

SAMUDRA Monograph

Time for a Sea Change

A Study of the Effectiveness of Biodiversity
Conservation Measures and Marine Protected Areas
Along Southern Thailand's Andaman Sea Coastline



Ravadee Prasertcharoensuk,
Jonathan Shott,
Duangkamol Sirisook Weston and
Wichoksak Ronarongpairee



International Collective in Support of Fishworkers
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Written by

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Acronyms and Abbreviations

bn	billion
CBD	Convention on Biological Diversity
CHARM	Coastal Habitats and Resources Management
CMF	community mangrove forest
DEQP	Department of Environmental Quality Protection
DMCR	Department of Marine and Coastal Resources
DoF	Department of Fisheries
DoNP	Department of National Parks, Wildlife and Plant Protection
FAO	Food and Agriculture Organization of the United Nations
FSF	Federation of Southern Fisherfolk
GT	gross tonnage
ha	hectare
hp	horsepower
IBA	Important Bird Area
IPA	Important Plant Area
JoMPA	Joint Management of Protected Areas
km	kilometre
m	metre
mn	million
MoAC	Ministry of Agriculture and Co-operation
MoNRE	Ministry of Natural Resources and the Environment
NGO	non-governmental organization
ONEP	Office of Natural Resources and Environmental Policy and Planning
PCD	Pollution Control Department
SDF	Sustainable Development Foundation
SFS	small-scale fisherfolk society
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
US	United States of America

PREFACE

As the conservation of marine resources becomes a growing global priority, the concept of marine protected areas (MPAs) is being widely propagated. Since most MPAs are located in coastal areas of great biodiversity, their development has direct relevance and concern to the livelihoods, culture and survival of small-scale and traditional fishing and coastal communities.

An MPA is considered to be any coastal or marine area in which certain uses are regulated to conserve natural resources, biodiversity, and historical and cultural features. The Convention on Biological Diversity (CBD) defines an MPA as “any defined area within or adjacent to the marine environment, together with its overlying waters and associated flora, fauna, and historical and cultural features, which has been reserved by legislation or other effective means, including custom, with the effect that its marine and/or coastal biodiversity enjoys a higher level of protection than its surroundings”.

As an area-based management tool, MPAs are considered useful in implementing both the ‘ecosystem approach’ and the ‘precautionary approach’, since their design involves managing pressures from human uses by adopting a degree of protection, which can range from strict protection, where all use activities are barred, to less stringent measures like sanctioning areas where multiple uses are allowed and regulated.

In 2004, the Seventh Meeting of the Conference of Parties (COP7) to the CBD agreed that marine and coastal protected areas, implemented as part of a wider marine and coastal management framework, are one of the essential tools for the conservation and sustainable use of marine and coastal biodiversity. The meeting noted that marine and coastal protected areas have been proven to contribute to (a) protecting biodiversity; (b) sustainable use of components of biodiversity; and (c) managing conflict, enhancing economic well-being and improving the quality of life. Following on this, Parties to the CBD subsequently agreed to bring at least 10 per cent of the world’s marine and coastal ecological regions under protection by 2012. In 2006, only an estimated 0.6 per cent of the world’s oceans were under protection.

Protected areas need to be seen not just as sites copious in biodiversity but also as regions historically rich in social and cultural interactions, which often have great importance for local livelihoods. In practice, however, MPAs have increasingly

become tools that limit, forbid and control use-patterns and human activity through a structure of rights and rules. While numerous studies have examined the ecological and biological impacts of MPAs, few have focused on their social implications for communities and other stakeholders in the area who depend on fisheries resources for a livelihood. A particular MPA may be both a “biological success” and a “social failure”, devoid of broad participation in management, sharing of economic benefits, and conflict-resolution mechanisms. Clearly, for MPAs to be effectively managed, it is essential to consider the social components needed for the long-term benefits of coastal communities.

It is in this context that the International Collective in Support of Fishworkers (ICSF) commissioned studies in six countries to understand the social dimensions of implementing MPAs, with the following specific objectives:

- to provide an overview of the legal framework for, and design and implementation of, MPAs;
- to document and analyze the experiences and views of local communities, particularly fishing communities, with respect to various aspects of MPA design and implementation; and
- to suggest ways in which livelihood concerns can be integrated into the MPA Programme of Work, identifying, in particular, how local communities, particularly fishing communities, could engage as equal partners in the MPA process.

The studies were undertaken in Brazil, India, Mexico, South Africa, Tanzania and Thailand. Besides the Mexico study, the rest were based on primary data collected from selected MPA locations within each country, as listed in the table opposite.

The studies were undertaken in the context of Programme Element 2 on governance, participation, equity and benefit sharing in CBD’s Programme of Work on Protected Areas (PoW PA, also referred to as PA PoW), which emphasizes the full and effective participation of local and indigenous communities in protected area management. Taken together, the studies provide important insights into the MPA implementation process from a fishing-community perspective, particularly on issues of participation.

It is clear from the studies that the most positive examples of livelihood-sensitive conservation come from Brazil, where communities are in the forefront of demanding, and setting up, sustainable-use marine extractive reserves (MERs). Communities there are using protected areas to safeguard their livelihoods, against, for example, shrimp farms and tourism projects. The Brazil study also highlights the many challenges faced in the process, which are related, among other things,

to the need for capacity building of government functionaries and communities; funding; strong community/fishworker organizations; an interdisciplinary approach; and integration of scientific and traditional knowledge.

Country	Case Study Locations
Brazil	<ul style="list-style-type: none"> • Peixe Lagoon National Park, Rio Grande do Sul • Marine Extractive Reserve (MER) Mandira, Sao Paulo • Marine Extractive Reserve (MER) Corumbau, Bahia
India	<ul style="list-style-type: none"> • Gulf of Mannar National Park (GOMNP) and Gulf of Mannar Biosphere Reserve (GOMBR), Tamil Nadu • Malvan (Marine) Wildlife Sanctuary, Maharashtra
South Africa	<p>Five MPAs in three of the country's four coastal provinces, namely:</p> <ul style="list-style-type: none"> • Langebaan Lagoon MPA • Maputaland MPA • St Lucia MPA • Tsitsikamma MPA • Mkambati MPA
Tanzania	<ul style="list-style-type: none"> • Mafia Island Marine Park (MIMP)
Thailand	<ul style="list-style-type: none"> • Had Chao Mai Marine National Park, Trang Province, Andaman Coast • Ra Island, Prathong Island, Prathong Sub-district, Kuraburi District, Phang Nga Province, Andaman Coast

On the other hand, the studies from India, Mexico, South Africa Tanzania and Thailand indicate that communities do not consider themselves equal partners in the MPA process. While, in all cases, there have been recent efforts to enhance community participation, in general, participation tends to be instrumental—communities are expected to participate in implementation, but are not part of the process of designing and implementing management initiatives. The studies also document clear costs to communities in terms of livelihood options lost, expulsion from traditional fishing grounds and living spaces, and violation of human/community rights. The affected communities regard alternative livelihood options as providing limited, if any, support, and, in several cases, as in South Africa, Tanzania and Thailand, they do not perceive substantial benefits from tourism initiatives associated with the protected areas. There tends to be a resistance to MPAs among local communities, a mistrust of government and non-governmental organizations (NGOs) that lead such processes, and violations of rules and regulations, undermining the effectiveness of the MPA itself.

The studies in this series of *SAMUDRA Monographs* stress that there is a strong case for putting in place, or strengthening, a legal framework for supporting community rights to manage resources, building the capacity of both governments and communities, strengthening local organizations, and enhancing institutional coordination. They also highlight the need for more, independent studies on MPA processes from the community perspective, given that the few existing studies on social dimensions of MPA implementation have mainly been undertaken by MPA proponents themselves. Where clear examples of violations of community rights, and unjust costs on communities are identified, easily accessible redressal mechanisms need to be put in place, nationally and internationally

Empowering indigenous and local fishing communities to progressively share the responsibility of managing coastal and fisheries resources, in keeping with the CBD's PA PoW, would undoubtedly meet the goals of both conservation and poverty reduction. This is the challenge before us. The future of both effective conservation and millions of livelihoods is at stake.

Chandrika Sharma
Executive Secretary, ICSF

“When the Thai state declared that this here Muk Island would become a part of Had Chao Mai Marine National Park, as well as Kradan Island, Waen Island and Chueak Island which are all part of our village, even though we may not be well educated, but we knew well enough how important it is to care for natural resources so that they are abundant, sustainable, and available to our children and our grandchildren. Therefore, my beloved Thai brothers and sisters, many of the families of our ancestors gradually left their homes, their fields, their orchards and their plantations, left the source of their livelihoods on those islands—left them to the past. But all of us stayed in this place, stayed here on this Muk Island. We instilled in our children and our grandchildren: Kradan island, Waen Island, Chueak Island and some parts of this Muk Island must be a source of beautiful natural resources for us, for all of the Thai people, for people from all over the world who love the beauty, quiet and peace of marine nature. And we hoped we would be able to live our lives, and maintain our livelihoods and occupations happily and peacefully with our children and our grandchildren on this Muk Island. But that is not how things have been ...”¹

“Today the small-scale fisher-folk of Trang Province spoke of many heartfelt issues, including the issue of fishing gears which damage and destroy marine animal species, which greatly reduce the numbers of marine animals, but which are not considered illegal fishing gears, and are supported by investors. Or the problem of provincial level policy for the conservation of the dugong which creates a positive image, but which doesn’t create the necessary awareness and legislation needed to control certain types of fishing gears which are harmful and dangerous to this globally endangered species which is threatened by extinction. Such issues challenge the spirit of the villagers who have risen up to help take care of the sea and its resources. Nonetheless, in light of the ways-of-life, livelihoods and occupations, and abundant natural resources that have been rehabilitated, the small-scale fisher-folk from these four villages will no doubt join forces to conserve the sea and its resources with even more vigor than before, for the future of their communities. Preserving the ideal that, when life comes from the sea, we must take care of it.”²

Figure 1 : Map of Thailand



Source: University of Texas, Perry - Castañeda library map collection
<http://www.lib.utexas.edu/maps/>

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1. INTRODUCTION

The past 40 years of so have seen rapid and profound socioeconomic changes at the global, regional and national levels. In the case of Thailand, of particular significance has been the national drive for economic development, the rise in consumerism and the impact of globalization on people's expectations, and the increase in the size of local populations. These socioeconomic changes have had impacts upon both marine and coastal resources and biodiversity, as well as on traditional small-scale fisherfolk livelihoods. The major threats to marine and coastal resources and biodiversity come from capture fishery, aquaculture, tourism, urban and industrial development, marine transportation and illegal activities, with coastal erosion, natural hazards and climate change becoming increasingly significant. At the same time, traditional small-scale fisherfolk livelihoods are threatened by increased competition for dwindling resources, both as a result of changes within small-scale fisherfolk communities themselves as well as external influences and pressures, increasing expenditures and decreasing incomes, and a lack of secure access, use and settlement rights in marine protected areas (MPAs).

It is against this background that this study was commissioned to look into the effectiveness of biodiversity conservation measures, especially the impact of MPAs on southern Thailand's Andaman Sea coastline on fishing communities, and to document the various efforts undertaken by the fishing communities themselves to protect these resources.

The study has the following four objectives:

1. to review the status of, and threats to, marine and coastal resources and biodiversity and traditional small-scale fisherfolk livelihoods in Thailand,

given that the socioeconomic contexts at the global, national and local levels have undergone rapid and drastic changes over the last 40 years or so;

2. to review the policy, legislative, management and institutional frameworks for the management of marine and coastal resources and biodiversity in Thailand, in the context of Thailand's participation in the Convention on Biological Diversity (CBD), and approximately half way through the implementation of Thailand's National Biodiversity Strategy Action Plan 2008-2012;
3. to do a case study in a marine national park in the south of Thailand (Had Chao Mai Marine National Park—Koh Libong Non-hunting Area—Trang River Estuary) to review the effectiveness of Thailand's policy, legislative, management and institutional frameworks, in order to see how well marine and coastal resources and biodiversity are being protected, and how well traditional small-scale fisherfolk livelihoods are being sustained; and
4. to identify strengths and weaknesses in Thailand's management of marine and coastal resources and biodiversity, and to analyze underlying issues in order to develop a set of recommendations for government agencies, civil society and the international community.

This study is itself based upon an earlier study entitled “Marine Protected Areas in Thailand: Potential and Challenges in Biodiversity Conservation and Community Participation in Marine and Coastal Resource Management”, carried out by three of the same authors of the present study, namely, Ravadee Prasertcharoensuk, Duangkamol Sirisook Weston and Wichoksak Ronarongpairee. The original study was based upon a review of existing literature, the researchers' own considerable experience of working with small-scale fisherfolk communities in the south of Thailand, and a series of interviews conducted specifically to gather information for the study.

This study is divided into five sections. The first focuses on the marine and coastal resources in Thailand, specially highlighting the status of fisheries. The second section deals with the legal and institutional framework for designating and managing MPAs. The third section details the types of MPAs in Thailand. The findings from the case study form the fourth section, while the final fifth section concludes with recommendations on how to move forward.

SECTION I:

MARINE AND COASTAL RESOURCES IN THAILAND

I.1. OVERVIEW

The total coastal length of Thailand is 2,880 km, with the east coast on the Gulf of Thailand measuring approximately 1,920 km, and the west coast on the Andaman Sea, 960 km. Twenty-three provinces, out of the total of 76 provinces, are located along the coast. The Gulf of Thailand connects to the territorial waters of Malaysia, Cambodia and Vietnam. The waters of the Gulf of Thailand are relatively shallow, with depths ranging between 45 to 80 m. There are rich nutrient deposits from the various rivers flowing into the Gulf. The Andaman Sea is characterized by dramatic karst limestone islands, beautiful white sandy beaches, coral reefs, mangrove forests and deep oceanic waters. The total continental shelf area of Thailand is 394, 000 sq km. (Fig 1: map of Thailand)

Thailand's two distinct coastlines fall under the influence of two very different oceans. The Gulf of Thailand, under the influence of the Pacific Ocean, has coral reefs covering an area of 74.8 sq km, besides large areas under mangroves, while the Andaman Sea has small reefs covering 78.56 sq km around the different islands, but not much of mangroves. According to a survey conducted by the Department of Marine and Coastal Resources in 2007, only 5 per cent of the coral reefs in Suratthani Province were in good condition, while 80 per cent of the reefs in the Andaman Sea have been resilient. The coral reefs on the east coast are affected by the increase in construction activities along the coast. The coral reefs on the west coast are threatened by fishing (especially using push-nets and trawls), dredges from mining and also construction activities.

Mangrove forests in Rayong, Chantaburi, Trad, and Satoon have been converted into shrimp farms, which has led to a number of land and water-access problems for coastal communities. As highlighted by a 2006 World Bank report, one of the problems that causes serious threats to coastal and marine biodiversity is coastal erosion, which is seen in provinces such as Bang Khun Tien, Bangkok and Nakornsrithammarat. There are also a few beach forests that are located within national marine parks, such as the Tai Mueng beach, Kao Lum Pi National Park, Pang-nga Province, and the Bang Kien Beach, Leam Son National Park, Ranong Province. Another threat to Thailand's marine and coastal resources comes from the increase in developmental activities such as tourism, and urban and industrial development.

Seagrass beds are also found in abundance both on the east and west coasts. On the west coast, though, 40 per cent are in poor condition, while on the east coast only 20 per cent are in poor condition from trawling, erosion due to current flow, discharge of sewage from shrimp farms, and residue from estuaries. Thai waters are also home to some large marine mammals that are also listed as endangered species—such as dugong, dolphins and whales, besides sea turtles.

Thailand's marine and coastal resources provide a diverse range of ecosystem services which would either be impossible or extremely expensive to replace. For example, marine and coastal resources can help to protect shorelines against coastal erosion, and can greatly reduce the potential impact of natural disasters.³ Climate change is another factor that also needs to be considered, as coastal erosion, changes in wave and tide patterns, and rise in sea level can have disastrous effects on Thailand's fragile marine and coastal biodiversity.

Thailand's coastline and marine resources are not just important for fisheries from a livelihood perspective, but also for the tourism and recreation industries. Tourism contributes to 10 per cent of Thailand's gross domestic product (GDP). This is mainly from five coastal provinces: Phuket and Krabi along the Andaman Sea coastline, Surat Thani and Songkhla along the southern part of the Gulf of Thailand coastline, and Chonburi, again on the Gulf of Thailand coastline, to the east of Bangkok.

I. 2. FISHERIES AND THE FISHING COMMUNITY

Thailand is one of the world's top fish-producing nations, both in terms of capture fisheries and aquaculture. It has a large exclusive economic zone (EEZ) covering a total area of about 316,000 sq km, and with over one million hectares in coastal areas suitable for coastal aquaculture. In 2007, the total fish production was about 3.9 mn tonnes, of which 58.2 per cent was from marine capture fisheries, and the rest from aquaculture, with coastal aquaculture contributing 22.9 per cent. The marine capture fish production of 2.2 mn tonnes in 2007 was valued at Baht 63,044 mn (approx. US\$2 bn). The Gulf of Thailand region accounts for nearly 41 per cent of the marine capture fish production, with 19 per cent coming from the Andaman Sea, and the rest from waters outside the Thai EEZ. The fisheries GDP of Thailand stood at US\$ 3,121 mn in 2008, of which 85 per cent can be attributed to the coastal provinces. The annual per capita fish consumption was 33.6 kg in 2006. (FAO, 2010)

Though there has been an increase in overall fish catches, reviews have shown that most demersal resources and some groups of small pelagics are overexploited.

The catch rates and catch per unit effort have been decreasing since the 1960s. The low growth in catches, and the increase in the size and quantity of trash fish, provide further evidence of overexploitation of marine resources. The 1995 Census of the Marine Fishery shows that there are 109,635 households headed by fishers, of which 50,312 are exclusively engaged in capture fisheries, while 27,388 households are engaged in coastal aquaculture and 31,935 households in both. The total population in marine fisheries was 535,210. A study published in 2000 by the Food and Agriculture Organization of the United Nations (FAO) shows that 87 per cent of these are small-scale fisherfolk.⁴ There has been no update to the census since 1995.

Thailand's capture fishery is classified into small-scale fisheries and commercial fisheries, with commercial fisheries using inboard-powered vessels of over 5 gross tonnage (GT). The gears used vary from medium- to large-size trawls, purse-seines, encircling gillnets and large drift-nets. The 2000 marine fisheries census shows that 80 per cent of the 58,119 fishing boats are small-scale in nature, and they contributed to 10 per cent of the catch in 2007. These boats are normally between 7 - 9 m in length, and do not exceed 11 m. The small-scale fisheries use boats under 5 GT (7 - 9 m in length, not exceeding 11 m), with either inboard or outboard engines, not exceeding 30 horsepower (hp). These are operated in nearshore waters (within 3 km of the shore, while large boats might go up to 5-7 km from the shore), using small trawl nets, gillnets, push-nets, lift-nets, set bag-nets, traps, hooks-and-line and other stationary gear.

The decreasing fish stocks have had major impacts on the small-scale fisherfolk who have been increasingly competing with the commercial fishers for resources. There have been conflicts between the small-scale and commercial fishers over the past 20 years, and consistent efforts have not alleviated problem. The catch per unit effort has also drastically decreased by almost 87 per cent between 1966 and 2003, leading to an increase in actual fishing time by almost seven hours. Trash fish has also become an important component of the landings, contributing almost up to 48 per cent of the landing in the Gulf of Thailand area, and 36 per cent in the Andaman Sea area. There has also been an increase in the number of fishers over the past few years, leading to competition between the small-scale and commercial fishers.

Thailand's aquaculture production has seen a tremendous increase between the 1980s and the present day, especially in the case of coastal aquaculture, where the increase has been 62,000 tonnes in 1984 (valued at 1,261 mn Thai baht) to 501,200 tonnes in 2007 (valued at US\$1.75 bn). Shrimp alone accounted for nearly 57 per cent of the quantity and 93 per cent of the value of production

in 2007 (FAO, 2010). In 2006, the Thai government had established a target to restrict the total area under shrimp farming to approximately 80,000 ha, but this has already been exceeded by nearly 2,000 ha. Large areas under mangrove forests have been converted into shrimp farms on both the coasts. While only 5 per cent of the shrimp farms are located along the Andaman Sea coast, the rest are located in the Gulf of Thailand region.

The small-scale fisherfolk have for generations always lived closer to the shore, so that they can anchor their boats and maintain their fishing gear. This closeness to the sea has also led to vast knowledge about the various oceanic cycles, and movement of fish, which has been passed down traditionally from one generation to another. The *Chao-lay* and *Chao-nam* or sea gypsies move frequently from one place to another, looking for suitable fishing grounds. Traditionally, small-scale fisherfolk live in small wooden houses on stilts located very close to the edge of the waters, without owning any land title deeds.

Besides the commercial and small-scale fisherfolk, coastal aquaculturists, and tourism operators are also dependent on the coastal and marine resources for their livelihoods. Increasingly, the urban and industrial developmental activities are also competing for coastal areas, thus exacerbating coastal erosion and reducing land available for other conservation purposes.



SECTION II:

LEGAL AND INSTITUTIONAL FRAMEWORK

II.1 LEGAL FRAMEWORK

Thailand has a broad and comprehensive policy and legislative framework related to the management of marine and coastal resources and biodiversity. Participation of communities in natural resource management is one of the important components in the recently adopted (2007) Thai Constitution. Article 66 specifically states that local or traditional communities are required to participate in the balanced and sustainable management, maintenance and utilization of natural resources and the environment. The Constitution provides the rights of personnel to participate with the government and the community in the conservation, maintenance and utilization of natural resources and environment (Article 67). This is further reiterated in Article 85 as well.

There are three major types of legislation that are applicable to marine and coastal resource management. The first is those that directly concern the use of natural resources, related to fisheries, forests, and oil and gas. The second type of law is intended to control human activity, for example, industry, construction and buildings, transportation and special area development. Finally, there are a range of laws related to various other areas, including public health, wildlife and natural areas, culture and local government administration. However, much confusion and conflict prevail because of the large number of closely related legislative acts, some of which were enacted several decades ago and have not been amended since.

The National Park Act (1961) and the Fisheries Act (1947) are the important legislation in designating marine national parks. Additionally, the National Environmental Quality Conservation and Protection Act (1992) makes provisions for the declaration of 'areas under protection' where it is possible to impose whatever measures are deemed necessary and appropriate.

The main objective of the National Park Act (1961) is to protect, control and oversee the ecology and natural habitat of plants and animals in national park areas. It forbids collecting, harming and taking out wood, natural resources, animals and plants, orchids, flowers, leaves, and fruits. It also forbids harmful and destructive activities. Under the Act, a national park committee is to be established to provide

advice on the designation of national parks, including extension or cancellation of the national park, as well as protection and maintenance of national parks. In 2006, the Department of National Parks issued a departmental order to establish local-level protected area advisory boards for all national parks and wildlife sanctuaries in Thailand.

The Fisheries Act (1947) classifies aquatic areas (where animals are caught) into four different types, namely, (i) plant conservation areas; (ii) concession areas; (iii) permitted areas; and (iv) public-use areas. The Act authorizes provincial committees to declare plant conservation areas, concession areas and permitted areas, in the fishing areas within the provincial boundaries. Those fishing areas not covered under these types are considered as public-use areas by default. Plant conservation areas include temples, shrines and associated areas, water gates, dams and weirs, and other areas considered appropriate for aquatic animal conservation. Plant conservation areas are subject to stricter controls than the other types, as fishing or raising aquatic animals is forbidden in plant conservation areas without prior permission from the Director General of the Department of Fisheries.⁵ Under this Act, there are specific measures to protect species as well, as importing of certain aquatic animals are also forbidden under the Royal Decree on Forbidding of Importing Specified Aquatic Animals into the Kingdom, 1982, and its second edition, 1993.

In response to Agenda 21, in 1993 the Department of Fisheries introduced an initiative to protect and conserve breeding grounds in the Gulf of Thailand through the establishment of marine and fisheries protected areas. Two years later, in 1995, the Department of Fisheries also initiated a programme for the management of coral reefs located outside marine national parks, incorporating research, training and public education activities.

The National Conserved Forest Act (1964) forbids collection of wood and cutting forest trees and plants in national park areas. The Ministry of Agriculture and Co-operatives issues ministerial regulations, under the Act, to identify and declare specific forests (including mangroves) as national conservation forests to maintain the forest and other natural resources.

Besides these, other related legislation include: Plant Storage Act (1964 and 1994); Animal Species Maintenance Act (1966); Exporting and Importing Goods to the Kingdom (1979); Wildlife Conservation and Protection Act (1992); National Environmental Quality Conservation and Protection Act (1992); Plant Species Protection Act (1999); Traditional Thai Medical Knowledge Enhancement and Protection Act (1999); Forest Act (1941); Mineral Resource Act (1967);

Groundwater Act (1977, 1992 and 2003); Navigation Act (1913, 1992); Petroleum Act (1971); Public Health Act (1992); and Building Code (1979) and City and Town Planning (1975).

The Thai government has also recently adopted three policies, directly related to biodiversity protection initiatives: Biodiversity Policy (2009); Country Management Plan (2008-2011); and Policy, Measure and Plan for Sustainable Biodiversity Conservation and Utilization (2008-2012). The Biodiversity Policy focuses on protection and restoration of conservation areas; and sustainable use of biodiversity in order to secure food, energy and health, and to bring about economic benefits. The fourth policy (Country Management Plan) on land, natural resources, and the environment also promotes conservation, development and sustainable utilization of biodiversity in order to yield better economic benefits. The plan has developed key indicators based on biodiversity and natural resources database that support economic development, and promotes sustainable use of resources by communities. The Policy, Measure and Plan for Sustainable Biodiversity Conservation and Utilization aims to reduce the rate of biodiversity loss and protect biodiversity components, through five measures and 17 action plans that support the objectives and goals of the CBD.



Box 1: Marine and Coastal Resources Management Act (Draft), 2007

The 2007 draft Marine and Coastal Resources Management Act represents an attempt at consolidation and increased legislative coherence, and the original draft of the Act also showed promise in terms of enshrining the rights and requiring the participation of local coastal communities.

The draft Act, developed by the Department of Marine and Coastal Resources, with support from the Asian Development Bank and the International Union for the Conservation of Nature (IUCN), provides the necessary legal framework and institutional arrangements to allow area function-participation approaches to be implemented. The draft law enshrines the right of local communities to manage their own marine and coastal resources, either through some form of local organization or by establishing a co-management arrangement with local government representatives. It also provides for zoning of areas into preservation, conservation, restoration or development zones for the utilization of marine and coastal resources. The draft Act provides for the creation of a marine and coastal resources fund, created at both national and provincial levels. Other aspects of the draft Act include promoting and supporting awareness raising and education initiatives, effective pollution control and sustainable tourism.

The draft Act calls for establishment of management measures at various levels, including national, provincial and local committees, which formally recognizes the participation of coastal communities. The national committee, to be chaired by the Prime Minister, is to oversee the operation of the marine and coastal resources fund. The national committee was also meant to promote co-operation between different stakeholders as well as help resolve disputes. Provincial committees are to be responsible for preparing provincial-level marine and coastal resource plans, reviewing and approving local policies and plans, and overseeing the operation of provincial-level marine and coastal resource funds. The local committee is to be comprised of members elected by the local communities, local administration authorities and representatives from central government agencies. These local committees are also to prepare local-level marine and coastal resource plans, manage the property and assets of local communities, promote and support co-operation and collaboration between relevant organizations and agencies, and resolve conflicts at the local level. However, the Act has remained in draft form for three years, and is yet to be adopted.

II.2. INSTITUTIONAL FRAMEWORK

The key agency at the ministerial level is the Ministry of Natural Resources and the Environment (MoNRE) and at the departmental level, the Department of Marine and Coastal Resources (DMCR). The MoNRE was established in 2002, as part of the bureaucratic reforms leading to the re-organization of other ministries, as different departments were transferred to the MoNRE. The institutional framework is quite complex, with the activities of a much larger group of government agencies potentially impacting, either directly or indirectly, on the management of marine and coastal resources and biodiversity, especially at the local level. The Department of National Parks, Wildlife and Plant Protection (DoNP), under the MoNRE, is responsible for implementing the National Park Act (1961) and the Wildlife Conservation and Protection Act (1992). The DoNP is also responsible for managing all national parks, including marine national parks; promoting sustainable use of resources through participation; conducting research; and providing academic and technical services.

The DMCR, under the MoNRE, is also responsible for promoting and supporting the conservation, rehabilitation and management of marine and coastal resources (including mangrove forests) by developing policies and management plans.

Besides these, there are other Departments under the MoNRE such as the Office of Natural Resources and Environmental Policy and Planning (ONEP), Pollution Control Department (PCD), Department of Environmental Quality Protection (DEQP), and the Royal Forestry Department. The ONEP, along with the PCD and the DEQP, and provincial and local government authorities, are responsible for the implementation of the National Environmental Quality Act (1992). The ONEP is responsible for developing policies and plans for the management of natural resources and environment through participatory processes, and monitor compliance with international agreements and conventions. In 2002, MoNRE also took on other departments and agencies transferred from other ministries.

The Department of Fisheries (DoF), under the Ministry of Agriculture and Cooperation (MoAC), is responsible for managing marine and coastal resources for fishery purposes, through implementation of the Fisheries Act (1947, 1994). The DoF is also responsible for fishery-related research and technology, and increasing the production of resources, both from capture and culture fisheries.

The Tourism Authority of Thailand, under the Ministry of Tourism and Sport; and the Marine Department, Ministry of Transport, are the other government agencies that are involved in managing tourism and marine transportation activities, respectively. Besides these, there are a wide range of other actors playing

an increasingly significant and important role, including non-governmental organizations (NGOs), civil society organizations, academic institutions, research centres and, in particular, communities themselves and their organizations.

II.3. COMMUNITIES AND OTHER ORGANIZATIONS

Fishing communities, especially along the southern region of Thailand's coastline, play an increasingly active role in protecting, rehabilitating and managing marine and coastal resources, besides resolving conflicts between different user groups. Besides the communities, other community organizations, non-governmental organizations (NGOs) and academic institutions, are also involved in raising awareness among communities, strengthening capacity, and promoting, supporting and facilitating networks among local coastal communities and small-scale fisherfolk. Academic institutions and research centres have been increasingly supporting participatory research programmes, and providing expert technical inputs to facilitate better decisionmaking and strategic planning for managing resources. More than 135 registered NGOs, together with a host of unregistered ones, are engaged in the management of marine and coastal resources in collaboration with local coastal communities and their associated networks.⁶

Box 2: Federation of Southern Fisherfolk (FSF)

FSF was formally established in 1993, following a series of activities from 1983 by a number of NGOs in Songkhla and Trang Provinces in southern Thailand, and was later expanded to cover other provinces in the south. Currently, FSF has members from 13 southern provinces, as a result of efforts and co-operation between the local small-scale fisherfolk leaders and other NGOs in the region. FSF is actively involved in improving policies and legislation that are related to the small-scale fisherfolk. It has also supported the establishment of marine and coastal management and conservation zones. FSF has continually advocated for the decentralization of authority whereby communities could actively participate in the management of natural resources.

The Southern Female Fisherfolk Network is a network of women fishers from the coastal parts of Thailand, who are dependent on the marine and coastal resources for their livelihoods. Besides being involved in activities of the FSF, the women's network is also involved in activities related to issues relevant to women fisherfolk, including those at the household level, and in improving their livelihoods and developing alternative sources of livelihood.

The provincial-level small-scale fisherfolk societies (SFSs), along with the Federation of Southern Fisherfolk (FSF), recognize that the long-term development of small-scale fisherfolk livelihoods is inextricably linked to the sustainable management of local natural resources, and work towards preventing degradation of resources, and promoting the rehabilitation of marine and coastal resources.

Besides the fishing communities, there are NGOs such as the Save Andaman Network Foundation, and the Thai Sea Watch Association, which have been working with the FSF to conserve marine and coastal resources, and improve the livelihoods of small-scale fishing communities. There have also been many other donor-funded projects, such as the Joint Management of Protected Areas (JoMPA), which focused on participatory multi-stakeholder management approaches for protected areas, including marine areas. Government-funded projects, such as the Coastal Habitats and Resources Management (CHARM) project, aimed to introduce co-management practices for managing marine and coastal resources.



SECTION III:

MARINE PROTECTED AREAS IN THAILAND

MPAs established under the National Parks Act (1961) are managed by the Department of National Parks, Wildlife and Plant Protection, under the Ministry of Natural Resources and the Environment. About 38 per cent of Thailand's coral reefs and many of its mangrove forests are located within the boundaries of MPAs. There are three types of protected areas in Thailand: areas designated under various policies and laws within Thailand; important areas as defined under international agreements and conventions; and environmentally sensitive or heavily polluted areas that are afforded a degree of protection under separate, specific legislation.

The 2006 World Bank report described Thailand's MPAs as being relatively well managed. It cited the country's MPA area management scorecard, a conglomerate of 34 different indicators grouped into six different areas. MPA management was considered good in terms of status, inputs and outputs, but need improvement in terms of planning, management processes, and the achievement of outcomes on the ground. The report suggested that consolidating technical and management capacity within the Department of Marine and Coastal Resources could increase efficiency.⁷ The major threats that exist within the boundaries of MPAs are encroachment for resort construction and shrimp farming, illegal fishing within prohibited zones, and local development projects that are incompatible with accepted conservation practices.

However, a report on 'Marine Protected Areas in Southeast Asia', produced by the ASEAN Regional Centre for Biodiversity Conservation, was much more critical of MPA management in Thailand, citing particular problems in terms of enforcement and management as well as public participation and education. The limitations for effective management of MPAs include serious conflicts between resource users, as well as jurisdictional conflicts between the various departments. The major problems in MPA management include improper planning in designating park areas, lack of manpower and equipment, lack of proper management plans, and inadequate technical knowledge of park managers (Changsang 2000). Public participation in marine resource management is also limited, and it needs to be further strengthened with more awareness campaigns and capacity building (Changsang 2000).⁸

The number of the various types of MPA in Thailand is summarized in the table below. Note that there is no one definitive source listing all the different MPAs in Thailand, and that in any one place it is entirely possible that several different types of MPAs may have been established in an overlapping manner. These facts need to be taken into account when considering the total number of MPAs in Thailand.

Table 1: Marine and Coastal Protected Areas in Thailand

Type of Protected Area	Number of Sites	Comments
Under Thai Policy and Legislation		
Marine National Parks	26	17 in the Andaman Sea; 9 in the Gulf of Thailand. 38% of all coral reefs are protected within a Marine National Park. ^{9 10}
Forest Parks (in a coastal location)	6	Forest parks are forested areas which afford picturesque views or contain a notable natural feature, such as a waterfall, cliff face or beautiful copse of trees. Forest parks are normally areas suitable for rest and relaxation and are usually much smaller and contained than national parks. A certain amount of appropriate development is usually possible without disrupting the natural surroundings, for example, constructing roads and footpaths, adding signs with the names of tree species, and providing other conveniences for visitors to the park.
Non-hunting Areas (in a coastal location)	4	Areas formally designated to allow certain species of wildlife, especially rare or endangered species, to live and breed safely and naturally. They also aim to maintain and rehabilitate the natural environment for the benefit of the designated animal species. ¹¹

Wildlife Sanctuaries or Wildlife Conservation Areas (at least partly located in a coastal province)	17	Wildlife sanctuaries have similar objectives to non-hunting areas, that is, to allow especially rare and endangered animals to live and breed safely and naturally, but have more specific criteria for their establishment. For example: there should be an abundance of wildlife, or the presence of rare or endangered animal species; there should be sufficient sources of water, food and shelter; the area should be reasonably far from any human settlement; there should be a good variety of types of forest in the area.
Important Plant Areas (in marine and coastal areas)	12	Designated to allow the conservation of certain plant species
Important Bird Areas (in marine and coastal areas)	10	Designated to allow the conservation of certain bird species at the global, regional and national levels. Established using universal international standards and criteria.
Under International Agreements and Conventions		
Biosphere Reserves	4 (1 coastal)	Declared by the International Co-ordinating Council of UNESCO's Man and Biosphere programme, biosphere reserves are intended to preserve plant and animal societies in their natural habitats, both to preserve genetic diversity and to provide a foundation for scientific study and research.
Ramsar Sites	11 (5 coastal)	The Ramsar Convention is an intergovernmental treaty that provides a framework for national action and international co-operation for the conservation and wise use of wetlands and their resources. ¹²
World Heritage Sites	5 (3 cultural, 2 natural, none coastal)	Although Thailand currently has two natural World Heritage sites, neither is coastal. The Tarutao group of islands, located in the Andaman Sea off the coast of Satul Province and part of the Tarutao Marine National Park, was rejected as a World Heritage site in 1991, with the comment that biosphere reserves should instead be used for marine preservation. ^{13 14 15}

ASEAN Heritage Parks	4 (2 coastal) with a further 2 coastal sites proposed	ASEAN Heritage Parks is a list of nature parks launched in 1984 and re-launched in 2004. It aims to protect the natural treasures of the ASEAN region. ¹⁶
Environmentally Sensitive or Heavily Polluted Areas		
Environmental Protection Areas	6	For the protection and rehabilitation of important, unique, sensitive, degraded or beautiful areas that have not yet been declared more formally as protected areas.
Pollution Control Zones	11	For the control, reduction and elimination of pollution in severe cases that have the potential to negatively impact upon human health or environmental quality. ¹⁷

III.2. THAILAND'S CONVENTION ON BIOLOGICAL DIVERSITY STRATEGIES AND PROGRAMMES OF WORK

Thailand has been a party to the CBD since 29 January 2004.¹⁸ The National Biodiversity Strategic Action Plan 2008-2012 has been prepared in compliance to CBD requirements. The plan includes five strategies and 21 indicators. The five strategies are:

1. Protecting the Components of Biodiversity;
2. Encouraging the Sustainable Use of Biodiversity;
3. Reducing the Threats to Biodiversity;
4. Promoting Research, Training, Education, Public Awareness and Networking on Biodiversity; and
5. Building National Capacity to Implement Biodiversity-related Agreements.

Among the 21 indicators are the following:

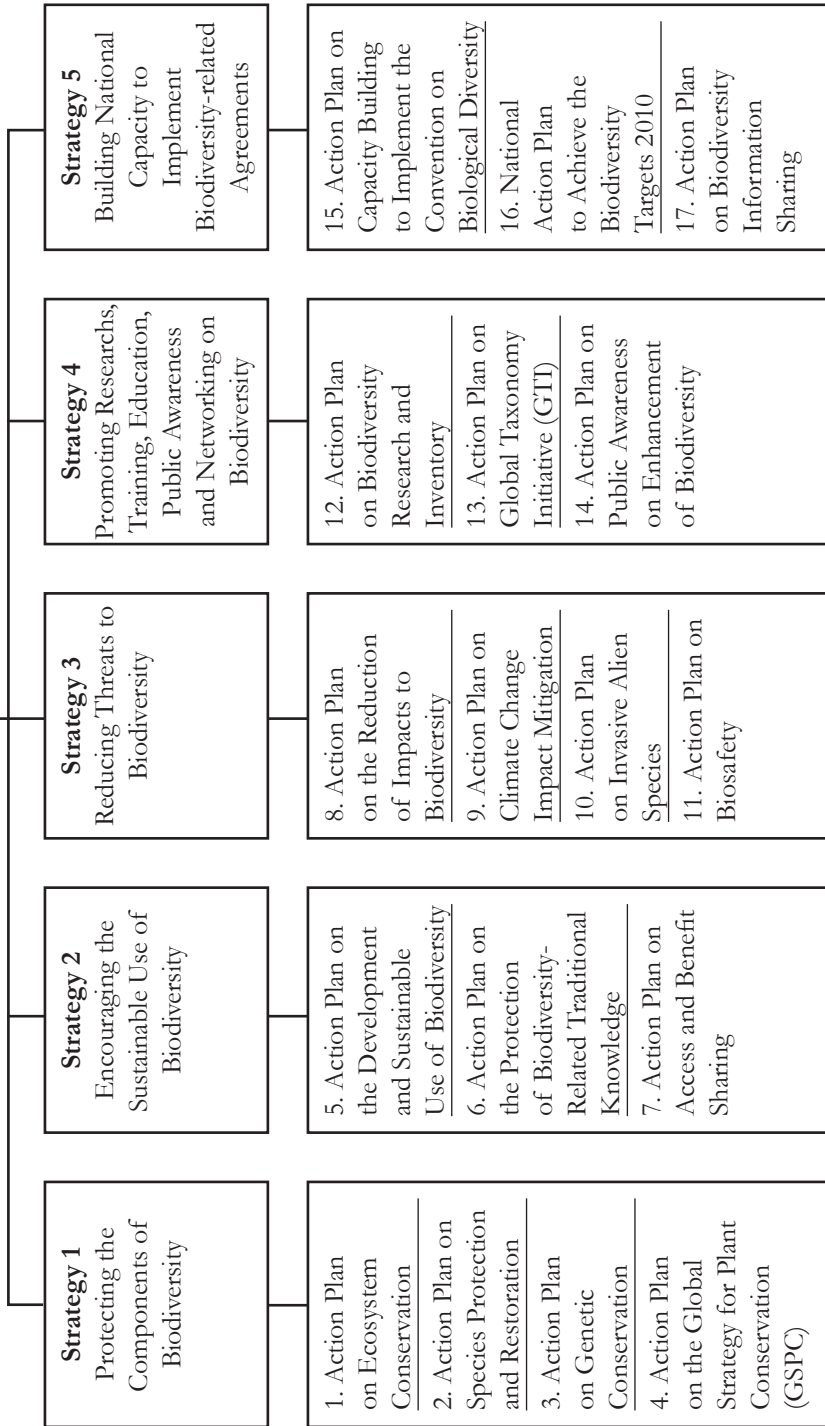
- at least 20 per cent of marine and coastal areas in Thai waters should be designated as protected areas;
- at least one site of seagrass beds and dugong habitats to be designated as a protected area;
- approx. 50,000 rai (19,768 acres) of mangrove forests should exist;

- at least 10 biological resources should be promoted/restored for further use as raw materials, source of alternative energy and commercial use;
- a national inventory on traditional knowledge and/or local wisdom related to the conservation and sustainable use of biodiversity to be completed by the year 2012;
- at least one mechanism, practical guideline, criteria or regulation should be developed to facilitate sustainable use, access and benefit sharing from the use of biodiversity; and
- at least 10 projects of awareness-raising campaign through various activities and media to be developed.

In addition, biodiversity has also been included in Thailand's National Economic and Social Development Plan.^{19 20}

Apart from Thailand's National Biodiversity Strategy Action Plan, developed by the Bureau for Biodiversity within ONEP, under the MoNRE, the Bureau of Marine and Coastal Biodiversity within the Department of Marine and Coastal Resources, has developed a document entitled 'Marine Protected Areas in Thailand: Targets for the Period 2010/2012 Under the Convention on Biological Biodiversity', which contains as an annex a Programme of Work on Marine and Coastal Biodiversity.

Figure 2: Thailand's National Policies Strategies and Action Plans on the Conservation and Sustainable Use of Biodiversity 2008-2012.



Source²¹

SECTION IV:

CASE STUDY OF HAD CHAO MAI MARINE NATIONAL PARK—KOH LIBONG NON-HUNTING AREA— TRANG RIVER ESTUARY

The Had Chao Mai Marine National Park, Koh Libong Non-hunting Area and the Trang River Estuary are located in Trang Province on Thailand's Andaman Sea coastline, and apart from a mainland area, the province also incorporates 46 islands. The province is mostly hilly and mountainous, and there are only very few plain areas. The Kao Luang and Bantad mountain ranges are the origins of the province's two main waterways, namely, the Trang River and the Palean River.

The mountainous eastern region of Trang Province is home to dramatic waterfalls, caves and pristine jungles, while the province's 119-km western-facing coastline gives way to an archipelago in the Andaman Sea, consisting of over 46 beautiful islands. Between the mountains and the coastline, extensive rubber plantations are found. The province's 46 islands are distributed among three districts—12 are located in Kantang District, 13 in Palean District and 21 in Sikao District. Travel by sea is easiest and safest during the period between October and May.

The southern part of the province's coastline is protected as part of the Moo Koh Phetra Marine National Park. The Trang River estuary, the Had Chao Mai Marine National Park and the Koh Libong Non-hunting Area together comprise a Ramsar-registered wetland of international importance.²²

The total population is 618,675, with the majority of the people of Trang Province being Thai-Chinese, followed by Thai and then Muslim, Negrito and local *chao lae*, who are often referred to as sea gypsies. About 80 per cent of the population is Buddhist, followed by Muslims (18.5 per cent) and Christians (1.5 per cent). There are a total of 129 Buddhist temples (65 of which are not yet registered with the Department of Religious Affairs), 87 Muslim mosques, 10 Christian churches and 19 *sarn jao* (shrines) and *rong jae* (vegetarian food halls).²³ A large number of people migrate into Trang Province from other areas, including neighboring provinces and, in particular, provinces in the northeastern region of Thailand, in order to look for work as crew on fishing boats, and as hired labour in rubber plantations and in industrial factories, or in more general work.

IV.1. CASE STUDY DESCRIPTION

Had Chao Mai Marine National Park—Koh Libong Non-hunting Area—Trang River Estuary

The area chosen for the case study consists of a number of overlapping MPAs of different types. Of these, three have greater importance than the others in terms of the physical area they cover, and in terms of the legislation used to manage them.

The largest of these three MPAs encompasses the other two, and it is known by the rather long and unwieldy name of Ramsar Site 1182: Had Chao Mai Marine National Park – Koh Libong Non-hunting Area – Trang River Estuary. As can be deduced from the name, the boundaries of this Ramsar site enclose the two other important MPAs in this vicinity, namely, the Had Chao Mai Marine National Park and the Koh Libong Non-hunting Area.

Ramsar Site 1182: Had Chao Mai Marine National Park—Koh Libong Non-hunting Area—Trang River Estuary

The seventh Ramsar site in Thailand, and No. 1182 on the Ramsar List of Wetlands of International Importance covers an area of approximately 663 sq km and includes parts of four districts in Trang Province, namely, Sikao District, Kantang District, Hat Samran District and Palian District.^{24 25}

The site comprises three connected wetland ecosystems with riverine, estuarine and coastal wetlands, including mangroves and nypa, sand beach and rocky marine shores, mud flats, coral reefs and seagrass beds. Inshore and offshore fisheries are locally important, and both small- and large-scale tourism is encouraged by white sandy beaches, coral reefs and other attractive features.²⁶

Had Chao Mai Marine National Park

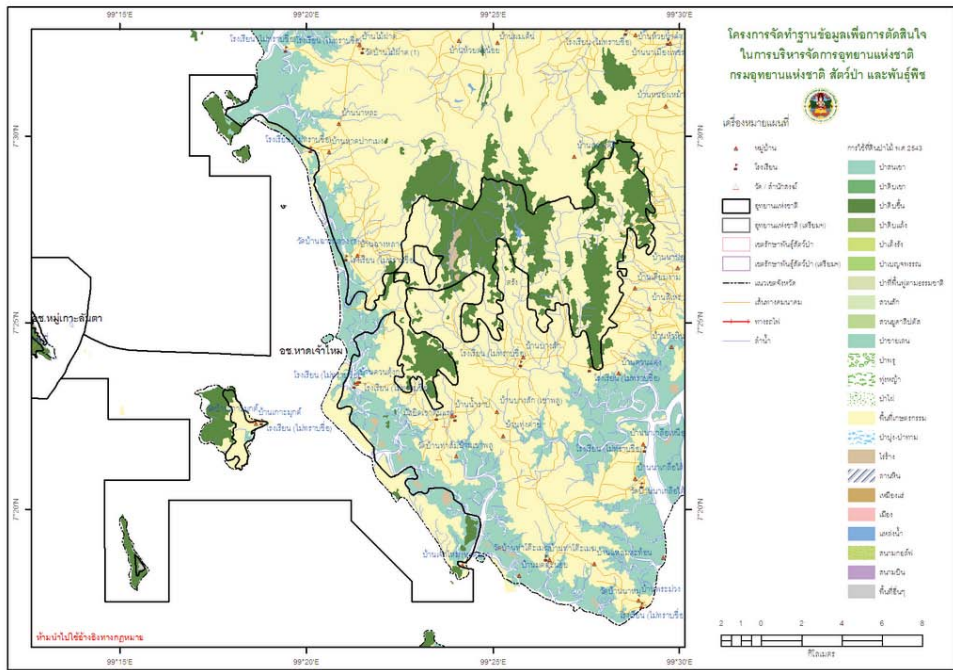
The Had Chao Mai Marine National Park covers parts of Sikao District and Kantang District in Trang Province. It is located on the Andaman Sea coastline and includes mangrove forests, seagrass beds and several islands and islets. White sandy beaches stretch for some 20 km along the mainland shore, and there are beautiful, natural she-oak pine trees in the park, which has a total area of approximately 144,292.35 rai or 230.87 sq km.

The Had Chao Mai Marine National Park can be split into two distinct areas: the terrestrial coastal area and the marine area. The terrestrial coastal area includes Muk Island, Kradan Island, Waen Island, Chueak Island, Meng Island, Pling Island and Jao Mai Island. This area consists of steep limestone mountains. In the

northeastern part are the Jongchan Mountain Range, the Metchun Hills Range and the Daeng Hills Range, among others. These mountains and hills are the source of many waterways, which combine to form the Klong Bang Sak Waterway, before flowing down into the Trang River.

The second, marine area covers approximately 137.22 sq km. It has deep waters, with the average depth being approximately 20 m.²⁷

Figure 3: Had Chao Mai Marine National Park



Source²⁸

The park is also popular for recreational activities, both on land as well as on the islands. Beaches and corals are of high quality. Tourism development is increasing in the area; a number of resorts exist and are expanding, but the park has not yet been discovered by large numbers of international tourists. Local fishermen take part in transporting tourists to the islands.²⁹

Koh Libong Non-hunting Area

The Koh Libong Non-hunting Area is a non-hunting area covering 279,687 rai or 477.499 sq km. It encompasses part of Nam Rap Mountain and Kuan Kae Mountain. It has both terrestrial forest areas and mangrove forest areas, which

remain in an intact and unspoiled condition, especially around the Trang River and Palian River. The coastline has many beautiful white sandy beaches. There are many islands, including, importantly, Ta Libong Island or, simply, Libong Island, located to the west of the Trang River Estuary. There are coral reefs and large seagrass beds.³⁰

Figure 4: Koh Libong Non-hunting Area



Source³¹

Apart from the various MPA designations already specified above, both the Had Chao Mai Marine National Park and the Koh Libong Non-hunting Area are classified as Important Plant Areas (IPAs), comprising two of a total of 12 IPAs located in marine and coastal areas, and Important Bird Areas (IBAs), comprising two of a total of 10 IBAs located in marine and coastal areas.^{32 33}

Furthermore, Ramsar Site 1182 is one of two marine and coastal areas in Thailand that have been proposed for registration as a new ASEAN Heritage Site.³⁴

IV.2 BIODIVERSITY

The Had Chao Mai marine national park covers a large area that includes tropical rainforests, limestone forests, beach forests, mangrove forests and large areas of seagrass beds. There are 51 different mammal species in the national park, including dugongs that are listed as endangered species under the Wildlife Conservation and Protection Act (1992). Besides these, in the Koh Libong Non-hunting area, there are several bird species that are in the endangered category (5), including critically endangered (6), vulnerable (6) and threatened (11). In the case of the Koh Libong Non-hunting Area, there are seagrass beds around the Libong Islands group. There are around 151 species of fish in these waters, of which 80 are of economic value in this non-hunting area. This biodiversity is threatened by agricultural encroachment, illegal timber logging, fishing using destructive gear, and pollution from waste water discharged from upstream of Trang River.

IV.3. SMALL-SCALE FISHERFOLK COMMUNITIES

The small-scale fisherfolk who live along the coastline of Trang Province have much in common with the small-scale fisherfolk living in other parts of the south of Thailand, whether on the Andaman Sea coastline or the Gulf of Thailand coastline. Although only about 20 per cent of the total population of Trang Province is Muslim, the small-scale fisherfolk communities along the coast of Trang Province are around 80 per cent Muslim. In common with small-scale fisherfolk elsewhere in Thailand, the small-scale fisherfolk of Trang Province tend to fish in a range of coastal environments—mangrove forests, mudflats and sandy beaches, as well as in the waters close to the shore. Their boats are small, usually around 7 to 9 m in length, and if they have engines, their capacity does not usually exceed around 30 hp. They employ a wide range of selective and non-destructive fishing gears, each adapted to catching a specific type of marine animal in a specific season and under specific weather conditions.

Until around the 1960s, the small-scale fisherfolk of Trang Province enjoyed secure livelihoods and a relatively good standard of living. They engaged in small-scale fishing along the coastline and in the waters within around 3,000 km of the shore. They made sustainable use of timber from local mangrove forests in order to construct houses and fishing gear, and the mangrove forests also provided the small-scale fisherfolk with a source of medicinal plants. Some small-scale fisherfolk also had supplementary income sources on shore, mostly from rubber plantations and from small-scale livestock raising. At that time, the coastal waters off Trang Province were rich and abundant. The small-scale fisherfolk were able

to get good catches without having to travel far out to sea and without spending a lot of time on the water. They had plenty of fish and marine animals with which to feed their families, and a surplus left over to sell in their villages or at local markets.

But in the decades that followed, the lives and livelihoods of the small-scale fisherfolk communities along the coast of Trang Province have changed beyond all recognition. Their livelihood and food security has become severely threatened due to an ever-increasing shortage of marine and coastal resources. Fisheries close to the shore have become so heavily degraded that small-scale fisherfolk have to travel farther and farther out to sea to maintain their catches, leading to increasing investments both in terms of time and money. As a result, some small-scale fisherfolk have become heavily indebted. Unable to survive as small-scale fisherfolk, some villagers have sold their land and become wage laborers in factories in nearby towns, in the commercial fishery sector, or even abroad in Malaysia. Reports show that at least 50,000 workers move across the Thai-Malay border on a regular basis. If current trends continue, it seems as though all the small-scale fisherfolk communities along the coastlines of the south of Thailand will collapse and disappear forever. So what has really happened? What has brought about this sudden and dramatic demise of small-scale fisherfolk lives, livelihoods and communities?^{35 36}

A focus on rapid, export-oriented economic development is one of the main factors that has brought about the degradation and destruction of marine and coastal resources and ecosystems in recent decades. The small-scale fisherfolk communities living along the coastlines of the south of Thailand, as a group, have suffered the greatest and most critical losses as a result of this degradation and destruction of natural resources. Large tracts of marine and coastal areas have been ravished by poorly planned or unscrupulous development practices, destroying large areas of mangrove forests, seagrass beds and coral reefs, along with the multitude of plants and animal species that inhabit such environments. This has greatly impacted upon marine and coastal biodiversity, while, at the same time, disrupting the delicate and complex balance between the various elements and components of marine and coastal ecosystems, and the life-sustaining relationships between human communities and the marine and coastal environments on which they so heavily depend.³⁷

The rapid degradation of marine and coastal resources and ecosystems in Trang Province has been the result of three main factors. Firstly, the government policy promoting export-oriented industrialization has led to massive encroachment into coastal ecosystems and massive exploitation of coastal resources. Specifically

in Trang Province, huge areas of mangrove forests were destroyed, initially as a result of concessions granted to allow the cutting of mangrove forests for the production of charcoal, and then subsequently as the result of the expansion of agribusiness in the form of aquaculture development, and, in particular, the rapid development of shrimp farming in the area.

Mangroves are important to humans in fundamental ways. First, they are vital for healthy coastal ecosystems, which, in turn, support healthy fisheries. The fallen leaves and branches provide nutrients for a vibrant marine environment that supports a large variety of marine and terrestrial life. They are refuges and nurseries for juvenile fish, crabs, shrimp and molluscs. They, and the flora found in mangrove forests, are prime nesting sites for migratory birds, and home to other species such as monkeys, sea turtles, mudskippers and monitor lizards.

Another important function of mangroves is to increase the resilience of the coastlines, protecting them from erosion, tropical storms and tidal waves. The trees and bushes trap sediments washing down from the land, thereby protecting the seagrass beds and coral reefs from siltation. Mangroves co-exist with a wide variety of other plant life, allowing them to function as a ‘supermarket’ stocked with fruits, honey, fuelwood, medicinal plants and construction material, among other useful products.^{38 39}

Secondly, the rapid expansion of commercial, mechanized fisheries quickly brought devastation to marine resources in the waters off Trang Province. Large, modern fishing boats employing destructive and, in some cases, illegal fishing gears such as push-nets and drag-nets, caught fish and other marine animals in quantities much larger than the small-scale fisherfolk themselves had ever been able to catch, drastically reducing populations in a very short period of time. The devastating impact of commercial fishing boats was exacerbated by the fact that the gears employed were often not selective, sweeping up everything in their paths, including juvenile fish and marine animals, and also by the fact that commercial fishing boats frequently flouted the law by trespassing into the 3,000-m onshore zone, which is supposed to be reserved for small-scale traditional fishery only.

Even worse, the fishing gears employed by commercial fishing boats brought damage and destruction to invaluable marine ecosystems such as coral reefs and seagrass beds.

Thirdly, and finally, many of the elements and components of the marine and coastal ecosystems of Trang Province, including coral reefs, seagrass beds and a wide variety of fish and marine animals, have been left in a seriously

degraded state as a result of other forms of urbanization, commercialization and industrialization along the coastline of the province, and even outside the province too. Waste water discharged from towns, tourism areas, factories and other commercial operations has become an increasingly significant factor in the degradation of marine and coastal resources. Shrimp farms and fish farms, in order to raise production and profits, began turning to increasingly modern and intensive farming methods, including the use of high-nutrient feeds, antibiotics, poisons and cleansing chemicals to control the spread of parasites and other marine pests. Such substances quickly became a serious source of pollution in the waters off Trang Province. However lucrative aquaculture operations were, their negative impacts on the marine and coastal environment in the province were equally huge.

Human communities have, for centuries, depended upon, and interacted with, marine and coastal resources and ecosystems as well as forest ecosystems in Trang Province. Human communities have traditionally been an integral part of natural ecosystems, and the history and culture of small-scale fisherfolk communities in Trang Province have both been heavily influenced by the communities' intertwined relationship with marine, coastal and forest resources. Over the centuries, the ongoing interaction between local communities and natural ecosystems has developed into a sustainable relationship, promoting and supporting social stability and ecosystem equilibrium.

But, in the face of immense and sudden cultural, social and livelihood changes over the past few decades, the previously intimate relationship between small-scale fisherfolk communities and marine, coastal and forest ecosystems has begun to disintegrate. Traditions of sustainable resource use and community-based natural resource management have been seriously challenged by rapidly expanding commercialization and the relentless influence of market forces.⁴⁰

All of the problems and issues so far described are related to the changing circumstances of the small-scale fisherfolk communities of Trang Province, and the rapid degradation and destruction of marine and coastal resources within the province. None of these problems and issues is directly related to the establishment of MPAs along the coastline of Trang Province. However, once MPAs were declared, a number of new problems and issues emerged.

When the MPAs were declared, they enclosed a number of small-scale fisherfolk communities as well as some non-fishing communities within their boundaries. According to interviews carried out with villagers on Muk Island, at the time when the MPAs were declared, none of the community members knew anything

about them because no process of public consultation was carried out with the community beforehand.⁴¹

Focusing on the Had Chao Mai Marine National Park, where the strictest conservation regulations apply, the following table shows which villages were affected in some way by the declaration of the marine national park.

Table 2: List of Villages Affected by the Designation of the National Park

Status	Number	Names
Almost completely located within the marine national park	1	Bak Meng Moo 4 Village, Mai Faht Sub-district, Sikao District, Trang Province
Adjoining the boundary of the marine national park in coastal and forest areas	6	Na La Village, Mai Fhat Sub-district, Sikao District, Trang Province Chang Lang Moo 5 Village, Mai Fhat Sub-district, Sikao District, Trang Province Kuan Tung Koo Moo 3 Village, Bang Sak Sub-district, Kantang District, Trang Province Nam Rap Moo 4 Village, Bang Sak Sub-district, Kantang District, Trang Province Koh Muk Moo 2 Village, Koh Libong Sub-district, Kantang District, Trang Province Jao Mai Moo 6 Village, Koh Libong Sub-district, Kantang District, Trang Province

Adjoining the boundary of the marine national park in forest areas only	7	<p>Klong Mai Deng Village, Bang Sak Sub-district, Kantang District, Trang Province</p> <p>Kao Plu Village, Bang Sak Sub-district, Kantang District, Trang Province</p> <p>Ba Kae Village, Bor Nam Ron Sub-district, Kantang District, Trang Province</p> <p>Sai Nun Village, Bang Sak Sub-district, Kantang District, Trang Province</p> <p>Kiam Ngam Moo 8 Village, Bor Nam Ron Sub-district, Kantang District, Trang Province</p> <p>Kuan Kaeng Moo 7 Village, Bor Nam Ron Sub-district, Kantang District, Trang Province</p> <p>See Ray Moo 6 Village, Bor Nam Ron Sub-district, Kantang District, Trang Province</p>
Located outside the boundary of the marine national park, but fishing occurs inside the boundary of the marine national park around Kradan Island, Waen Island, Yong Lam Beach, Yong Ling Beach etc	9	<p>Laem Sai Moo 3 Village, Kao Mai Kaew Sub-district, Sikao District, Trang Province</p> <p>Su Ngai Batu Moo 3 Village, Koh Libong Sub-district, Kantang District, Trang Province</p> <p>Tha Doh Maek Moo 5 Village, Na Kluea Sub-district, Kantang District, Trang Province</p> <p>Mod Tanoy Moo 3 Village, Koh Libong Sub-district, Kantang District, Trang Province</p> <p>Batu Butae Moo 4 Village, Lang Kao Moo 7 Village, Had Sai Kao Moo 5 Village and Prao Moo 1 Village, Koh Libong Sub-district, Kantang District, Trang Province (4 villages)</p> <p>Pra Muang Moo 4 Village, Na Kluea Sub-district, Kantang District, Trang Province</p>

A lack of proper public consultation before the MPAs were established, lack of information dissemination to the public following the establishment of the MPAs, and poor demarcation of the MPA boundaries are all factors that led to conflicts between villagers and government officials once the MPAs had been declared.

Since community members were not given clear information regarding where the boundaries of the MPAs lay, many ended up being arrested after the MPAs had been established. Community members quickly expressed their concerns about a lack of proper public consultation by the relevant government agencies

in setting up the MPAs, and unclear rules and regulations regarding their management. Furthermore, a study published in 2000 titled 'MPAs and Their Impact on Small-scale Fisherfolk' (Prasert) reported that small-scale fisherfolk very often found it difficult to fish and harvest resources as a result of confusion over demarcation and legality.

The problems faced by local communities within the MPAs were not limited to difficulties in fishing and harvesting resources, but extended to land entitlement issues. Many of the small-scale fisherfolk and other villagers living within the boundaries of the MPAs have no land title deeds or documents, whether in terms of tenure for agricultural activities or for habitation and settlement. Apart from local communities, other individuals and groups also have an interest in claiming land tenure within the MPAs, including local small-scale traders and business owners as well as larger investors interested in acquiring land entitlement documents to allow them to develop hotels and resorts in the MPAs. Some investors 'buy out' small-scale fisherfolk and other villagers local to the area, later hire them as temporary workers.

The outstanding natural beauty and plant and animal diversity of Trang Province's marine and coastal ecosystems imply a huge potential for developing the tourism industry in the province. But this huge potential also represents a serious threat, since exceeding the carrying capacity of the marine and coastal ecosystems means destroying the uniqueness of the MPAs in the province. Unco-ordinated infrastructure and tourism development continues to constitute serious threats to the MPAs of Trang Province.

Focusing on the Had Chao Mai Marine National Park, figures show that it continues to receive an increasing number of tourist visitors each year. During an interview in January 2007, the park superintendent explained that the number of tourists visiting the park each year is regulated as part of strict environmental controls (interview with Park Superintendent, Had Chao Mai Marine National Park, January 2007). But despite such regulations and controls, there remains evidence that the increasing number of tourist visitors poses a very real threat to the park's environment.

Finally, despite the establishment of the MPAs, it would seem that the degradation and depletion of marine and coastal resources that occurred in the past have yet to be brought completely under control. Although overall the marine and wetland habitats in the MPAs remain in reasonably good condition, and, in particular, progress has been made in protecting the important seagrass beds in the MPAs, both seagrass beds and coral reefs are subject to considerable ongoing damage

and destruction. Since they both play important ecological functions in marine ecosystems, their damage and destruction only causes a general degradation of the marine and coastal resources in the MPAs.

Inappropriate and illegal fishing practices within both the commercial and non-commercial fishery sectors is one of the reasons why the degradation and depletion of marine and coastal resources has continued despite the establishment of the MPAs. Large commercial fishing boats using illegal fishing gears such as push-nets and drag-nets, and coming primarily from outside the local area, are an ongoing problem in the boundaries of the MPAs. And despite increased awareness regarding the need to manage, conserve and rehabilitate marine and coastal resources, some small-scale fisherfolk themselves continue to resort to destructive fishing practices such as the use of fine-mesh nets and dynamite. A degree of encroachment continues to occur in coastal areas, usually on the part of plantation owners and shrimp farmers, and pollution and waste water from both plantations and shrimp farms are very detrimental to the well-being of mangrove forests in the MPAs. Further inland, terrestrial forests are seriously threatened by destructive farming practices (often related to rubber cultivation) and illegal timber extraction.⁴²

**Box 3: The First Koh Muk Island Declaration – 13 April 2004
In Front of Nam Cave**

My many Thai brothers and sisters whom I love dearly, it has been over a hundred years since our ancestors travelled here, used their bare hands to colonize this place, and lived their lives here. Children and grandchildren were born, houses and homes built here. Thousands of our ancestors lie buried beneath this land, the umbilical cords of ten thousand of our children and grandchildren were buried beneath this land.

Nonetheless, we did not try to restrict rights over this land to only our children and grandchildren. Throughout the past, we have always been welcoming all the government agencies that came to stay together with us. We welcomed the police station that mediated and reconciled disputes together with us. We welcomed the school that gradually trained and gave knowledge to our children and grandchildren. We welcomed all the different things that gradually made life more convenient, both for ourselves and for the friends who came to visit us. We welcomed our brothers and sisters from other locations who wanted to come and live with us in a peaceful manner. Every one of our children and grandchildren are part of the population that lives under the jurisdiction of

Thailand, and are Thai citizens governed by the national constitution on an equal footing with all our other Thai brothers and sisters that we love dearly.

When the Thai State declared that this here Muk Island would become a part of Had Chao Mai Marine National Park, as well as Kradan Island, Waen Island and Chueak Island, which are all part of our village, even though we may not be well educated, we knew well enough how important it is to care for natural resources so that they are abundant, sustainable and available to our children and our grandchildren. Therefore, my beloved Thai brothers and sisters, many of the families of our ancestors gradually left their homes, their fields, their orchards and their plantations, left the source of their livelihoods on those islands—left them to the past. But all of us stayed in this place, stayed here on this Muk Island. We instilled in our children and our grandchildren: Kradan Island, Waen Island, Chueak Island and some parts of this Muk Island must be a source of beautiful natural resources for us, for all of the Thai people, for people from all over the world who love the beauty, quiet and peace of marine nature. And we hoped we would be able to live our lives, and maintain our livelihoods and occupations happily and peacefully with our children and our grandchildren on this Muk Island.

But that is not how things have been. For more than 20 years now, we have had to face threats and intimidation, the use of different forms of authority by the marine national park officials. For more than 20 years now, we have had to surrender ourselves, we have been arrested while in our own orchards and plantations, we have had to fear and surrender to the park officials who come into our village shouldering guns. We have had to surrender when our traditional small-scale fishing boats have been threatened with seizure for committing wrongdoings in the park boundary, whilst illegal drag-net fishing boats that devastate resources are able to come and damage and destroy seagrass beds and coral reefs even in front of the marine national park office. We never had to pay admission to anyone when we took our children, grandchildren and relatives to visit and play in ‘Nam Cave’. But we had to accept to part with money when it was given the new name ‘Emerald Cave’. Our children, grandchildren and relatives have had to frantically flee the bullets of the park officials, merely because they brought their boats close to Kradan Island to shelter from high waves and strong winds. My beloved brothers and sisters and friends, these various events have occurred again and again “again and again”.

Our ancestors and ourselves never before realized or understood that the presence of a marine national park boundary, the absence of a land entitlement document in line with the law, or the absence of a Sor Kor 1 form to report our use of a plot of land would mean that one day we could be driven out from our very own land.

All we knew was that, if our ancestors had previously made their livelihoods on that land, that land should be our right. All we knew was that, if we had a Kor Tor Bor 5 form to show we had paid local maintenance tax or ‘tar costs’, as we call it, that land should be our right. All we knew was that, if the people in the village gave their consent to allocate land to our children and grandchildren as they became adults, that land should be our right.

My Thai brothers and sisters, tourism operators, tourists, press and all those who care about justice and fairness, currently all these different events and hardships are becoming more severe and more frequent by the day, to the point where we, our children and our grandchildren are not maintaining our livelihoods as we normally would. Most recently, tens of marine national park officials, wearing camouflage and carrying weapons, invaded our island and damaged and destroyed our coconut trees and various other assets.

In the past, we have had to endure and surrender to this unpleasantness and badness because we have been too afraid.

But now, we the people of Muk Island, have learned that if we continue to surrender, then in the future there will be no place left for ourselves, our children and our grandchildren on this here land. From now on, we will not give space to the word ‘surrender’ ever again. Today, therefore, we have come to demonstrate here, at ‘Nam Cave’ or ‘Emerald Cave’, a symbol of the beauty of this Muk Island, to demand our rights in line with the constitution. And we hope that the government agencies will protect our rights also. To our foreign friends who have travelled here to sightsee at ‘Nam Cave’ or ‘Emerald Cave’ today: certainly, the ‘Emerald Cave’ is a common treasure belonging both to you as well as to us. But today we appeal to you, allow us to fight for our land this one time, and we remain your friends forever, both now and into the future.

On this occasion, in order to be able to resolve these problems sustainably and justly, we would like to demand from those in authority the following:

1. Those in authority should order Had Chao Mai Marine National Park to cease dismantling, demolishing, damaging and destroying

assets and property, and all other forms of aggression against the people in all parts of Had Chao Mai Marine National Park. In the meantime, the people should be allowed to maintain their livelihoods and occupations normally in their own respective areas.

2. Establish a process to prove people's rights to land, by having those with direct authority establish a joint committee between the people and the government sector, in order to prove people's rights to land for livelihood maintenance, settlement and habitation, both in terms of the right to possess land and also the right to make use of land. The criteria used to prove people's rights should be collaboratively identified by all members of the joint committee together, and the members of the joint committee should work together until it is possible to distinguish between and clearly demarcate the boundaries of the marine national park area and the people's area, and until the issuance of land entitlement documents has been fully completed.
3. Have Mr. Prayoon Srisuvan, Superintendent of Had Chao Mai Marine National Park, leave his post and leave this area within 24 hours. Have those related to the incident where people's assets and crops were damaged and destroyed on 8 April 2004 be held responsible, and provide compensation for the losses incurred to the village.
4. Allow communities and the local administration organizations to manage, care for and maintain, the communities' natural resources and tourism destinations in a concrete and tangible way.

With this declaration, we hope we are able to let our well-wishers know that we are always ready and willing to negotiate, but only with those who have the authority to make decisions related to our demands, and we will not withdraw or retreat from here until our demands receive answers.⁴³

IV.4 THE MANAGEMENT OF THE PROTECTED AREAS

In this sub-section, we focus our discussions on Had Chao Mai Marine National Park, but the context of the management of the overarching Ramsar Site 1182: Had Chao Mai Marine National Park—Koh Libong Non-hunting Area—Trang River Estuary in general is quite similar.

Prior to being declared a Marine National Park, the Had Chao Mai area was managed as a Forest Reserve under the National Conserved Forest Act (1964), and for some considerable time, management and enforcement were the responsibility

of the Royal Forestry Department. Following the bureaucratic reform that took place during 2002, responsibility for management of the MPA was transferred fully to the Department of National Parks, Wildlife and Plant Protection, where it has remained since. According to the Park Superintendent, the ultimate goal in managing Had Chao Mai Marine National Park is the conservation of the MPA's remaining forest resources (interview with Park Superintendent, Had Chao Mai Marine National Park). Theoretically, the National Park Act (1961) is the key legislative act that should be applied in the management of the marine national park, but, in practice, many of the regulations related to natural resource utilization have been relaxed to a greater or lesser degree, particularly in the case of small-scale fisherfolk, over the recent years.

Management of Had Chao Mai Marine National Park, both in terms of the officers responsible as well as the way in which management is carried out, is split between the terrestrial and marine areas of the park. The terrestrial areas of the marine national park are managed predominantly by National Park Officers, whose primary mandate is to protect the forest resources within the park. The National Park Officers patrol the forests within the boundary of the marine national park to check whether any destructive activities are taking place, such as illegal logging, and they have the authority to arrest those they find breaking the law.

The marine areas of the park are managed through the collective efforts of a number of different government agencies and other related groups, namely, Marine Police, Harbour Department Officers, National Park Officers, Department of Fishery Officers and local community members. Between them, these different actors patrol the waters within the boundary of the marine national park, attempting to control the fishing operations of both small-scale fisherfolk and, importantly, large commercial fishing boats. They also help to look after tourists and ensure their safety.

The different actors responsible for patrolling the waters within the marine national park tend to act independently, rather than patrolling together as a cohesive unit. Relevant government agencies and other related groups are brought in as necessary when specific incidents falling under their jurisdiction occur. At Had Chao Mai Marine National Park Office, a Nature Study Centre has also been established to promote and support the conservation of seagrass and dugong. The centre provides general information and study resources about biodiversity conservation.

Had Chao Mai Marine National Park receives an annual budget from the central government via the Department of National Parks, Wildlife and Plant

Conservation, of approximately 3 mn Thai baht (approx. US\$98,000). This annual budget covers the salaries of around 100 staff as well as operational, administration and equipment costs. Over half of the marine national park's hundred-or-so staff are based on the mainland, predominantly in the vicinity of the Had Chao Mai Marine National Park Office, since this is where most of the marine national park's recreational activities take place. A significant amount of manpower is required to maintain a clean, safe and pleasant environment for the marine national park's visitors. Most of the staff employed by the marine national park do not have scientific degrees, which limits the effective management of the marine national park.⁴⁴

In terms of government agencies that play an active role in the management of Had Chao Mai Marine National Park, as well as the wider Ramsar Site 1182: Had Chao Mai Marine National Park—Koh Libong Non-hunting Area—Trang River Estuary, it is worth mentioning the role of two government agencies in particular, which are notable for the more open and engaging approach they take in working together with small-scale fisherfolk communities.

The first government agency that should be given special mention is the Trang Provincial Fisheries Office under the Department of Fisheries in the Ministry of Agriculture and Co-operatives. The Trang Provincial Fisheries Office is responsible for:

- researching, analyzing and evaluating all types of fishery technology in order to support the establishment of fishery businesses and occupations that are appropriate in the province, and to manage such fishery businesses and occupations so that they are in line with the relevant laws, regulations, agreements and standards;
- controlling, managing and monitoring both aquaculture and capture fishery so that they are in line with fishery laws and other relevant laws, as well as providing knowledge and supporting technology transfer that is academically and technically correct and providing other relevant academic and technical services;
- developing a provincial fisheries development plan and a provincial fisheries database, and conducting public relations and information dissemination regarding the province's fishery work;
- providing advice, suggestions and support to local administration organizations regarding increasing the production in water sources; and
- working together with, or supporting the work of, other related agencies or agencies assigned fishery responsibilities.⁴⁵

The Provincial Fisheries Offices of the Department of Fisheries in the Ministry of Agriculture and Co-operatives, including the Trang Provincial Fisheries Office, have an initiative to promote and support the participation of the general public, including small-scale fisherfolk, by recruiting them to act as Fisheries Volunteers. Fisheries Volunteers are recruited by Provincial Fisheries Offices like Trang Provincial Fishery Office to perform the following duties:

- to act as assistants to Fisheries Officers working in the area;
- to disseminate news and information about fisheries to the general public in the area; and
- to carry out various activities as assigned by Fisheries Officers.

In return for providing a service to the general public, Fisheries Volunteers receive certain special privileges as follows:

- Fisheries Volunteers receive priority access to new Department of Fisheries projects.
- If fishers in the area would like to purchase fish stocks from official Fisheries Centres and Fisheries Stations, they can arrange to purchase fish stock via local Fisheries Volunteers.
- Fisheries Volunteers have the right to register fishers and water sources in their communities.
- They have the right to select fishers in their communities to participate in various Department of Fisheries Projects.
- Fisheries Volunteers are able to inspect the loss and damage caused by flooding in their communities.⁴⁶

In terms of the management of Had Chao Mai Marine National Park, Fisheries Volunteers and the support of the Trang Provincial Fisheries Office have played an important role in helping to patrol, and in monitoring the use of inappropriate and illegal fishing gears and practices.

The second government agency that should be given special mention in terms of its more open and engaging approach in working together with small-scale fisherfolk communities is the Mangrove Forest Resource Conservation Bureau under the Department of Marine and Coastal Resources in the MoNRE. Previously, responsibility for the management of mangrove forest resources rested with the Royal Forestry Department in the Ministry of Agriculture and Co-operatives. But following the substantial bureaucratic reform that took place in 2002, responsibility for the management of mangrove forest resources was transferred

to the Department of Marine and Coastal Resources in the MoNRE.⁴⁷

The Mangrove Forest Resource Conservation Bureau has the following official mandate:

- Establish conservation measures and develop management plans for mangrove forest resources.
- Study, analyze, research and plan land use in order to preserve, conserve and rehabilitate mangrove forest resources which have received environmental or ecosystem impacts.
- Provide advice and suggestions and support knowledge and technology transfer relating to mangrove forest resources.
- Manage the conservation and rehabilitation of mangrove forest resources, and prevent and suppress the damage and destruction of mangrove forest resources, including co-ordinating with other relevant government agencies as necessary.
- Work together with, or support the work of, other related agencies or agencies assigned mangrove forest resource responsibilities.
- Carry out other work as assigned.⁴⁸

At the local level, the work of the Mangrove Forest Resource Conservation Bureau is carried out through the Mangrove Forest Resource Development Stations. In Trang Province, four separate stations have a role to play, namely, Mangrove Forest Resource Development Stations 30 (Kantang District), 31 (Sikao District), 32 (Yan Takao District) and 33 (Palean District).

The Mangrove Forest Resource Development Stations aim to:

- protect and preserve mangrove forest areas to prevent encroachment, damage and destruction;
- rehabilitate mangrove forest resources so that they are plentiful and abundant;
- promote and support the public participation in the management of mangrove forest resources; and
- ensure there are mangrove forest resources which are able to bring benefit to the general public.^{49 50}

In Had Chao Mai Marine National Park, the Mangrove Forest Resource Development Stations have been very supportive of the initiatives of local small-

scale fisherfolk communities in sustainably managing mangrove forests. In fact, the Department of Marine and Coastal Resources as a whole demonstrates a very progressive and proactive approach towards promoting and supporting public participation in the management of natural resources. As such, it would be ideal if the Department of Marine and Coastal Resources were able to play a greater role in the management of marine and coastal resources, particularly within MPAs. But in reality, policy and legislation limitations prevent this. When thinking about the government agencies responsible for the management of natural resources, those agencies with the greatest authority and remit tend to be supported by legislation that grants them both an executive and a punitive role, that is, such agencies have a formal mandate to both manage natural resources directly as well as to penalize offenders who break laws related to natural resource use. But even if the draft Marine and Coastal Resources Management Act is eventually passed into law, it would grant at best a consultative role to the Department of Marine and Coastal Resources, that is, the department would still have a limited mandate in terms of managing natural resources directly, and would instead provide advice and support to other government agencies with more executive roles.

IV.5 ATTEMPTS TO IMPROVE THE SITUATION

Community Initiatives

Small-scale fisherfolk themselves, on recognizing the degradation and depletion of marine and coastal resources occurring around them, and acknowledging the effect such degradation and depletion has on their lives and livelihoods, food security and economic security, have been quick to act to try to protect, conserve and rehabilitate these valuable marine and coastal ecosystems. Some examples of the initiatives carried out by small-scale fisherfolk communities include community mangrove forest management areas, ‘fish houses’ (underwater structures built from wood which allow juvenile fish stocks to flourish), ‘swimming crab banks’ (areas set aside for the rehabilitation of swimming crab stocks), and community natural resources conservation, rehabilitation and management zones.

The small-scale fisherfolk of Trang Province have also come together as a network in the form of the Trang Province Small-scale Fisherfolk Society, one of the many small-scale fisherfolk societies included under the umbrella of the larger network, the Federation of Southern Fisherfolk. Both the Trang Province Small-scale Fisherfolk Society and the FSF have been working to link the problems experienced by small-scale fisherfolk at the local level to the prevailing policy direction at the national level, and have been advocating and campaigning for local

and national government and relevant international organizations to address the issues faced by small-scale fisherfolk.

The 'Lae Sae Ban' or 'Four-village Marine Conservation Zone' is a good, concrete example of a community initiative to protect, conserve and rehabilitate marine and coastal resources. The initiative, a collaborative effort between four small-scale fisherfolk communities that make use of common marine and coastal resources, has successfully introduced measures to reduce the use of inappropriate and illegal fishing gears and fishing practices in the vicinity of the four communities. The four communities are currently attempting to carry out monitoring and evaluation activities in order to try to quantify the positive effects of the marine and coastal resource management regime they have jointly implemented. Initiatives like the 'Lae Sae Ban' have the potential to be expanded to cover more small-scale fisherfolk communities and more marine and coastal resources in the MPAs.

Box 4: The 'Lae Sae Ban' Zone—Reviving Trang Sea, Protecting the Home of the Dugong

When we think about the Indian Ocean tsunami that occurred in 2004, most people tend to recall the images of loss and destruction caused by the undersea quake and the subsequent tsunami, or the river of generosity as people flowed to the stricken areas to provide assistance to the affected villagers. But how many people would know that Nam Rap Village, Koh Muk Village, Kuan Tung Koo Village and Chang Lang Village, all communities located along the Andaman Sea coastline of Thailand, used the devastation caused by this severe catastrophe as the impetus to rebuild their resilient communities once again, and to create awareness about the importance of natural resources.

Today the fisherfolk of Nam Rap Village, Chang Lang Village, Kian Tung Koo Village and Koh Muk village take their boats out into the waters of the Trang Sea in search of crabs and fish, and a good number of them also help to take care of the sea by working together with government officials, so that natural resources are not damaged and destroyed by illegal fishing gears. Particular attention has been paid to the dugong, which is close to extinction and is considered a conserved animal in Thailand. Even though the dugongs of the Trang Sea are in a critical state, just like the dugongs in the Andaman Sea as a whole, they have not just been left to their fate without anyone to take care of them. Rather, the communities are working together to keep an eye on, and take care of, local seagrass beds, the habitat and feeding grounds of dugongs, in order to ensure the survival of this species.

After the 2004 tsunami, the establishment of the ‘Trang Province Four Village Juvenile Marine Animal Species Conservation Zone’—known more simply in the traditional dialect of the people of Southern Thailand as ‘Lae Sae Ban’—is another example of the communities’ strength and resilience. They have together established rules and regulations to care for, and maintain, the sea and its resources, based on a knowledge and understanding of their innate value. These communities will not fish with gears that devastate and annihilate marine animal species.

At Nam Rap Village, Bang Sak Sub-district, Kantang District, Mr. Longfia Bangsak, Chairman of the Nam Rap Village Small-scale Fisherfolk Group, explained that the communities started to implement the Four Village Sea Zone in 2007. The livelihoods of the local small-scale fisherfolk rely mainly on bamboo crab traps and crab seines. Out at sea, we could see that the numbers of marine animals had reduced, and our fellow small-scale fisherfolk were finding it more difficult to maintain their livelihoods. Apart from this, there were problems like the use of explosives, poisons, push-nets and other different types of illegal fishing gears, both out at sea and in coastal waterways. So we began to plan to establish a conservation zone, calling for co-operation from our fellow small-scale fisherfolk in order to ensure we would be able to make use of the sea sustainably into the future. It took about nine months before we were finally able to establish the Four Village Sea Zone. All the villagers do is manage the sea and its resources. Everyone still makes use of the sea within the Four Village Sea Zone, but they do so sustainably under the rules and regulations that have been established.

Mr. Longfia Bangsak spoke about fishing that devastates and annihilates resources, explaining that there are a lot of fishers using a range of different fishing gears and techniques, including both illegal and inappropriate ones. For example, bottom longlines, although not illegal, are damaging to endangered marine animals such as dugongs and sea turtles. So too are fine-mesh nets, with mesh sizes smaller than two inches, in which juvenile crabs and fish get caught, never getting the chance to mature. Diving for shellfish using breathing equipment sweeps up everything, compared to the traditional villagers’ technique of using only their bare hands. So we created a set of rules and regulations. Villagers in the area have co-operated well, but we still have problems with people from outside the area and with foreign fishers who do not know our local rules and regulations. We have to try to create understanding, and talk with them while we are out on the sea together.

Apart from the villagers collectively agreeing to help conserve the sea, they have also established a zone for the conservation of mangrove forests. The Chairman of the Small-scale Fisherfolk Group explained that people became very interested and earnest about conserving the mangrove forests after the tsunami occurred, because the villagers of Nam Rap Village realized and understood clearly the value of the mangrove forests, and that they could genuinely help reduce the impact from natural disasters. Even though the tsunami came like an elephant trying to storm into a forest, Nam Rap Village is protected by over 1,000 rai (395 acres) of mangrove forest. The community has tried to manage the mangrove forest resources by demarcating areas of conservation forest and use forest. It has also been suggested that part of the mangrove forest be used to expand the area for mooring the villagers' fishing boats, so that it can accommodate the 100 or so fishing boats in the village. The initiative would provide the villagers' fishing boats with a safe refuge from the high waves and strong winds of the monsoon season, and also in the event of a disaster like the tsunami.

From Nam Rap Village, which is a role model for community rehabilitation following the tsunami, in the afternoon we traveled onwards by long-tail boat to the destination of Muk Island, to meet with the villagers of Koh Muk Village. Mr. Aren Phrakong, Chairman of the Trang Province Small-scale Fisherfolk Society, who is in his sixties, told us how, following the tsunami, over 100 boats were lost or damaged and the homes of around a hundred families had been destroyed. During those first days and weeks, the villagers expressed the need for boats, because fishery is the main livelihood source—if they could go out to sea then they could generate an income. But the practice of fishery changed following the tsunami—ecosystems, coral reefs and seagrass beds had been damaged. So people in the four villages got together and decided to establish the Four Village Sea Zone.

An area of sea covering around 27,000 rai (10,675 acres) has been designated as a conservation zone called the Four Village Sea Zone. We have agreements about making use of the sea and its resources. We have established a Marine Task Force, which, in the southern dialect is called 'Chor Kor Lae Trang', to help take care of, and maintain, the sea. We have monitoring and patrolling to control the use of illegal fishing gears. The results have been good. In 2009, mackerel, which had long disappeared from the area, turned up in front of the island. The small-scale fisherfolk who went to sea caught between 1-2 kg per boat. Bream and squid have also returned. In the past, the villagers of Muk Island were able to catch between 200-300 Thai baht (6.2-9.9 US\$) worth of

squid per day. This year that figure has risen to over 1,000 Thai baht (33 US\$). Today the small-scale fisherfolk know there are more shrimps, crabs and fish in the sea than before, said Mr. Aren Phrakong, with a smile.

Mr. Seri Talay-luek, a small-scale fisher from Koh Muk Village, Kantang District, and a member of the Marine Task Force, explained that the task force monitors and patrols the sea so that the sea and its resources cannot be damaged and destroyed by drag-nets, fine-mesh nets, and diving for shellfish using breathing apparatus. We cannot afford to not look after the sea. The sea is our rice bowl and our curry bowl, the source of our incomes, the habitat of marine animals—it is the foundation of the lives and livelihoods of small-scale fisherfolk. If we don't take care of the sea, then we are the ones who will perish. Muk Island and Libong Island are of particular importance, because the seagrass beds around these islands represent the largest source of seagrass in Trang Province. Within the Four Village Sea Zone alone there are some 7,000 rai (2,768 acres) of seagrass beds. Seagrass beds are important not just as a source of food for dugongs, but also as spawning grounds, hatcheries and nurseries for other marine animals. If we don't conserve such resources, then how will small-scale fisherfolk live? What we are doing is preserving the way of life of the local villagers. The small-scale fisherfolk in the area of the Four Village Sea Zone are even considering expanding the zone to take in the area around Libong Island too, to protect the home of the dugongs. Around Libong Island alone there are some 12,000 rai (4,744 acres) of seagrass beds.

Today the small-scale fisherfolk of Trang Province spoke of many heartfelt issues, including the issue of fishing gears that damage and destroy marine animal species, which greatly reduce the numbers of marine animals, but which are not considered illegal fishing gears, and are supported by investors. The provincial-level policy for the conservation of the dugong creates a positive image, but does not create the necessary awareness and legislation needed to control certain types of fishing gears that are harmful and dangerous to this globally endangered species that is threatened with extinction. Such issues challenge the spirit of the villagers who have risen to the challenge of taking care of the sea and its resources. Nonetheless, in light of the ways of life, livelihoods and occupations, and abundant natural resources that have been rehabilitated, the small-scale fisherfolk from these four villages will no doubt join forces to conserve the sea and its resources with even more vigour than before, for the future of their communities, preserving the ideal that, when life comes from the sea, we must take care of it.⁵¹

NON-GOVERNMENTAL ORGANIZATIONS' AND ACADEMIC INSTITUTES' SUPPORT

Community-based organizations like the various small-scale fisherfolk organizations, together with NGOs like Yadfon Foundation, SDF and Save Andaman Network Foundation, have been working to increase the effectiveness and coverage of community-based marine and coastal resource management initiatives, aiming to develop them into area-based and ecosystem-based management initiatives. Academic institutes have provided additional momentum and support in the form of accurate scientific information, advanced mapping techniques, and broad and in-depth technical knowledge and expertise.

In 2005, the Department of Marine and Coastal Resources, with support from the Australian Government, CRC Reef Research Centre and the Southeast Asia START Regional Centre, collaborated with SDF, Save Andaman Network Foundation, Trang Province Small-scale Fisher-folk Society and FSF to implement the project 'Capacity Strengthening for Management of Thailand's Andaman Sea Coastal Zone'. The main objective of the project, which was implemented in Kantang District and Sikao District in Trang Province, was to promote the use of information technology and high-resolution geospatial data to enhance management of marine and coastal resources and facilitate stakeholder participation at all levels.⁵²

Box 5: Yadfon's Work with Small-scale Fisherfolk Communities in Trang Province

In 1985, Pisit Charnsnoh and his Ploenjai founded a small organization called Yadfon, which means 'raindrop' in Thai. Yadfon worked with impoverished coastal villagers in the province. Through their earlier work in various rural development projects, Charnsnoh noticed that the richer Thailand became, the more poverty increased.

They first visited the village of Ban Leam Markham in Muang District ('*Ban*' means 'village' in Thai.) Over the next few months, they talked to Bu Nuansri, the local *imam*, and the villagers. Conversations with villagers led them to identify and prioritize some things that were badly needed. Since the village was affected by droughts in the dry season, a plan was made to dig a community well. Yadfon provided the cement and other cheap materials while villagers made the design and provided the labour. Yadfon and the villagers also created a co-operative buying programme. This enabled the fishers to buy

fishing gear and engines for their boats and sell their daily catch at fair market prices, thereby reducing their dependence on middlemen. Earlier, they had to trade fish to pay off debts owed to the middlemen who inevitably set the prices lower than fair market value.

Another economic project created a revolving fund available to the poorest, most indebted, villagers. This helped them get small interest-free loans to set up small income-generating projects such as small-scale aquaculture. They cultivated mussels, oysters and grouper in small floating pens. At 80 per cent, the rate of repayment was very high. Additionally, their increase in income was an incentive for them to contribute part of their profits to the common village fund. While some of these projects brought mixed results, the importance of these experiments was the emergence of leaders in the villages, which was to become more important for later projects.

While these activities were being set up, villagers came up with the idea of reviving the badly degraded mangrove forests around the villages of Leam Markham and Thung Dase. In 1986, with Yadfon staff as the go-between, village representatives met with the provincial forestry authorities whose permission was needed to create a community-managed forest. A group of villagers, led by Bu Nuansri, established 95 ha of community forest, which covered Leam Markham and neighbouring villages to create a 235-acre community-managed forest and seagrass conservation zone, the first of its kind in Thailand. Boundaries of the zones were clearly marked out with signs. No-fishing areas were created, and the practice of fishing with cyanide and dynamite were discouraged, and push-nets banned. The network also petitioned the government to enforce the 3-km ban on trawlers. Seagrass was replanted in the lagoon, and mangrove seedlings were planted in degraded areas of the forest. The boundaries of the forest were clearly marked, and zones were divided up for different uses. During this time, an inter-village network emerged that began meeting, sharing information and exchanging ideas.

Community mangrove forests (CMFs) are the cornerstone of Yadfon's work with villages. Today, there are about 10 CMFs modelled after Leam Markham, ranging in size from 12 to 700 ha. Each forest is managed by the group of villages surrounding or depending on the forest. There are some 10-20 people on community forest managing committees, representing 80-200 families. Villages range in size from 600-1,500 people. While each forest has its own rules of management, none of them allows shrimp farms within forest boundaries.

There is general agreement that shrimp farms are dangerous to the mangroves, although there are many shrimp ponds in government-managed forests. Over the years, the village-managed mangrove forests have begun regenerating, and the coastal fishery has revived. Villages that are already managing CMFs have been active in advising those villages with newer community-managed forests or those who want to create one.⁵³

GOVERNMENT AGENCY AND LOCAL GOVERNMENT SUPPORT

Apart from the efforts of various NGOs and academic institutes in working together with small-scale fisherfolk communities and community organizations and small-scale fisherfolk networks, a number of government agencies have also demonstrated increasing willingness to work together with small-scale fisherfolk, particularly at the local level. Such collaboration between local government agencies and small-scale fisherfolk communities often arises as a result of co-ordination between Fisheries Volunteers, the Trang Province Small-scale Fisherfolk Society and government officers. To date, local government agencies and small-scale fisherfolk communities have worked together in addressing land entitlement issues, proposing amendments to the Fisheries Act and establishing zones for the conservation, rehabilitation and management of marine and coastal resources.

A good example of the co-operation that has arisen between local government agencies, small-scale fisherfolk communities and NGOs is the ongoing effort to protect and conserve endangered species of marine animals, particularly dugong and sea turtles. In recent decades, many of these rare marine animals have been killed, either unintentionally as the result of the use of inappropriate or illegal fishing gears or practices, or by being deliberately hunted as a valuable commodity. Although many problems still exist, as a result of recent efforts, vast improvements have been made in terms of both increased awareness of the problem as well as practical measures to protect these endangered species.

As a result of the ongoing efforts of small-scale fisherfolk communities, NGOs like SDF and Save Andaman Network Foundation, and academic institutes like Southeast Asia START Regional Centre, the level of co-ordination, co-operation and collaboration between small-scale fisherfolk communities and local government agencies has now reached a high level in Trang Province, and the nature of the relationship between small-scale fisherfolk communities and local government agencies is starting to become more formal. Significant past projects like the Joint Management of Protected Areas project and the Capacity Strengthening for

Management of Thailand's Andaman Sea Coastal Zone project have also played an important role in helping to strengthen the relationship between small-scale fisherfolk communities and local government agencies.

On 13 March 2010, Save Andaman Network Foundation, which has been the ongoing driving force behind efforts to co-ordinate small-scale fisherfolk communities and local government agencies, arranged a multi-stakeholder consultation meeting, which was attended by over 200 people, in order to try to establish more formal arrangements for co-operation on marine and coastal resource management in Trang Province. (Further details are provided in the box below.) At the same time, while discussions at the provincial level are going on, simultaneous efforts are being made to raise awareness and acceptance among central government agencies regarding the increasingly close and beneficial relationship between small-scale fisherfolk communities and local government agencies at the provincial level.⁵⁴

Box 6: Establishing More Formal Co-operation on Marine and Coastal Management

On 13 March 2010, Save Andaman Network Foundation arranged a multi-stakeholder consultation meeting at its Training Centre and Learning Station in Trang Province. The meeting was entitled 'Joint Meeting Between Trang Provincial Governor, Relevant Local Government Agencies, Marine Task Force Volunteers, Trang Province Small-scale Fisherfolk Society and Save Andaman Network Foundation'. It was attended by 216 participants, including the Trang Provincial Governor, the Kantang District Chief, the Sikao District Chief, the Palean District Chief, local government agencies related to marine and coastal resources and mangrove forest resources, the Deputy Commander-in-Chief of Trang Provincial Police, Public Volunteer Task Force for the Care of Trang Sea, Chairman and Deputy Chairman of Sub-district Administration Organizations along the coastline, Adviser to the Chairman of Trang Provincial Administration Organization and representatives of Save Andaman Network Foundation itself.

During the multi-stakeholder consultation meeting, a number of important issues were discussed, and agreements reached regarding the management of marine and coastal resources and ecosystems in Trang Province. Some of the highlights are summarized below.

Establish the Trang Province Marine and Coastal Resource Management Committee

with membership and authority as previously agreed during a joint meeting in January, and with the Trang Province Natural Resources and Environment Office being the lead local government agency.

Establish a Working Group to Study the Enforcement of Legislation to Prevent and Suppress Illegal Fishery and Fishery Dangerous to Dugong, Sea Turtles and Dolphins

using the case of the fishing boat called *Arada* to illustrate the loopholes in the present legislation, and establishing guidelines to ensure legal processes are circumspect and watertight. Also work to have a declaration made by the Ministry of Agriculture and Co-operatives prohibiting fishing gears dangerous to dugong, sea turtles and dolphins, such as ray nets or bottom longlines, with the Trang Province Fishery Office being the lead local government agency.

Providing Support, Including Budgetary Support, for the Work of the Public Volunteer Task Force, for example, in terms of boats and fuel. There was agreement to proceed in three distinct areas as follows:

- The provincial authorities will develop a project proposal to request funding from the Department of Fisheries for boats and fuel.
- The efforts to prevent and suppress inappropriate and illegal activities at sea through the monitoring and patrolling activities of the Public Volunteer Task Force and the Local Administration Organizations will be integrated, in terms of both boat fuel and monitoring and patrolling periods, in order to improve efficiency and ensure round-the-clock monitoring and patrolling.
- Trang Provincial Fishery Office will be the local government agency with main responsibility.

Campaigning and Advocating to Create Common Awareness Among the People of Trang Province in Conserving Dugong, Sea Turtles and Dolphins

Five different courses of action were discussed as follows:

- The provincial authorities will co-ordinate with educational institutes in Trang Province to have information about dugong, sea turtles and dolphins included in local curricula.
- Establishing learning centers and learning stations for the general public regarding dugong, sea turtles and dolphins, including recommendations

for appropriate behavior when engaging in fishery and tourism activities.

- Educational media and materials will be installed in important local government locations and important local tourism locations, and a Dugong Learning Center will be established at Had Yao Harbor.
- Arrange to have an annual Dugong Day. In this first year, the event will be held at Had Yao Harbor on 28 April 2010, through co-operation between the Sub-district Administration Organizations of Koh Libong Sub-district, Bang Sak Sub-district and Na Kluea Sub-district together with Marine and Coastal Resource Conservation Center 6, relevant local government agencies, Save Andaman Network Foundation and Yadfon Association.
- Arrange Dugong Day activities in Tap Tiang Town on 1 May 2010 at the Multipurpose Building of Trang City Municipality. There will be a display of children's paintings related to dugong and the Palean River, musical performances and a discussion about dugong. An artist and several companies from Bangkok will participate in the activities.
- A provincial plan for the conservation of dugong, sea turtles and dolphins has been drafted by Yadfon Association, and consultations have been held with relevant local government agencies, sub-district administration organizations, the Trang Small-scale Fisherfolk Society and the Save Andaman Network Foundation. Currently, the Trang Province Natural Resources and Environment Office is in the process of proposing the plan to the Trang Provincial Governor, so that it may be considered for declaration as a provincial plan.

Issue of Had Chao Mai Marine National Park Officials Arresting Small-scale Fisherfolk Fishing Around Kadarn Island Within the Boundary of the Park

The Trang Province Natural Resources and Environment Office is co-ordinating consultations between the communities and Had Chao Mai Marine National Park officials, in order to review information and reconsider plans to dismantle buildings and remove crops and trees in approximately 200 community plots that lie within the park boundaries. The aim of the consultations is to distinguish between community areas and livelihood areas that have been there for a long time and those that have been recently encroached, as well as to discuss guidelines for caring for forest resources with community participation.

Issue of Community Housing and Settlements

The Trang Provincial Land Office will be the lead local government agency in following up progress regarding resolving the housing and settlement problems of some 13 communities. This is ongoing work, following efforts to resolve the problems of communities impacted by the 2004 Indian Ocean tsunami.⁵⁵

IMPROVING POLICY DIRECTION

In terms of improving policy direction, there are some good examples at both the local and the central levels. At the local level, there has been positive work regarding implementing community forestry initiatives and advocating for the Community Forestry Act. While it has not been possible to have the Community Forest Act formally instated, at the local level there have been many positive examples of concrete collaboration between rural communities and local government agencies on implementing community forestry initiatives. Within Trang Province, collaboration between small-scale fisherfolk communities and local government agencies has helped to prove that community forestry initiatives can achieve positive results, and the improved relationship between small-scale fisherfolk communities and local government agencies has also help to reduce conflicts on the ground. Through such initiatives, mangrove forest resources have been successfully managed in areas like Nam Rab Village and Kho Libong Island. Improved mangrove forest management has allowed mangrove forests to rehabilitate, leaving them better able to perform their biodiversity functions—acting as nursery areas for juvenile fish and other juvenile marine animals. There have also been good examples of terrestrial forest management as well as mangrove forest management within the MPAs of Trang Province.

Another example of improving policy direction at the local level is the increasing focus on ridge-to-reef approaches. Small-scale fisherfolk communities, NGOs and local government agencies alike are becoming more aware that effective MPA management cannot focus solely on marine and coastal management alone, but must also take into account the management of lowland watershed areas and highland water sources too. In Trang Province, a network has been established to promote ridge-to-reef approaches, and in some parts of the province, concrete practice has begun. If such networks and practices can be expanded and formalized, it might lead to tangible and sustainable approaches to natural resource management on a wider scale in the long term.

There are also positive signs of improving policy direction at the central level too. As mentioned earlier in this report, the Thai Constitution (2007) includes articles to promote and support public participation in the protection, conservation, rehabilitation and sustainable use of natural resources, biodiversity and the environment. Apart from this, the draft Marine and Coastal Resources Act of the Department of Marine and Coastal Resources also aims to encourage and strengthen the participation of local communities and other local stakeholders in the protection, conservation, rehabilitation and sustainable use of marine and coastal resources and ecosystems. Currently, the Marine and Coastal Resources Act remains only a draft, and has yet to be approved by the government. Nonetheless, the Department of Marine and Coastal Resources is clearly working to lay the foundation for increased public participation, which is very promising and indicates the potential for further positive developments in the future.

IV.6 EVALUATING THE SUCCESS OF THE PROTECTED AREAS

In order to evaluate the success of the Ramsar Site 1182: Had Chao Mai Marine National Park—Koh Libong Non-hunting Area—Trang River Estuary, and of other MPAs in Thailand, we need to review the objectives of establishing MPAs in the first place. If we look at the many different policies, laws and international agreements and conventions related to MPAs in Thailand, in general, we can see that there are two main objectives, which can be broadly summarized as follows:

- to protect, conserve, rehabilitate and manage marine and coastal resources and ecosystems, biodiversity and biodiversity functions; and
- to promote, facilitate and support public participation in the protection, conservation, rehabilitation and management of marine and coastal resources and ecosystems, in order to allow the sustainable use of marine and coastal resources and ecosystems for recreation, tourism and local community livelihoods.

It is worth noting that in the past, this second objective would have not existed, or would have had a different form. This is because past national policies and laws related to MPAs placed a strict emphasis on non-use of resources. However, the use of MPAs and ecosystems for recreation and tourism is something that has been promoted, facilitated and supported from the outset. So in the past, the second objective above might instead have read ‘to promote, facilitate and support the sustainable use of marine and coastal resources and ecosystems for recreation and tourism’, without any mention of public participation and local community livelihoods.

In the past, there have been very many problems, both in terms of protection, conservation, rehabilitation and management of marine and coastal resources and ecosystems, as well as in terms of promoting, facilitating and supporting public participation in order to allow sustainable use for local community livelihoods.

A lot of positive progress has been made in recent years, in particular in terms of promoting, facilitating and supporting public participation in the protection, conservation, rehabilitation and management of marine and coastal resources and ecosystems. However, improvements in the condition of marine and coastal resources and ecosystems have been less tangible, and there has been little progress regarding the livelihood security of local communities.

Much of the progress made has been at one of two levels—either piecemeal, isolated initiatives at the local level, or promising developments at the policy level, which have not yet been translated into specific legislation, ministerial and departmental mandates, and approved plans and budgets. Little progress has been made at these intervening levels.



SECTION V:

CONCLUSION AND RECOMMENDATIONS

Based on the case study, we can see that while there has been a lot of positive progress towards ensuring the conservation of marine and coastal resources and guaranteeing the livelihood security of local communities, there are still a range of different issues that remain to be addressed. In the fourth section of this study, we identified a number of these weaknesses that are impacting upon the effectiveness of MPAs. These weaknesses are occurring at four distinct levels: the policy and legislative level; the management and administrative level; the implementation and operation level; and the local community level.

The study has identified a range of underlying issues, which need to be addressed, as follows:

- national focus should be more on holistic, sustainable development than on macroeconomic development;
- there is a need to promote and strengthen effective community participation and relax strong central government control;
- approaches to marine and coastal resource management need to accommodate communities as well as conservation;
- relevant legislation needs to be revised to make it more coherent, streamlined and up-to-date;
- co-ordination and co-operation between government agencies needs to be improved, and comprehensive area-based approaches should be more frequently adopted;
- specific legislation and departmental mandates need to be amended and accompanied by tangible planning and budgeting in support of public participation;
- enforcement of existing legislation needs to be improved;
- strict and rigid bureaucratic systems and a lack of capacity in areas like public participation, area-based approaches and integrated coastal resource management are barriers at the field level; and
- finally, all these underlying issues need to be considered in the context of the changing practices of small-scale fisherfolk themselves.

Each of these key issues is discussed in further detail below.

V.1. KEY ISSUES

a) National Focus on Macroeconomic Development

In common with many developing countries, policy direction in Thailand shows an overall tendency towards promoting and facilitating rapid macroeconomic development. Thailand's natural ecosystems and resources have had a large role to play in supporting the country's economic development. Intuitively, development that seeks to exploit natural ecosystems and resources will inevitably bring about disruption and degradation to those ecosystems and resources, and that has indeed proved to be the case in Thailand.

As regards Thailand's marine national parks, the national focus on macroeconomic development has brought with it an increase in three types of activities that have brought about disruption and degradation to natural ecosystems and resources.

Firstly, there has been an increase in commercial fishery as part of the drive to increase overall production. But commercial fishing methods, such as the use of push-nets and drag-nets, can be incredibly destructive. Furthermore, commercial fishermen often have little sense of relationship or responsibility for the natural resources and natural ecosystems they exploit, and unlike small-scale fisherfolk are able, and willing, to travel large distances to find new areas to fish when old areas become degraded.

Secondly, apart from efforts to increase production in terms of capture fishery, effort and resources have been ploughed into promoting and supporting coastal aquaculture in Thailand. Promotion of shrimp farming has severely impacted upon marine and coastal ecosystems by degrading water quality and reducing marine biodiversity. Waste water from shrimp farms has acted as a pollutant, and the areas used for shrimp farms were not only located along waterways and coastlines, but were also cut from mangrove forests.

Thirdly, promotion of tourism has also brought disruption to marine and coastal ecosystems. The development of coastal areas and the establishment of hotels, restaurants and other tourist facilities has been one problem—the Trang River Estuary Ramsar Site is itself home to a large international hotel. But other pressures from tourism on coastal resources include increased pollution from tourism waste, changes in freshwater runoff and sedimentation rates, and near-shore constructions that increase erosion.^{56 57}

b) Strong Government Control and Little Effective Participation

The Thai Constitution and a number of high-level national policies include promising provisions to promote and support the participation of local communities in the conservation, management and sustainable use of marine and coastal resources. However, in the day-to-day management of MPAs, it is the various ministerial and functional laws that govern the approaches taken much more so than national policy direction.

Although many of the relevant national policies were developed or revised within the last five years, if we look at several of the most important ministerial and functional laws that relate to the management of marine and coastal resources, we find that these pieces of legislation were developed or last revised decades ago. For example, the Thai Government's Biodiversity Policy (2009), the Fourth Policy on Land Natural Resources and the Environment (2008-20011) and the Policy, Measures and Plan for Sustainable Biodiversity Conservation and Utilization (2008-2012), together with the latest Thai Constitution (2007) are all very recent. But the National Park Act (1961), the National Conserved Forest Act (1964), Fishery Act (1947) and Forest Act (1941) are all several decades old.

The problem that arises is that when the various ministerial and functional laws were developed, there was an emphasis on ensuring strong government control, with little thought given to the role of local communities and other non-governmental actors in the conservation, management and sustainable use of marine and coastal resources. Despite promising changes in policy direction in recent years, with the intention of promoting and supporting participation, there has been little change because the associated ministerial and functional laws have not been updated to reflect such changes in policy direction. The National Coastal and Marine Policy (drafted in 2003) and Promotion of Marine and Coastal Resources Act (drafted in 2006) made efforts to promote and support public participation in the management of marine and coastal resources, but both the draft policy and the draft act have yet to be approved by the cabinet.

c) Focus on Conservation, Not Communities

A similar but distinct problem is that approaches to marine and coastal resource management, whether in terms of policy, legislation or implementation, almost always fail to consider human beings and communities as an integral part of ecosystems. There tends to be an emphasis on strict conservation of various different plant and animal species, together with the various measures and initiatives that need to be realized in order to protect such plant and animal

species, with communities considered, at best, as an external actor with some rights to access and use plant and animal resources.

The implication seems to be that communities should not be present within the boundaries of MPAs, have no legitimate role to play, and are not an integral part of the ecosystem. This view fails to acknowledge that human beings are just another species of animal, albeit a hugely influential one, and should be considered just as much an integral part of the ecosystem as are other plant and animal species. It also fails to acknowledge the reality that, in many cases, MPAs have been declared in areas where local communities had already been living for some considerable time. As a result of this, policy, legislation and implementation fail to give sufficient consideration to the potential presence of local communities, and fail to stipulate how the presence of human settlements within MPAs should be sympathetically and effectively managed.

The reality of the situation is that local communities are present within the boundaries of MPAs, and the livelihoods of small-scale fisherfolk rely upon them being able to access and make use of marine and coastal resources in a variety of ways. When policy, legislation and implementation are focused on strict conservation, this goes against the natural way of life of small-scale fisherfolk communities, since they must have access to, and be able to make use of, marine and coastal resources. When existing policies and laws relating to the management of MPAs are strictly applied, then there is a severe impact upon the lives and livelihoods of local communities, since the policies and laws are in conflict with the way small-scale fisherfolk have traditionally lived for many generations.

d) Complex, Overlapping and Outdated Legislation

As highlighted in Section II of this study, in Thailand, the number of ministerial and functional laws that apply to the management of marine and coastal resources and MPAs is very high. There are around 11 sets of legislation that are directly applicable to the management of protected areas and biodiversity, and at least at further six sets of legislation that are related in some way to the management of marine and coastal resources, for example, laws related to mineral resources, groundwater, marine navigation, oil and gas exploration, public health, building codes and city and town planning.

All of these sets of legislation were developed at different times within different government ministries and departments for different reasons and with different overall objectives. Yet, within any one protected area it is entirely possible that all of these different sets of legislation might be applied simultaneously and independently, and by different government agencies. In many cases,

the different laws apply to the same marine and coastal resources, and are therefore overlapping, but they have different objectives and stipulate different criteria, and are, therefore, in conflict with one another.

For example, the Fishery Act affords a degree of protection to coastal waters within 3,000 m of the shore, restricting the types of fishing gears that can legally be used in order to limit the degradation caused to marine and coastal resources by fishing activities. Frequently, this 3,000-m zone is fished quite legally by small-scale fisherfolk using their traditional, selective, non-destructive fishing gears. But the National Park Act, which is used to establish MPAs, completely forbids the collection or harming of any natural resources, whether plant or animal, thereby making any kind of fishing activity illegal. The question, therefore, arises as to whether the Fishery Act still applies in MPAs, and if so, do all articles of the Fishery Act apply or only some, and of those that apply, are there any amendments or extra provisions? In short, the situation is hugely complicated, especially when viewed from the perspective of small-scale fisherfolk.

Furthermore, as has been highlighted above, many of the sets of legislation relevant to the management of marine and coastal resources or MPAs were developed or last revised decades ago. Not only does this mean that these various sets of legislation are poorly aligned with recent changes in national policy direction, but they have also failed to keep pace with changing national and local situations. The emphasis on high-production, export-driven fisheries, the promotion of tourism in coastal areas, the urbanization and industrialization of coastlines and the growing realization that local communities are an integral part of marine and coastal ecosystems are all factors that are not adequately taken into account in laws and acts developed 40, 50 or 60 years ago. There is, therefore, a strong need to revise many of these sets of legislation in the light of changed contexts and revised national policies.

e) Poor Inter-agency Co-operation and Limited Use of Area-based Approaches

The complexity and confusion resulting from multiple and overlapping sets of legislation is mirrored in the situation where multiple government agencies have a role to play in marine and coastal resource management and MPA management. The table below lists just some of the government agencies and their mandate in marine and coastal resource management.

Each of these different government agencies has a mandate to apply different policies with different objectives by applying different sets of legislation, and the different mandates and operations of these government agencies can be

conflicting and counterproductive. The problem is exacerbated by the fact that there is usually very little interaction, communication and co-operation between these various different government agencies, whether at the level of the central government or the protected area.

Many of these problems, both in terms of legislation and inter-agency co-operation, could be alleviated or overcome if effective area-based approaches were applied to the management of MPAs, with clear agreements regarding which sets of legislation should be applied and which government agencies should be responsible for their oversight. But, in reality, such comprehensive and consolidated area-based approaches are rarely adopted. In the case of the Had Chao Mai Marine National Park, there is no common committee with overall responsibility for overseeing the management of the MPA. Currently, the Provincial Planning Committee has an oversight role, but this committee also has a whole host of other responsibilities, and so its effectiveness is limited. The result is that there is little close co-operation and collaboration between the various government agencies involved in the management of the protected area, which means that they fail to make the most efficient and beneficial use of the resources available to them.

f) Limited Support for Public Participation

When attempting to bring about change within government agencies, there is a need to bring about incremental changes at a number of different levels. Starting at the highest, most abstract, levels and working towards the lowest, most concrete, levels, the areas where change needs to occur are in terms of overall policy; specific legislation; ministerial and departmental mandates; planning and budgeting; capacity and experience building; implementation and operation; and change of individual attitudes and change of organizational cultures. Since government agencies are usually managed based on hierarchies of authority, change needs to occur at the highest levels first before it can gradually filter down to the implementation and operation levels. Sometimes change can occur first at the lower implementation and operation levels, but often such change is short-lived as hierarchical authority is exercised to bring things back into line.

This is very much the scenario in Thailand when it comes to promoting public participation in the management of marine and coastal resources. As explained above, promising policies aimed at promoting public participation have either not been approved and remain in draft status, as with the Promotion of Marine and Coastal Resources Act, or else have not yet resulted in the revision of related ministerial and functional laws. There have been some attempts to improve ministerial and departmental mandates to promote and support public

participation, and there have been specific projects and initiatives with limited geographic scope also intended to develop the role of local communities in the management of marine and coastal resources. But in the absence of changes in specific legislation and tangible planning and budgeting in support of public participation, any improvements in the level of local community involvement have been only piecemeal.

Apart from the fact that promising policy improvements have not been translated into changes in legislation, there are also big problems to be overcome in terms of capacity, experience and organizational culture. Many of the government agencies involvement in the management of marine and coastal resources and MPAs have operated for many years with an overall approach focused on strict conservation of natural resources where local communities are seen as a threat to nature and biodiversity, rather than as a potential actor in managing, conserving and rehabilitating natural resources or as an integral part of the natural ecosystem. (It should be noted that the Department of Marine and Coastal Resources is a notable exception, and, to date, this department has demonstrated a much more progressive approach in trying to promote and support public participation.) Bringing about change in such government agencies will involve changing mindsets and attitudes that have developed over time, and even then, capacity and experience in methods and processes to promote effective public participation will still be lacking.

g) Poor Enforcement of Existing Legislation

Although, in many cases, there exists the problem that legislation has not been updated to reflect positive policy changes at the national level, in other cases existing legislation could potentially be of benefit both to marine and coastal resources as well as the livelihoods of small-scale fisherfolk. But such legislation fails to bring about the benefit that it should, either because enforcement is poor and so individuals are able to flout the law, or else because enforcement of the law is apparently arbitrary, with different standards being applied under different circumstances.

In terms of poor enforcement, which allows people to continue to break the law, a good example is the Fishery Act. Under the Fishery Act, as mentioned above, there are provisions to provide a degree of protection to the area of the sea within 3,000 m of the shore. In this area, certain types of fishing gears, such as large commercial fishing boats using push-nets and drag-nets, are prohibited because of the severe damage they cause to marine and coastal resources. But other types of less damaging, more selective traditional fishing gears, such as those used by small-scale fisherfolk, are permitted. Such legislation is potentially of great benefit

to small-scale fisherfolk because it ensures protection for the marine and coastal resources on which they heavily depend, while, at the same time, allowing them to continue to fish using their traditional fishing gears in order to be able to maintain their livelihoods.

But the reality is that large commercial fishing boats often flout these laws and fish within the 3,000-m zone anyway. They are able to do this because of problems in enforcing the legislation. Some of the problems relate to the laws themselves. For example, if a large commercial fishing boat is illegally using push-nets and drag-nets within the prohibited 3,000-m zone, all the crew need do in order to avoid prosecution is to stop their engines and bring in their fishing gears before the authorities arrive. Even if they are prosecuted, the penalties they face under existing legislation are too low to act as a useful deterrent, given the high value of the marine produce they are able to regularly catch. Other problems are more operational, such as insufficient budget, boats and staff or bureaucratic hindrances, which are an obstacle in terms of being able to carry out regular, comprehensive patrols in order to identify and apprehend offenders.

In terms of the arbitrary application and enforcement of the law, with different standards being applied under different circumstances, a good example is the legislation that relates to land ownership and land use in protected areas.

h) Limited Capacity and Bureaucratic Hindrances at the Field Level

When problems occur within marine national parks, the various government agencies involved often cite a lack of budget, manpower, equipment, vehicles, time and other resources. This is often the result of the segregated approach taken, with each different government agency acting independently and in isolation, according to its own mandate, which makes it impossible to establish combined plans and budgets or to formally create common mandates to allow concrete collaboration to proceed within the marine national park.

This situation is compounded by strict and rigid bureaucratic systems, which afford field-level officers very little flexibility in adapting to changing situations and circumstances within the marine national parks, and instead forcing them to proceed with previously identified and established objectives, plans and budgets. The objectives, plans and budgets of government agencies are often defined on a yearly basis and well in advance of implementation and operation. If situations and circumstances change at the field level within individual marine national parks, or if requests are received for ad hoc assistance and intervention, either from local communities or from other government agencies, field-level officers often do not have the flexibility they need to be able to respond.

In terms of capacity, in areas where field-level officers already have strong capacity, they are often not able to bring as much benefit as they might, because they have to work within the strict and rigid bureaucratic systems mentioned above. But in other areas, field-level officers may lack capacity. For example, capacity may be high in terms of approaches and methods aimed at the strict conservation of marine and coastal resources and biodiversity, but capacity may be considerably low in areas like processes and procedures for promoting and supporting public participation, ecosystem approaches, area-based approaches and spatial planning, and integrated coastal resource management.

i) Changing Practices of Small-scale Fisherfolk

The vast majority of small-scale fisherfolk are very much aware of the importance and value of marine and coastal resources. In many cases, present-day small-scale fisherfolk families are just the latest of very many previous generations of small-scale fisherfolk families. With such a long history and heritage of living closely and in harmony with the sea and its resources, they possess both instincts and a wealth of traditional knowledge on how to manage marine and coastal resources in a sustainable manner. Even households that are relative newcomers to small-scale fishery, and who may have migrated from other, non-coastal areas of Thailand, quickly come to realize how intrinsically their fates, and the well-being of their families and communities, depend on their ability to conserve, rehabilitate and manage marine and coastal resources so that they are maintained over the long term.

But there has always been a minority of small-scale fisherfolk who are willing to sacrifice long-term sustainability for short-term benefits, who are ready to prioritize their own interests above the need of other households and other communities, and who ignore the damage and degradation they cause to the local environment. Such individuals have resorted to unsustainable, inappropriate and illegal fishing gears, such as longlines, fine-mesh crab traps, diving apparatus to collect shellfish, and even the use of poisons and explosives. Such fishing gears and practices devastate marine and coastal resources and can destabilize and threaten otherwise healthy and secure ecosystems.

Over the past 40 or so years, a whole range of both internal and external factors have brought about huge changes in the lives of small-scale fisherfolk families and communities, threatening their traditional livelihoods. Increased expectations regarding quality of life have meant a move away from subsistence fishing towards the search for financial profits. Increasing competition for marine and coastal resources from the commercial fishery and tourism sectors have increased the strain on both small-scale fisherfolk and local ecosystems. These factors increase

the pressure on small-scale fisherfolk to move away from traditional practices and towards less sustainable and more damaging practices.

Another way in which small-scale fisherfolk communities have changed internally is that some households have moved away from traditional marine capture fishery altogether. Instead, they have picked up other, completely different, livelihoods and occupations, such as in aquaculture fishery and rubber plantations. Although perhaps not as obviously and directly damaging to marine and coastal resources as inappropriate and illegal fishing gears and practices like the use of poisons and explosives, such changes in livelihoods and occupations have also had a considerable impacts on marine and coastal resources.

V.2. ANALYSIS OF OPPORTUNITIES AND THREATS POSED BY THAILAND'S CBD STRATEGIES AND PROGRAMMES OF WORK

To properly evaluate Thailand's CBD strategies and programmes of work, they must be reviewed based upon an understanding of the current situation and context with regards to the management of marine and coastal resources and biodiversity within the country. Some of the underlying issues that cause management regimes to fail include:

- strong government control and little effective participation
- focus on conservation, not communities
- complex, overlapping and outdated legislation
- poor enforcement of existing legislation
- limited capacity and bureaucratic hindrances at the field level

We have not listed all the issues again here, but instead have chosen to focus particularly on those issues that will impact upon the implementation and realization of Thailand's CBD strategies and programmes of work.

Importantly, as was discussed and highlighted, when attempting to bring about change within government agencies, there is a need to bring about change at a number of different levels, progressing from overall policy, through specific legislation, ministerial and departmental mandates, planning and budgeting, capacity and experience building, and finally arriving at the levels of implementation and operation, change of individual attitudes and change of organizational cultures. But when it comes to promoting public participation in the management of marine and coastal resources in Thailand, what we find is that promising policies aimed at promoting public participation have either not been approved and remain in

draft status, or else have not yet resulted in the revision of related ministerial and functional laws.

It is in this context that we need to consider Thailand's CBD strategies and programmes of work. If we examine Thailand's National Biodiversity Strategy Action Plan 2008-2012, and, in particular, the plan's set of 21 indicators, we find that some elements have the potential to pose a threat to small-scale fisherfolk communities and their lives and livelihoods, some elements of the plan could potentially be a threat or an opportunity depending upon how they are implemented, while some other elements would appear to represent clear opportunities. To give three specific examples:

- The indicator 'At least 20 per cent of marine and coastal areas in Thai waters to be designated as protected areas' could represent a threat to small-scale fisherfolk communities if the management regime emphasizes strong government control with little effective participation and a focus on conservation, not communities.
- The indicator 'At least one site of seagrass beds and dugong habitats to be designated as a protected area' could represent a threat if strict conservation measures conflict with the traditional fishing practices of small-scale fisherfolk communities, or else the same indicator could represent an opportunity if traditional fishing practices are encouraged so long as they are benign and sustainable, since the conservation and rehabilitation of seagrass beds and dugong habitats could potentially improve overall species biodiversity and increase populations of marine animals.
- The indicator 'At least one mechanism, practical guideline, criteria of regulation to facilitate sustainable use, access and benefit sharing from the use of biodiversity' could represent an opportunity if the mechanism, guideline, criteria or regulation enshrines the rights of small-scale fisherfolk communities to access and use marine and coastal resources in a sustainable manner, and if the mechanism, guideline, criteria or regulation was actually applied in implementation and operation at the field level, as opposed to becoming just a 'paper exercise'.

In essence, then, Thailand's National Biodiversity Strategy Action Plan 2008-2012 contains both potential threats and potential opportunities for small-scale fisherfolk communities, and much hinges upon the implementation approaches and operational practices adopted at the field level. And this is where the overall context and underlying issues highlighted above become a critical and deciding factor. Thailand's National Biodiversity Strategy Action Plan is just that – a plan.

If specific legislation, ministerial and department mandates, and planning and budgeting are not reviewed, updated and brought in line with the plan, then the overall situation for Thailand's marine and coastal resources and small-scale fisherfolk communities is unlikely to change or improve. Instead, elements of the plan that fit well with existing legislation, mandates, plans and budgets will tend to be adopted and implemented, while those elements of the plan that contradict or conflict with existing legislation, mandates, plans and budgets will tend to be overlooked and ignored. The result? Underlying issues are unlikely to be addressed and positive change is unlikely to be brought about. The challenge, then, for Thailand's government agencies is to find a way to move beyond promising policy, and to bring about tangible, deep-rooted and lasting change.

V.3. SUMMARY AND CONCLUSIONS

In the last few sub-sections of this study, we have explored the reasons why the management of marine and coastal resources and biodiversity in Thailand is failing to be as effective as it could. It must be acknowledged that in recent years, a tremendous amount of positive progress has been made across a range of sectors, whether through the efforts of local small-scale fisherfolk communities themselves, through the various initiatives and projects of NGOa, academic institutes and research centres, or through the ongoing efforts of the relevant government agencies, departments and ministries. But much remains to be done to ensure that marine and coastal resources and biodiversity are adequately protected, and that traditional small-scale fisherfolk livelihoods are sustained over the long term.

Much of the positive progress we see at the moment is occurring in the form of piecemeal, isolated and short-lived initiatives, projects and programmes, where much of the benefit gained is temporary, and is realized at the local level in geographically or administratively restricted areas or regions. Why is this?

We can group and summarize the various different problems and issues discussed over the previous sub-sections, and in doing so, arrive at just four key obstacles that need to be addressed to achieve more effective marine and coastal resource management in Thailand:

- Changing socioeconomic contexts at the global, national and local levels are placing increasing strain on limited marine and coastal resources. Over the past 40 years or so, Thailand has undergone tremendous changes in its pursuit of economic growth at the national level, while at the local level, rapidly changing expectations regarding standards of living and quality of

life have seen a move away from subsistence livelihoods to an increased focus on monetary income.

- Despite great advances, generally, at the policy level, small-scale fisherfolk still have no formal, established identity within the existing policy and legislative frameworks, meaning that there is frequently a failure to identify and address the issues that affect their livelihoods and well-being. This is compounded by the fact that, despite improvements having been made, there is still a tendency to focus on conservation rather than communities.
- There is a significant disjoint between national-level policy and legislation and local-level implementation and operation. Promising changes in policy direction fail to bring about tangible, widespread and lasting changes at the local level because the intervening levels of legislation, bureaucracy and administration are resistant to change.
- There is a lack of co-ordination, co-operation and integration between the various organizations and agencies related either directly or indirectly to the management of marine and coastal resources and biodiversity, which leads to, at best, inefficient and incoherent, and, at worst, conflicting and counterproductive implementation and operation at the local level. The lack of coherence between the approaches and practices of the various different organizations and agencies reflects a similar need to greatly rationalize the overly complex legislative framework applicable to resource and biodiversity management.

V.3.1. RECOMMENDATIONS FOR GOVERNMENT AGENCIES, CIVIL SOCIETY AND THE INTERNATIONAL COMMUNITY

The identity of small-scale fisherfolk has to be formally established in law and policy. Processes and mechanisms must be put in place to ensure the specific needs of small-scale fisherfolk are identified and accommodated with respect to issues that affect their livelihoods, for example, fishery management, MPA management, international conventions on nature and biodiversity conservation, and national development policy.

National development policy must consider and accommodate all of the nation's assets and resources in an integrated manner, and not focus solely on economic growth. Economic growth must not occur at the expense of natural resources (for example, marine and coastal ecosystems and biodiversity), cultural resources (for example, areas of outstanding natural beauty and the traditions and ways of life of coastal communities) and social resources (for example, the livelihoods

of small-scale fisherfolk communities). National development policy must ensure these other kinds of resources are conserved, rehabilitated and developed in a sustainable manner.

Conceptual, policy and legislative frameworks related to the management of natural resources and protected areas need to be completely overhauled so that rural communities are no longer viewed as a threat to natural ecosystems and biodiversity, but are instead considered an integral part of natural ecosystems and biodiversity, with a key role to play in the protection, conservation, rehabilitation and sustainable use of natural resources and the environment. In particular, since, in many cases, rural communities have lived sustainably in certain areas over periods of many years before they were declared protected areas, provision must be made to ensure their continued, unhindered access to, and use of, land, sea and natural resources.

Policy provisions to support decentralization of control and public participation must be brought to fruition by ensuring that corresponding change occurs in terms of specific legislation, ministerial and departmental mandates, planning and budgeting, and implementation and operation. Decentralization of control must allow local government agencies, local administration authorities and rural communities the freedom and flexibility to quickly and comprehensively respond to local contexts, situations and issues, free from bureaucratic hindrances and limitations resulting from nationally imposed legislation, mandates, plans and budgets.

Public participation must be ensured at all stages, including development of policy and legislation, participation in international agreements and conventions, establishment and demarcation of protected areas, development of natural resource and protected area management regimes, and action for the protection, conservation, rehabilitation and sustainable use of natural resources and the environment. Implementation and operation that reflects local public opinion are the most reliable indicators of effective public participation.

All existing ministerial and functional laws related to the management of marine and coastal resources and MPAs, whether directly or indirectly, must be reviewed and updated as an urgent priority. In revising existing legislation, consideration must be given to addressing four key issues.

- Firstly, much greater clarity must be achieved regarding which laws are applicable and take precedence under different circumstances and within different jurisdictions, for example, within MPAs.

- Secondly, existing legislation must be brought in line with changes that have taken place in national policy direction, example, policy initiatives to promote and support public participation in the management and sustainable use of natural resources, for which there is little tangible support in terms of ministerial and functional laws.
- Thirdly, existing legislation must be updated based on a realistic appraisal of current national and local situations, which have changed significantly since the laws were originally drafted, example, the emphasis on high-production, export driven fisheries, the promotion of tourism in coastal areas, the urbanization and industrialization of coastlines and the increasing risk and impact from natural disasters and climate change are all factors that are not adequately taken into account.
- Finally, existing legislation must be brought in line with changes in the duties and authorities of government agencies, particularly where new government agencies have been established. For example, the Department of Marine and Coastal Resources currently has no specific legislation to support its operation. The draft Promotion of Marine and Coastal Resources Act initially showed promise, but it remains in draft status and multiple revisions have greatly reduced its potential beneficial impact.

Inter-agency co-operation and the use of area-based approaches should be systematically and continuously promoted and supported in order to help alleviate existing problems resulting from the conflicting and counterproductive mandates and operations of different government agencies. Processes and mechanisms should be put in place to ensure there is interaction, communication and co-operation between these various different government agencies, whether at the level of the central government or the protected area. Greater use of area-based approaches should be made in the management of MPAs, with clear agreements regarding which sets of legislation should be applied and which government agencies should be responsible for their oversight.

Urgent efforts must be made to greatly improve the enforcement of existing legislation for the benefit of both marine and coastal resources as well as the livelihoods of small-scale fisher-folk. Attention should be focused on two main issues.

- Firstly, in cases where it is not possible to enforce existing legislation, or where levels of enforcement are low, efforts must be made to close legal loopholes, increase the effectiveness of deterrents such as financial penalties, and provide adequate operational support, example, in terms of budget, boats and staff.

- Secondly, efforts must be made to ensure that existing legislation is enforced consistently and fairly in all circumstances and with all offenders. Currently, there are huge inconsistencies, example, community agricultural plantations are destroyed but luxury international hotels are allowed to operate.

Limitations in terms of capacity and bureaucratic hindrances must be addressed in order to ensure effective implementation and operation at the field level in the management of marine and coastal resources and MPAs. In terms of capacity limitations, two distinct areas need to be considered and addressed.

- Firstly, government agencies need to ensure their staff have the budget, manpower, equipment, vehicles, time and other resources needed to be able to work effectively at the local level.
- Secondly, capacity-building programmes must be established for field-level officers to raise knowledge and understanding and build skills and expertise in disciplines such as promoting and supporting public participation, ecosystem approaches, area-based approaches, spatial planning and integrated coastal resource management.

In terms of bureaucratic hindrances, government agencies must build flexibility into their objectives, operational procedures, plans and budgets so that field-level officers are afforded the freedom to adapt to changing situations and circumstances occurring within individual MPAs.

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