 Indicative List of Major Legislation Relevant to Coastal Resources Management in the Case Study Countries (continued).

Cambodia (Source: Vicheth et al., this volume)	**Indonesia** (Source: Purwaka and Sunoto, this volume Kusuma-Atmadja and Purwaka 1996)	**Philippines** (Source: DENR et al. 1997)	**Thailand** (Source: Tasneeyanond and Rubthong 1991)
	Act No. 23 of 1997 on Environmental Management Government regulation No. 20 of 1990 on water pollution control Act No. 29 of 1986 on Analysis of Impact Upon the Environment Presidential Decree No. 32/1990	RA 6969 - Toxic Substances and Hazardous and Nuclear Waste Control Act RA 7160 - Local Government Code of 1991 RA 7076 - An Act Creating A People's Small Scale Mining Program And For Other Purposes RA 7586 - National Integrated Protected Areas System Act RA 7942 - The Philippine Mining Act RA 3931 - Pollution Control Law RA 8435 - Agriculture and Fisheries Modernization Act of 1997 (AFMA) RA 8550 - The Philippine Fisheries Code of 1998 EO 114 - constitutes the Presidential Committee on Illegal Fishing and Marine Conservation EO 117 - establishes the Inter-Agency Task Force for Coastal Environment Protection EO 240 (s1995) - Law creating the FARMCs EO 292 (s1987) - Administrative Code of 1987	National Environmental Quality Act, 1975 (NEQA) National Forest Reserves Act, 1964 (NFRA) National Parks Act, 1961 (NPA) Navigation in Thai Waters Act, 1913 (NTWA) Petroleum Act, 1971 (PETROLA) Public Health Act, 1941 (PHA) Public Irrigation Act, 1942 (PIA) Real Estate Development Control (REDC) under Revolutionary Decree No. 286, 1972 Tourism Authority of Thailand Act, 1979 (TATA) Town and Country Planning Act, 1975 (TCPA) Water Quality Standards set by virtue of NE Wild Animals Protection and Reserves Act (WAPRA) Enhancement and Conservation of National Environment Quality Act 1992

Note: PD = Presidential Decree; RA = Republic Act; EO = Executive Order.

poor institutional arrangements to manage fisheries and coastal resources. Despite this, there have been a number of successful local management systems exemplified by the case of Apo Island Marine Sanctuary. This was established during a time when unsupportive national laws and legal frameworks that provide support for local initiatives in managing common pool resources were not present. The National Integrated Protected Area System (NIPAS) law and the Local Government Act were only introduced later. The same can be said of Indonesia where a confused institutional arrangement has led to a resurgence in local and traditional management systems, particularly the *sasi*. In certain coastal communities, the resilience of the *sasi* system holds the key to the successful management of coastal resources (Novacsek and Harkes 1998). But such resilience will be tested with the onslaught of globalization and other associated external pressures.

Colonial Influence

The strategic location of Southeast Asia makes it a crossroads for the exchange of goods, knowledge, religious, political and social trends. The quest for commercially valuable natural resources brought European nations to the region. Spaniards and Americans colonized the Philippines. The Portuguese set up a number of trading posts in Malakka, the Moluccas, East Timor and Macau. The Dutch were dominant in Indonesia while the French focused on Cambodia, Laos and Vietnam. The British established themselves in Malaysia, Singapore, Hong Kong and Burma.

The development of laws and structures for public administration reflected those of the colonial power. Bryant (1998:30-31) pointed out that "The colonial powers reorganised and expanded pre-colonial patterns of resource use so that by the end of colonial rule, commercial resource exploitation was central to economic life in the region". This was manifested in several political and administrative changes. Chief among these were:

- The administration of states along functionally defined lines;
- The exercise of territorial political control, both external and internal; and
- The introduction of modern (western) science and technology in terms of
  (i) Increased resource extraction, and
  (ii) Scientific resource management.

Thailand is a unique case in the region. Thailand was never formally colonized (Winichakul 1994:13), however the country underwent many changes as it modernized along western lines. Administrative structures were adapted in order to take part in trade and development and to withstand the threat of being colonized.

The creation of natural resource departments along functional lines, the development of public administration and the nature of resource politics as a whole had various implications for resource management during colonial times because they have enhanced efficiency in resource extraction. Efficiency was attained by the recruitment of professional staff with specialized knowledge. Specialization fostered parochialism and a lack of appreciation for the interdependence of issues affecting resource management. Soon the functional development of departments and the attitudes that developed among personnel resulted in conflicts between departments (Bryant 1998). Bryant (1998:34) noted that "such conflict was ubiquitous…and shaped not only the ways in which state policies were devised and implemented, but also the broader relationship between state and civil society". This conflict came as a result of bureaucratic rivalry and "basic disjunction between the ways in which the colonial state organised its administrative services … and the actual conditions of the resource base itself - that is, the 'political/ administrative world' did not coincide with the 'real resource world' that it sought to administer".

The colonial powers controlled the resources in which they were interested. Resources were catalogued, boundaries established and political control was exercised over them. Fixing the borders provided for greater control by the state and reinforced the power of ethnic majorities. Large-scale resource extraction and expedited commercial expansion was made possible by the use of modern science and technology, railways, steamboats and the telegraph. The same infrastructure aided resource extraction by ensuring that natural resources were transferred from production areas to consumers and by facilitat-

ing the movement of labour from one area to another. Aside from boosting production and extraction, the introduction of western science and technology also led to the repression and gradual demise of indigenous resource management systems (Bryant 1998) as these systems were believed to be primitive and unscientific.

Several authors (e.g. Blaikie and Brookfield 1987; Lynch and Talbott 1995; Bryant 1998) refer to these issues because of the pervasive influence of the colonial period on the development of laws and institutions related to natural resources management. The institutional changes that took place in colonial times form the backdrop by which laws and institutions developed. It is therefore important to understand history if one wishes to appreciate how these institutions evolved and how they will survive in the future. History is also a guide in understanding how current problems in fisheries and coastal resources management came about.

Role of Donors

Bilateral and multilateral assistance is an important component for the development of Cambodia, Indonesia, Philippines and Thailand (Table 1.3). Among these countries, Cambodia by far is the most aid-dependent. Bilateral and multilateral donors have important roles to play in fisheries and coastal resource management as well as in other sectors of development. Aside from providing financial assistance, guidance is also provided on how to implement programmes of national priority. Ideally, interventions by donor agencies should also help to strengthen capacity to undertake multiple resources planning and management as well as encouraging private and international investments.

In many countries, foreign assistance has resulted in the establishment of ad hoc legal and institutional structures, a lack of coordination in development and a mix of institutional cultures based on the systems and experiences of the donors and their consultants. This is particularly evident in Cambodia. Donors often have different systems and requirements for program implementation. This adds to the problems of developing a coherent structure. The laws might be well constructed but the national or local support for the law and its provisions is absent. The institutions thus developed are alienated from traditions and the resulting patchwork of laws and institutions is not conducive to integrated management.

Another result of this patchwork development is that legal and institutional mandates do not match the scope of the projects to be implemented. For example, in Cambodia the law clearly states that all wet and flooded areas are considered fisheries domain and are under the authority of the Department of Fisheries (DoF). However, the Mekong River Commission's (MRC) Inventory and Management of Cambodian Wetlands Programme is coordinated by the Ministry of Environment, despite the fact that wetlands in general are supposed to be under the DoF according to the Fiat Law on Fishery of 1987. This indicates how existing modalities are neglected or unappreciated by donors. This adds to institutional confusion.

Role of Civil Society

The involvement of civil society, or actors outside the government structures in fisheries and coastal resources management in Southeast Asia is increasing. Non-government organizations (NGOs), in particular, together with the private sector are an important form of civil society representation especially in the development arena. Civil society encompasses "the gamut of organizations that political scientists traditionally label interest groups—not just advocacy NGOs but also labor unions, professional associations (such as those of doctors and lawyers), chambers of commerce, ethnic associations, and others. It also incorporates the many other associations that exist for purposes other than advancing specific social or political agendas, such as religious organizations, student groups, cultural organizations (from choral societies to bird-watching clubs), sports clubs, and informal community groups" (Carothers 2000).

Interest groups of various types serve in various ways as the initiators of certain institutional arrangements through their advocacies and interest-based pressure and can also be critics that exert pressure on the state to be responsible in the implementation of their policies. Or at times, they are implementors of state-supported activities, which led to the

Table 1.3 Aid Dependency (The World Bank 2000).

	Net official development assistance and official aid		Aid per capita		Aid dependency ratios							
	$ millions		$		Aid as % of GNP		Aid as % of gross domestic investment		Aid as % of imports of goods and services		Aid as % of central government expenditures	
	1993	1998	1993	1998	1993	1998	1993	1998	1993	1998	1993	1998
Cambodia	306	337	30	29	15.2	11.9	106.2	78.3	50.3	24.9	—	—
Indonesia	2,013	1,258	11	6	1.3	1.5	4.4	9.6	4.6	2.3	7.6	7. 5
Philippines	1,486	607	22	8	2.7	0.9	11.4	4.5	6.6	1.4	14.8	—
Thailand	610	690	11	11	0.5	0.6	1.2	2.5	1.1	1.2	3.1	3.3

Note: **Net official development assistance** consists of disbursements of loans made on concessional terms (net of repayments of principal) and grants by official agencies of the members of DAC [development assistance committee], by multilateral institutions, and by certain Arab countries to promote economic development and welfare in recipient economies listed as developing by DAC. Loans with a grant element of at least 25 percent are included in ODA, as are technical cooperation and assistance. **Net official aid** refers to aid flows, net of repayments, from official donors to the transition economies of Eastern Europe and the former Soviet Union and to certain advanced developing countries and territories as determined by DAC. Official aid is provided under terms and conditions similar to those for ODA. **Aid per capita** includes both ODA and official aid. **Aid dependency ratios** are calculated using values in U. S. dollars converted to official exchange rates.

formulation or reformulation of institutional arrangements. In Southeast Asia, NGOs, the private sector, farmer associations, etc. supplement the activities of the state in resource management. In the fisheries sector, several resource management activities that foster community participation representing the agendas of grassroots organizations, cooperatives and other marginalized groups have been initiated by NGOs and other interest groups. Experiments in community-based coastal resources management initiatives in the region have been facilitated by NGOs, many of which have been successful. NGOs are prominently involved in development work in Thailand and the Philippines while they are increasingly playing important roles in Vietnam and Cambodia.

Concluding Remarks

History provides an interesting perspective on the development of institutions that manage fisheries and coastal resources as it shows how earlier choices and constraints have led to today's resource management problems. Long-term impact on the environment was not considered and there was little awareness of the consequences. Only recently has environmental conservation and fisheries management taken centre-stage as a development concern especially after UNCED (see also Sorensen 1997). Despite the realization in the importance of conservation and good management, institutional problems are still encountered. Environmental concerns are a recent phenomenon in a public administration structure that is based on production and resource extraction. As the case studies illustrate, overlapping mandates, institutional confusion and conflict have become the dominant features in the administration of fisheries and other coastal resources.

But overlaps and conflicts in responsibilities, mandates and jurisdictions cannot be totally prevented as these are expected especially when government business is organized by function/purpose (e.g. enforcement, production, conservation, exploration, etc.), by territory (e.g. region, province, or municipality), by client (e.g. fishers, farmers, small business, youth etc.), or resource sector (e.g. fisheries, forestry etc.). The key is how coordinating mechanisms are crafted to reflect the on-going dynamics among various actors and the level of

political will extended so that these coordinating mechanisms can take place.

Authors of the case studies describe institutional arrangements for fisheries and coastal resources management as complex and affected by various factors, some of which are intractable and entrenched in the politics and economy of the country. There is no single solution to the institutional problems affecting fisheries and coastal resources management. Neither is there a solution that is broad based across the region. If there is a solution, it must take into consideration the capabilities of those who will be responsible for implementation and must provide for material benefits to the poor and marginalized.

References

Agence France Presse. 2000. Indonesia embarks on historic decentralisation plan. Agence France Presse. [Online]. Available: http://www.icsea.or.id/sea-span/message.cfm?ID=374 [2000, 17 January].

APFIC. 1996. Summary report of the APFIC Symposium on Environmental Aspects of Responsible Fisheries, Seoul, Republic of Korea RAP Publication 1996/42. Asia Pacific Fisheries Commission, Bangkok, Thailand.

Bailey, C. and S. Jentoft. 1990. Hard choices in fisheries development. Marine Policy 14:333-344.

Blaikie, P.M. and H.C. Brookfield. 1987. Land degradation and society. Methuen, London.

Brookfield, H. and Y. Byron. 1993. South-East Asia's environmental future: the search for sustainability. United Nations University Press and Oxford University Press, Tokyo.

Bryant, D.G., L. Burke, J. McManus and M. Spalding. 1998. Reefs at risk: a map-based indicator of threats to the world's coral reefs. World Resources Institute, Washington, D.C.

Bryant, R.L. 1998. Resource politics in colonial South-East Asia, p. 29-50. ***In*** V. T. King (ed.) Environmental Challenges in South-East Asia. Curzon Press, Surrey.

Buckles, D. and G. Rusnak. 1999. Conflict and collaboration in natural resource management, p. 1-9. ***In*** D. Buckles (ed.) Cultivating Peace: Conflict and Collaboration in Natural Resource Management. International Development Research Centre and World Bank Institute, Ottawa.

Carothers, T. 2000. Think again: civil society. Foreign Policy. [Online]. Available: http://www.foreignpolicy.com/articles/winter1999-2000/ Thinkagain/carothers.html [2000, 10 August].

Dahuri, R. 1999. Experience with coastal and marine protected area planning and management in Indonesia. Paper presented at the Regional Workshop on Coastal and Marine Protected Area Planning and Management. ADB 5712-REG Coastal and Marine Environmental Management in the South China Sea, Phase 2. 6-8 March 2000, Sanya City, Hainan Province, People's Republic of China. Asian Development Bank.

DENR, DILG, DA-BFAR and CRMP. 1997. Legal and Jurisdictional Guidebook for Coastal Resource Management in the Philippines. Coastal Resource Management Project, Manila.

Dupont, A. 1999. There's a catch to world security. The Bangkok Post. [Online]. Available: http://www.bkkpost.samart.co.th/news/BParchive/[2000, 30 July].

Garcia, S.M. and R. Grainger. 1997. Fisheries management and sustainability: A new perspective of an old problem?, p. 631-654. ***In*** D. A. Hancock, D. C. Smith, A. Grant and J. Beumer. (eds.) Developing and sustaining world fisheries resources : the state of science and management. Second World Fisheries Congress proceedings. CSIRO Publishing, Collingwood, Victoria.

Global Leaders of Tomorrow Environment Task Force, Yale Center for Environmental Law and Policy and Center for International Earth Science Information Network 2001. 2001 Environmental Sustainability Index. [Online]. Available: http://www.ciesin.columbia.edu/ indicators/ESI [2001, 12 February 2001].

Harsono, A. 1998. Six dead in clash between fishermen. The Nation. [Online]. Available: http://202.44.252.4/nationnews/1998/199804/19980408/24872.html [2000, 16 April].

Homer-Dixon, T. 1991. On the threshold: Environmental changes and causes of acute conflict. International Security 16:76-116.

Homer-Dixon, T.F. 1994. Environmental scarcities and violent conflict: evidence from cases. International Security 19:5-40.

Hutasingh, O. and N. Suksamran. 1999. Coastal residents blast anchovy boats. The Bangkok Post. [Online]. Available: http://www.bkkpost.samart.co.th/news/BParchive/ [1999, 14 June].

ICLARM and IFM. 1998. Analysis of co-management arrangements in fisheries and related coastal resources: a research framework. ICLARM, Manila.

Kaplan, R.D. 1994. The Coming Anarchy. The Atlantic Monthly 273:44-76.

King, V.T. 1998. Introduction: Human-environment interactions in South-East Asia, past and present, p.1-25. ***In*** V. T. King (ed.) Environmental Challengeces in Southeast-Asia. Curzon Press, Surrey.

Kusuma-Atmadja, M. and T.H. Purwaka. 1996. Legal and institutional aspects of coastal zone management in Indonesia. Marine Policy 20(1): 63-86.

Leach, M., R. Mearns and I. Scoones. 1999. Environmental entitlements: dynamics and institutions in community-based natural resource management. World Development 27:225-247.

Lynch, O.J. and K. Talbott. 1995. Balancing Acts: Community-Based Forest Management and National Law in Asia and the Pacific. World Resources Institute, Washington, D.C.

Marriott, S.P. 1997. Fisheries institutional reform in developing countries. Marine Policy 21:435-444.

Mukem, E. 1999. Bid to end anchovy fishing row. The Bangkok Post. [Online]. Available: http://www.bkkpost.samart.com.th/news/BParchive/[2000, 16 April].

Novacsek, I. and I. Harkes. 1998. An Institutional Analysis of Sasi Laut in Maluku, Indonesia. Working Paper No. 39. International Center for Living Aquatic Resources Management, Manila.

Oakerson, R.J. 1992. Analyzing the commons: a framework, p. 41-59. ***In*** D. W. Bromley (ed.) Making the Commons Work: Theory, Practice, and Policy. International Center for Self-Governance, San Francisco.

Office of the National Environment Board-Ministry of Science Technology and Environment. 1992. The integrated management plan for Ban Don Bay and Phangnga Bay, Thailand. ICLARM Technical Report 30.

Ostrom, E. 1990. Governing the commons: the evolution of institutions for collective action. Cambridge University Press, Cambridge.

Pauly, D. 1997. Small-scale fisheries in the tropics: Marginality, Marginalization, and some implications for fisheries management. ***In*** E. K. Pikitch, D. D. Huppert and M. P. Sissenwine (eds.) Global Trends: Fisheries Management, Vol. 20. American Fisheries Society, Bethesda, Maryland.

Pintukanokl, A. and S. Boromthanarat. 1993. National Coastal Resources Management in Thailand, p. 677-690 Proceedings of the World Coast Conference 1993, Vol. 2.

Pomeroy, R.S. 1993. A research framework for coastal fisheries co-management institutions. NAGA, The ICLARM Quarterly 1.

Pomeroy, R.S. and M.J. Williams. 1994. Fisheries co-management and small-scale fisheries: a policy brief. Manila Philippines ICLARM 15.

Pomeroy, R.S. and A. Cruz-Trinidad. 1996. Socioeconomic aspects of artisanal fisheries in Asia, p. 239-258. ***In*** S. S. de Silva (ed.) Perspectives in Asian Fisheries: A Volume to Commemorate the 10th Anniversary of the Asian Fisheries Society. Asian Fisheries Society, Makati City.

Pomeroy, R.S. (ed.) 1994. Community management and common property of coastal fisheries in Asia and the Pacific: concepts, methods and experiences, pp. 1-189. ICLARM, Manila, Philippines.

PRIMEX and ANZDEC. 1996. Fisheries resource management project, Philippines (ADB TA No. 2236-PHI) Final Report. PRIMEX and ANZDEC, Manila.

Prins, G. 1993. Threats without enemies: facing environmental insecurity. Earthscan Publications, London.

Silvestre, G. and D. Pauly. 1997a. Management of tropical coastal fisheries in Asia: an overview of key challenges and opportunities, p. 8-25. ***In*** G. Silvestre and D. Pauly (eds.) Status and management of tropical coastal fisheries in Asia. ICLARM Conference Proceedings 53. ICLARM, Manila.

Silvestre, G. and D. Pauly, (eds.) 1997b. Status and management of tropical coastal fisheries in Asia. ICLARM Conference Proceedings 53, ICLARM, Manila.

Sorensen, J. 1997. National and international efforts at integrated coastal management: Definitions, achievements, and lessons. Coastal Management 25:3-41.

Sudara, S. 1997. Marine fisheries and environment in the ASEAN region. RAPA, Seoul, Republic of Korea.

Sutinen, J.G. and K.K. Viswanathan. 1999. A socio-economic theory of regulatory compliance. International Journal of Social Economics 26:174-193.

Tasneeyanond, P. and S. Rubthong. 1991. Legal and institutional issues affecting the management of Thailand's coastal region: a case study of Phuket Province. Thailand Coastal Resources Mananagement Project, Office of the National Environment Board, The University of Rhode Island, Department of Technical and Economic Cooperation, United States Agency for International Development, Bangkok.

The World Bank. 2000. World development indicators 2000. The World Bank, Washington, D.C.

Tyler, S.R. 1999. Policy implications of natural resource conflict management, p. 263-280. ***In*** D. Buckles (ed.) Cultivating Peace: Conflict and Collaboration in Natural Resource Managemetn. International Development Research Centre and World Bank Institute, Ottawa.

Valencia, M.J. 1990. International conflict over marine resources in South-East Asia: trends in politization and militarization, p. 94-144. ***In*** M. J. Valencia and L. T. Ghee (eds.) Conflict over Natural Resources in South-East Asia and the Pacific. Oxford University Press, Singapore.

Wasserman, C.E. 1994. The principles of environmental enforcement and beyond: building institutional capacity, p. 15-40. ***In*** J. Gerardu and C. Wasserman (eds.) Third International Conference on Environmental Enforcement, Vol. 1. Conference Proceedings. U.S. Environmental Protection Agency;Ministry of Housing, Spatial Planning and the Environment, The Netherlands;United Nations Environment Programme, IE/PAC; World Wildlife Fund, United States; Procuraduria Federal de Proteccion al Ambiente, SEDESOL, Mexico, Oaxaca, Mexico.

Winichakul, T. 1994. Siam mapped: a history of the geo-body of a nation. University of Hawaii Press, Honolulu.