



A comparative analysis of three marine governance systems for implementing the Convention on Biological Diversity (CBD)



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ABSTRACT

Successful implementation of the Convention on Biological Diversity (CBD) requires critical reflection on governance structures especially in the biodiverse tropics where institutional capacity is weak and fragmented. This paper explores three modes of marine governance in Thailand and discusses the challenges each faces when delivering conservation and sustainable development objectives. Focusing on Marine Protected Areas (MPA), the dominant management approaches to biodiversity conservation, centralised, decentralised and shared governance, are scrutinised through a review of the literature and 24 key informant interviews with leading Thai academics, national and regional government officers and NGOs. We find both the centralised, state-managed MPA system and the decentralised, community-based MPA system to have severe limitations, for different reasons, in protecting biodiversity, whereas shared governance, despite being less common, is the best intermediate mode. Shared governance is the most viable option available in Thailand for working towards key CBD targets because: (1) local participation can legitimise much of the relationship with the centralised system and can help embed a decentralised system in natural resources management; (2) the centralised system will still remain in ultimate control, which, whilst not favoured by those who want decentralisation, will satisfy powerful elites, and offer more opportunity to empower local people to take responsibility for conservation targets; and (3) the capacity of both local and national stakeholders can be built to deal with the complexity of the marine environment.

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1. Introduction

The 1992 Convention on Biological Diversity (CBD) is the overarching framework for stemming and reversing biodiversity loss by “the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of benefits arising from the use of genetic resources” [51]. Central to achieving these key goals – conservation, sustainable use and equitable share – are governance structures, which are most likely critical to implementing successful conservation of biological diversity [3,4]. References to governance are frequent in key policy documents surrounding the CBD and particularly in the Aichi targets, such as target 11 for Protected Areas (PAs), which refers to “formal inclusion in the national systems and practicing of various governance types” [6]. Yet little critical reflection or guidance is

given on the challenges posed by different governance structures for implementing the CBD, especially in the biologically rich tropics where institutional capacity is often fragmented and weak [4].

In this study, we explore the modes of marine and coastal governance in place to progress biodiversity conservation in Thailand and discuss the challenges they face in doing so. Thailand was chosen as a case study for two reasons. First, because it is a biodiversity hotspot – this area has been identified as the most northerly limit of Malesian flora meeting biota from the Indo-Himalayan and Indo-Chinese sources which has resulted in an extremely high concentration of biogeographic complexity and biodiversity [50]. Second, Thailand has a long history of establishing protected areas – it has one of the oldest protected areas (PA) systems in tropical Asia, the first PA was inaugurated in 1961 and, as a proportion of national territory, is stated as one of the world's largest PA systems owned and governed by the state [21], although official statistics on coverage are lacking. Moreover, Thailand endorsed the Convention on Biological Diversity (CBD) in 1992 and ratified it in October 2003. This resulted in extensive efforts to document the country's natural assets and review conservation

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activities and capacity within governing institutions for the formulation of the National Biodiversity Strategy and Action Plan (NBSAP), which coordinates national interests and actions required under the CBD. In Thailand's current NBSAP at least 20% of marine and coastal areas are to be designated for protection by 2020.

However, recent political instability and administrative inertia within centralised institutions ingrained in traditional approaches to management is affecting the way that Thailand's MPAs are functioning. As with many other coastal nations, Thailand uses MPAs as its key mechanism to deliver biodiversity protection in the marine environment. These MPAs are generally managed under three different institutional structures: a centralised system focused around the state-managed MPAs known as Marine National Parks (MNP) and the most dominant mode; a decentralised system represented by locally governed/community-based managed (CBM) MPAs; and shared governance which includes co-managed (Co-M) MPAs. This study examines these three modes of governance by assessing the challenges each faces in implementing successful marine biodiversity conservation. Our findings are that both the centralised, state-managed MPA system and the decentralised, community-based MPA system suffer from severe limitations (for different reasons) for protecting biodiversity. Shared governance, despite being less common, is the best response to implementing conservation policy, because it enables capacity building to take place at both local and national levels so each can assume appropriate levels of responsibility.

2. Methods

Two main sources of data were used. First, a systematic review of Thai literature was undertaken, sourced through government, university and non-governmental organisation (NGO) websites which supplied much of the grey literature, white papers and approved translations of Thai legislation. Obtaining versions of the literature in English was a limiting factor, but much was available from industry bodies, government departments and Thai and foreign academics. Some of these documents were peer-reviewed while others ranged from personal perspectives to institutional recommendations and advisory reports. Bibliographical databases were searched to access articles on Thailand in English in academic journals, monographs and reports.

Second, 24 key informant (KI) face-to-face interviews were conducted between January and February 2012 with leading academics, national and regional government officers and NGOs. Government officers and NGOs were identified through consultation with the International Union of the Conservation of Nature (IUCN) in Bangkok, whose staff are members of steering committees on a range of environmental projects and are acquainted with key personnel from many government departments. Local key informants were selected through the provincial and regional government offices, mainly the Department of Fisheries (DoF) and the Department of Marine and Natural Resources (DMCR); and through the local Tambon Administration Offices for local elected leaders. Once a preliminary list of KIs was compiled and interviews commenced, snowball sampling was employed with the interviewees to recruit other suitable informants. The selection criteria for national and academic informants were that they should have worked in some capacity on MPAs during the last 10 years, with some insight into management, and that the interviews could be conducted in English. For local officers/leaders, the objective was to obtain as wide a range of perspectives as possible in the given time. These interviews in almost all cases were conducted in Thai, face-to-face through an interpreter. Fourteen national key informants were interviewed and ten local officers/leaders.

Community group interviews were also conducted in eight villages between February and June 2011, which supplied data on the informal governance structures and interactions with local officials in the region. Key informants data in this paper is referenced in square brackets [], and coded as [Nat. GO #n] for interviewees who are national level government officers; [Lo. GO #n] for interviewees who are local level government officers; [Ac. #n] who are members of an academic institution; and [NGO #n] who are members of a non-government organisation. Data taken from the literature is numbered in parentheses.

3. Theory

3.1. The Convention on Biological Diversity (CBD) and good governance

The Convention on Biological Diversity (CBD) obliges countries which have ratified the Convention to protect their biodiversity. With ~85% of terrestrial [45] and 100% of the marine environment (41% strongly) affected by human activity [17], global diversity is decreasing as increasing numbers of species on land and at sea are experiencing threats of extinction [32]. The CBD is the overarching framework for stemming and reversing this trend, and with 190 signatory nations, this convention is far-reaching. The Convention recognises that biodiversity loss mostly arises as a secondary consequence of economic activities such as agriculture, forestry, fisheries, water supply, transportation, urban development, and energy [46]. Therefore dealing with these factors is a key obligation. The Convention does not set particular targets for each country as its provisions are expressed as overall goals i.e. to work towards achieving components under the 20 Aichi targets relevant to individual nations. The responsibility for determining how provisions are implemented falls to signatory nations so that circumstances specific to each country can be taken into account [46]. However, the 2010 deadline for achieving overarching targets were missed [2,29,47] and we are half way toward the 2020 deadline with little sign of biodiversity loss abating [18,48].

Given the stance of the CBD as guide-line targets only, the structure of governance for implementing biodiversity conservation is not prescribed beyond the principle of 'good governance' (GG). GG is a set of overarching principles that promote participation, transparency and fairness (see [28]), which not only challenges illegitimate regimes but is advocated as a means for solving environmental problems such as climate change, food security and biodiversity loss [30,40]. However, the principles of GG are ideals, and their application on the ground is never complete but always involves compromise, trade-offs between power structures, and hidden agendas. As stated by Balmford et al. [1]

"Most of us behave as if our ongoing destruction of biological diversity and natural ecosystem has a net beneficial effect on our personal well-being. This is because it often has - locally, in the short term, and for people with the most power" (p. 212)

Obtaining GG is thus deeply problematic, and its implementation "calls for improvements that touch virtually all aspects of the public sector" ([16], p. 525). Often countries most in need of GG are institutionally weak, their leadership corrupt and civil society disempowered and disenfranchised, which means they stand little chance of achieving GG. To deal with this reality, Grindle suggests the concept of 'Good Enough Governance' which stresses priorities relevant to individual countries focusing on feasibility rather than a daunting list of 'must haves' as "institutions and capacity-building are products of time" (2004, p. 554). This paper explores these fundamental challenges and critiques Thailand's progress

toward improved biodiversity conservation with the different governance structures in place.

3.2. Alternative modes of governance

There are three broad modes of governance in the literature: centralised; decentralised; and shared. Centralised governance is the most common form found in past colonial and post-colonial societies [9] and has been described by Imperial and Yandle [23] as the default position. Sometimes referred to as hierarchical governance, this mode is 'state-centric' and includes top-down structures, centralisation, bureaucracy, command and control, and scientific elitism [15]. Bureaucratic arrangements typify this mode of governance where property rights are held by the government on behalf of the people and national regulations are developed to manage them [23]. Orders and directions come from the top and work their way down for implementation. In Thailand, the centralised mode of governance is exemplified in the system of 'National Parks' (NP).

However, across the developing world, decentralised governance has been evolving since the 1970s and elements of it are now present in over 80% of developing and former communist countries, focusing on lower levels of government involved in management [39]. De Oliveira discusses three forms of decentralisation; (1) deconcentration; (2) delegation and; (3) devolution.

"Deconcentration implies the transfer of tasks in a government agency from central offices (generally located in the capital) to offices located closer to the served population... Delegation, in contrast, involves decentralising tasks from the central government to other public organisations such as special function agencies or public corporations. Devolution entails the complete transfer of decisions regarding certain public responsibilities from a central government to a lower level government." ([39], p. 1715)

The form of decentralisation most relevant to the present study is devolution to local communities – i.e. community-based management (CBM)- which has a long history in the marine environment in Southeast Asia, often involving a large number of stakeholders, with local government and NGO support [10].

The third mode of governance is shared governance, which has emerged more recently as a means of implementing natural resource management. Shared governance, often synonymous with the term co-management (Co-M), is defined as "the sharing of responsibility and authority between government and the community" ([42], p. 466) and can be understood as a "two-track approach" at a local and national scale, usually involving two or more groups. Co-management can be viewed as a more mature process than CBM where policy-makers and resource users have both a willingness and a capacity to collaborate [9].

4. Natural resource governance in Thailand

In Thailand, the deputy prime minister (2010–2014) and past minister of the Ministry of Natural Resources and Environment (MoNRE), Plodprasop Suraswadi, has repeatedly stated his belief that "man [sic] and nature cannot coexist". This belief informs the centralised, top-down way in which the country has managed and enforces its Protected Areas (PAs) which include both terrestrial and marine ecosystems and are the bedrock of Thailand's natural resource protection strategy [21]. In Thailand, the dominant environmental discourse is that humans are harmful to nature, so that non-human species must be protected from human damage by being located in specially-guarded areas. This belief is used to

weaken counter arguments for greater community involvement and management in the country's PAs ([14], p. 208), because Thai officials place little trust in local people whose resource needs are perceived as a threat when they reside in, or near, the country's remaining natural landscapes [5].

Nevertheless, opposition to this prevailing centralised mode of governance has been growing, and community rights to natural resource management have been advocated and campaigned for decades, resulting in the drafting of the Community Forest Bill in the early 1990s and more recently the Marine and Coastal Resource Management Bill drafted in 2007. However, neither Bill has been ratified. One official in 2001 declared that "local communities 'cannot possibly' manage coastal resources 'because they do not have the right.'" ([24], p. 124), and legislatively this is still the case. But it is also increasingly acknowledged in Thailand that new approaches to the management of marine resources are needed [22,36], with an emerging paradigm for more public participation in natural resource management more widely.

"Support should be given to empower communities and to advocate their rights to gain access to and utilise natural resources. Amendments to legislation are needed to address inequality among communities regarding access to and utilisation of natural resources." ([36], p. XXI)

This paradigm shift was manifested in the 1997 'People's Constitution' which refocused centralised decision-making towards citizen involvement, with the objective of serving wider societal interests rather than just those of the country's elites [26]. The People's Constitution advocates public participation in natural resource management and environmental preservation;

"The State shall promote and encourage public participation in the preservation, maintenance and balanced exploitation of natural resources and biological diversity and in the promotion, maintenance and protection of the quality of the environment" (1997: Article 79)

The People's Constitution was followed by the National Government Decentralisation Act in 1998 and the Reform Act in 1999 to address what was perceived as an ineffective centralised system. The aim was to replace it with an efficient, integrated and participatory system of governance and to resolve problems of overlapping and competing jurisdictions within government agencies. These developments have "marked a new era in Thai governance and administrative reform" ([22]: 35).

So the current mode of marine governance in Thailand is conflicted between two competing discourses: (1) the historically dominant discourse of centralised management; and (2) a modern challenging discourse of decentralised management.¹ The centralised discourse is underpinned by four key Acts of Parliament that govern the marine and coastal areas (Table 1). All these Acts impact on MPAs but the key pieces of legislation are the National Park Act B.E. 2504 (1961) and the Fisheries Act B.E. 2490 (1947). The National Park Act governs terrestrial and marine parks as non-extractive use areas (recreation only), with no private ownership, whilst the Fisheries Act applies species and gear specific management, as well as separating small-scale from commercial fishing areas.

Along with the four Acts, the National Economic and Social Development Plans (NESDP) are important guiding documents. These plans make recommendations to the Thai cabinet and prime minister on key government policies and major development projects and cover five-year periods. Past plans, reflecting the

¹ The terms 'dominant discourse' and 'challenging discourse' are taken from Foucault.

Table 1
Key legislation for marine and coastal areas in Thailand.

Act	Departments	Ministry	Description
Fisheries Act, B.E. 2490 (1947)	DoF	MoNRE	Regulates inland and marine fisheries and aquaculture. Classifies 'fisheries' as; (1) preservation fisheries; (2) leasable fisheries; (3) reserved fisheries; and (4) public fisheries. Preservation fisheries are no-take areas. Leasable and reserved fisheries are restricted by licensees unless for subsistence [freshwater only]. Public fisheries are open access.
National Park Act, B.E. 2504 (1961)	DNP	MoAC	Regulates 'National Parks' comprises 'land', 'woody plants' and 'animals'. No land determined as national park can be owned or legally possessed by anyone other than the state. All terrestrial and marine national parks forbid extraction, but can support non-extractive activity such as tourism and recreation.
Wildlife Preservation and Protection Act, B.E. 2535 (1992)	DoF-aquatic DNP -wildlife RFD-plants	MoNRE	Regulates the hunting, possession, breeding and trade of wildlife in Thailand. Wildlife sanctuaries and no-hunting wildlife areas are regulated under this Act by the DNP. 'Wildlife Sanctuaries' are strict no-entry, no-hunting zones. 'No-hunting Wildlife Area' are areas where people can frequent but not hunt.
National Forest Reserve Act B.E. 2507 (1964)	RFD	MoNRE	Regulates protected forests for biodiversity and water-shed management. No forest determined under this Act can be owned, cleared, burnt or products collected. Logging and collection under permission of the ministry only. Degraded forests can be reclassified under the land reform scheme.

centralised discourse, have focused on the establishment of PAs. The current NESDP (2012–2016), reflecting the decentralised discourse, is focused on public participation, with “the representation of stakeholders from every segment of Thai society... so that every segment has equal opportunity and access to resources to benefit from development fairly” (2011: Foreword). The current plan acknowledges the severe degradation of coastal areas and their inadequate management, and recommends that “the management system governing land ownership and marine and coastal resources should undergo reform” (2011: XX); that conservation lands should occupy at least 19% of total area, and forest reserves up to 40%; that at least 5000 rai per year is required for mangrove reforestation; and that communities should participate in coastal management for sustainable fisheries. This plan is extensive and ambitious, but there is no overarching plan for its implementation in either terrestrial and marine PAs [13,22].

5. Results and discussion

The results of the study show that there are three modes of marine governance in Thailand: centralised; decentralised; and a mixture of the two.

5.1. Domination by the centralised system of resource governance

5.1.1. Department of National Parks

Thailand's national system of marine resource protection is predominantly centralised and bureaucratic. At the heart of the centralised system are the Department of National Parks (DNP) and the Department of Fisheries (DoF). The DNP has jurisdiction over 20% of state-held land containing the vast majority of the country's natural resources and is at the centre of natural resource protection. The National Park Act is administered at the national level through a superintendent and non-local teams in each park. Managerial arrangements are made in Bangkok with little input from site-level staff [13] or local people.

Many criticisms have been made of the way the DNP has administered the national parks (NPs). One criticism is about the practice of unofficial grading for NPs, which are termed as A, B, or C parks, with the last informally known as ‘punishment parks’. ‘A’ grade parks are highly visited and therefore have high potential for generating revenue, and often higher management is ‘sponsored’ into the position in exchange for privileged access to revenue streams offered by the park. ‘C’ grade or ‘punishment parks’ are remote, unvisited and low earning; they are reserved for new officers, or those who have challenged the *modus operandi*. ‘B’ grade

parks fall in between [Nat. GO #3; Ac. #4]. This practice is very problematic, because it supports inertia, prioritises revenue above protection, limits positive and proactive change, and encourages officials to service the networks that placed them there rather than to improve the well-being of a location [21].

Another criticism is that in almost all marine national parks (MNP), whilst traditional extraction is outlawed, tourism-based operations are not restricted. Tourism is viewed as low impact, yet infrastructure developments, such as site-hardening, accommodation and ‘beautification’ can be invasive and damaging. Critics highlight the bias towards the anthropogenic enjoyment that ‘parks’ tend to support rather than the conservation of biological diversity [8].

A further criticism is that to reduce conflict and tension, multiple-use permits are allowed on a case-by-case basis in most MNPs [13], under the ‘whim’ of individual superintendents. Therefore, behind the façade of a national system of protected areas, almost all sites are actually governed on an *ad-hoc*, site-specific basis [Nat. GO #3; NGO #4]. There are no guidelines for local management because the National Park Act does not recognise locally-based management. A key informant [Ac. #4] said that NPs have become hotspots for marketers, investors and venture capitalists who grab land and destroy much of the traditional resource management systems that local communities previously put in place.

Accordingly, although local people are critical of the NP system when restrictions are placed on them, there is a genuine concern for resource depletion and many local people feel that stronger management is required. Many local people support no-take areas in principle [Lo. GO #7; Lo. GO #8], but past arbitrary management of MNPs and a failure to protect parks from commercial fisheries has left high levels of mistrust and scepticism of the centralised management system [Nat. GO #2; Nat. GO #3; NGO #3; Ac. #4]. The establishment of new MNPs is now viewed with increased concern as many local residents believe ratification brings degradation to sites previously unknown and unfrequented [NGO #4]. As a result, several proposed MNPs have been blocked by local opposition and stalled for years during the process of consultation which the 1992 National Environmental Quality Act (NEQA) legislates as necessary to obtain local support of all future protected areas [31].

5.1.2. Department of Fisheries

The second key institution in marine resource management, the Department of Fisheries, has sole responsibility for fisheries management in Thailand. A centralised department with provincial offices, the DoF has until very recently been focused solely

on fisheries development and on maintaining a productive and profitable industry [37]. To improve export revenue, the Thai government with agency assistance subsidised fleet expansion in the 1980s [11]. The result is that the DoF is now left with the difficult task of reducing the country's over-sized fleet and restoring over-exploited stocks in Thailand's Economic Exclusion Zones (EEZ) [Nat. GO #4]. This shift from a development to a conservation, or sustainable exploitation agenda, has prompted a shift away from a centralised development strategy towards more localised management measures. Historically, the DoF has focused on macro-level policy - the 'larger picture' of the size of the fleet, catch per unit effort and limiting/banning destructive gear from its waters - but with the inauguration of the Tambon Act (local government) 1994, micro-level issues of local management have challenged the traditional approach of this department [Nat. GO #4].

This shift has been fraught with difficulties, however, because the government points to an aged legal framework and the open access nature of Thai fisheries as the causes of overfishing [27], whereas the general public attributes overfishing to overlapping jurisdictions of different agencies leading to poor enforcement of fisheries laws. Both interpretations, it would appear, have credibility. Open and free access has resulted in displacement of fishers between seas when restrictive measures are put in place, and local resentment is common, with local management being undermined due to fishing by visiting vessels [Nat. GO #4; Ac. #2; Ac. #4]. The Fisheries Act has no set limits regarding the number of fish taken, nor effective enforcement of catch size beyond MLS, while gear type restrictions have not kept pace with the change in fleet composition. Knight et al. [27] found extensive confusion at a government level about enforcement mechanisms, which has resulted in local communities attempting to establish informal regulations to control the rate of decline of marine and coastal resources [31]. Whilst local fisheries officers have a better local image than have national park officers, most probably because of past development agendas, as resources have degraded and conflicts increased between users, the DoF is increasingly being viewed as ineffective at a local level when conflict resolution or restrictive legalisation is required [Lo. GO #7; Nat. GO #6].

5.1.3. The 'fortress' concept of conservation

Underlying the centralised mode of natural resource protection is the 'fortress' concept of conservation. The fortress concept reflects the view that humans are external to the natural ecosystem, exerting pressure on it from outside, and that the best way to protect natural resources is to keep humans away, which entails establishing PAs from which humans are excluded, often termed no-take zones (NTZ). Middle-class fears of lost wilderness and natural equilibrium [14] reinforced the fortress model and ensures that Thailand's NP have remained, on paper, NTZs. Advocates of the fortress concept see the centralised natural resource protection as a mode which must continue if key CBD targets are to be met [Nat. GO # 1].

The adoption of the National Biodiversity Strategy and Action Plan (NBSAP) to deliver the CBD targets reinforced the dominance of the centralised system, and sector agencies currently in charge of biological resources are being held responsible for achieving this international commitment [Nat. GO #1]. In Thailand, there is no shortage of legislation to protect biodiversity, though there are inadequate resources to enforce it;

"there were fourteen Acts, two cabinet resolutions, five national plans and policies (including the NBSAP) and two departmental regulations related to the conservation of biodiversity. Thus, limited achievement in conserving biodiversity is not due to inadequate legislation, but rather to a lack of

efficient capacity to enforce and implement provisions of the existing laws and regulations." [22]

This highly protective fortress model has been combined with a continual drive for growth, and as a leading agricultural exporting nation, Thailand is a classic example of a country being required to "do more with less" resulting in intensive farming (shrimp and rice farming are two examples) in the remaining available space ([12], p. 857). So NPs and the ecosystems protected within them are often functioning in isolation, whilst surrounding areas are being intensely cultivated to support local livelihoods and boost economic output.

5.1.4. Has centralisation got a future?

Because of the dominant position of the state's structure, centralised governance of natural resources in Thailand is set to continue into the future. But there are four issues that need to be addressed to create a centralised system that could meet CBD requirements. (1) There needs to be a standard, fair and consistent enforcement of the rules that are considered legitimate by those most affected, and the people who bear most of the impact from restrictions should be compensated for their losses. (2) Tourism needs to be balanced with other forms of sustainable resource utilisation. Not all MPAs are suitable for tourism ventures, and in many areas local people have no desire to be exposed to tourism, so management should permit the MNP model to consider sustainable extraction. (3) Natural Resource Management (NRM) legislation needs to be reviewed and integrated to deal with the unique challenges posed by the marine environment. It was acknowledged in the CBD third national report [38], that management principles of MNPs need reviewing in Thailand to remove their inappropriate terrestrial foundation within the National Park Act (1964), and sustainable resource extraction should be a central consideration in this review. (4) Conservation needs to be taken seriously by the state and performance measured, because protected areas are commonly perceived as green washing² and a thin veil for development of tourism [13,43,8].

5.2. A decentralised system of resource governance

The historically dominant centralised, fortress mode of natural resource governance in Thailand is facing increasing challenge by a decentralised, community-based mode of natural resource governance. Critics of the fortress concept claim that humans are an integral part of the social ecological system and an important factor in shaping the natural environment. In Thailand, this 'parks versus people' debate has taken the form of top-down NP protection versus bottom-up community management which is exemplified in the Community Forest Bill. However, although decentralisation has been proposed for decades and legislated for through the Decentralisation Act 1999, limited headway has been made to streamline legalisation to fully support this mode of governance [Ac. #1; NGO #2; NGO # 4; Ac. #4; Lo. GO # 7]. At present, the weakest form of decentralisation - deconcentration - is the most commonly promoted in Thailand. The most extreme form of decentralisation - community-based governance - is the least promoted, though the principle of community participation lies at the root of all forms of decentralisation.

5.2.1. Deconcentration

Deconcentration is the approach formulated in the Tambon Administration Organisations (TAO) Act (1997) whereby tasks are transferred to local offices for implementation [44], though

² "disinformation disseminated by an organisation so as to present an environmentally responsible public image" Resource: Oxford English Dictionary.

administrators are still accountable to the higher echelons of power rather than to the local populace. The strength of the hierarchical system is such that provincial and district leaders are for “want of a better term, absentee administrative lords of TAOs” [44], p. 43) as the local office is still dependent on the centralised office for its budget, instructions and decision-making rules [22,39]. This persistent hierarchalism is reinforced by the fact that provincial governors and sub-district officers have power under the 1994 Tambon Act to remove any elected Tambon member on: (1) behavioural or moral grounds; (2) poor performance; or (3) if they are perceived as having a conflict of interest [33,34], and it is unclear how these faults are defined. TAOs are mandated to produce local environmental plans every five years, which includes PAs in the administration area. Communities within or adjacent to such areas can input into PA management through the TAO planning document. This is generally coordinated through a village head, or Community-Based Organisations (CBOs). This structure is enjoying increased growth and influence and includes private sector stakeholders consisting of tour operators, commercial fishers and swift nest collectors³ [22]. However, local community members, especially small-scale resources users, whilst “aware of their legal rights to access and participate in local resource management [are] unsure on how to exercise those rights” and local buy-in for sustainable management or resource protection is still low (Wright 2009, p.3). Targets under the CBD in Thailand tend to bypass local officials apart from requesting approaches to environmental education and incentives for improved compliance [22], p.55). Little influence over, or responsibility for, delivery of CBD goals has been established at the Tambon level (Emphandhu and Chettemart 2003). For example, the participation of local people, and the monitoring and controlling of human impacts in PAs were given low priority in the country's CBD national plan, which is a major concern given that the PA system is home to the vast majority of the country's biodiversity.

5.2.2. Delegation

Delegating responsibility for natural resource management to special agencies or public organisations is not common in Thailand. Agencies such as the UN and the International Union for the Conservation of Nature (IUCN) are often on steering committees for government projects, but administrative responsibilities are invariably held in government departments. Large NGOs who have been favoured by donor agencies since the 1990s and are abundant in Thailand, generally have mandates which fall outside the realms of government [Nat. GO #6; NGO #4]. Programmes often overstate the influences NGOs have in policy formation, and underplay the influence local people have legally at their disposal through the decentralised structure [25]. This is not to underestimate the value NGOs bring in Thailand, but they are remote from government and often perform under their own mandates which are set external to the state.

5.2.3. Devolution

For many commentators, devolution lies at the heart of decentralisation [39], falling into the category of bottom-up or community-based management (CBM) [9] in the MPA literature. Devolution has been promoted for decades in Thailand, but is yet to have a serious impact on natural resource management. Historically local management in Thailand was through the traditional system of *Puu Yai Baan* (village leader) and *Kham nan* (sub-district chief) and was considered a ‘channel of transmission’ from the

district level to people on the ground who could ‘get things done’ [44]. Devolution since the 1990s attempted to introduce locally-elected provincial governors and rural administration units, the TAO, that were answerable to the local electorate. However, locally elected provincial governors were never introduced, because of strong opposition from the Ministry of Interior, though the TAO was established under the Tambon Council and Tambon Administration Act in 1994 [33,34]. Under this Act a range of responsibilities were devolved to the smallest administration unit (sub-district – a group of between 6 to 10 villages). Some of these local responsibilities were mandatory and others optional. The “protection, supervision and maintenance of natural resources and the environment” is one of the nine mandatory services the TAO has to provide. This mandate is clearly stated in the two local administration acts – TAO Act 1994 and the Decentralisation Act 1999.

However, devolving services to local authorities has proved problematic in some cases [33,34]. For example, the DoF handed over 1000 fish ponds to local authorities to maintain and manage, but because funding is limited to the maintenance of old projects, most of these ponds were abandoned [33,34]. This problem arises because financial autonomy has yet to be allocated, and because the necessary expertise is not always available at a local level for the maintenance of infrastructure such as ground water systems [Lo. GO #7]. The more serious problem of devolving the duty of meeting CBD targets is that Thailand's CBD targets are a national obligation, so any TAO which has relevant resources under its ‘jurisdiction’ will be instructed by a centralised department, since ultimately the buck stops with the government rather than with the TAO.

The most devolved form of decentralisation, community-based management (CBM) is not as common in Thailand as in other Southeast Asia countries. Traditional forms of community management through the *Puu Yai Bann* and *Kham nan* system are widespread, but these tend to be ruled by district and provincial elites. This structure has cultural components linked to the age-old patron–client relationship, as locally elected representatives have to ‘look after their flock’ and report up to higher echelons of power. Rural areas are more exposed to paternalism than are urban areas since provincial and central governors still consider it their role to ‘take care’ of rural residents because of lower levels of education [33,34]. The patron–client relationship remains one of the more powerful systems for getting rural voters’ voices heard and is often reinforced by the ‘clients’ themselves as many view their own role as completed at the closing of the ballot boxes [Nat. GO #6; Ac #2]. They have picked, elected or pledged loyalty to their patron and it is now his/her job to represent their needs and support them.

CBM, however, has its own limitations. For example, because of severe resource depletion in a large bay in southern Thailand, pilots projects were undertaken by the DoF and small-scale fisheries during the 1990s that involved extensive stakeholder participation and community rule-making [37]. The objective of these pilots was to eventually transfer permitting, zonation and enforcement to the local region. However, the power to arrest for fisheries violations was kept firmly under the jurisdiction of the DoF through their fisheries patrol unit functions at a provincial level, despite the fact that the *Kham nan* (yet not the TAO) always had powers to arrest and confiscate gear [49]. Defending its decision to withhold this power from the TAO, the government stated that local leaders and community members were not willing or able to take full responsibility for the area, especially for the sanctioning of rules, because of ‘fall-out’ from powerful outsiders [37] higher up the political food chain.

5.2.4. Has decentralisation got a future?

If decentralisation for natural resource management and biodiversity conservation is to move forward, several conditions must

³ Swift nests are edible bird's nests particularly prized in Chinese culture. They are among the most expensive animal products consumed by humans and are harvested along the coastlines of Southeast Asia.

be met. First, it requires a supportive legal framework. In one important respect, fisheries governance naturally lends itself to decentralisation, as centralised governments, especially in developing countries, have minimal capacity to monitor, study, patrol and enforce fisheries regulations, whereas local communities are able to oversee their own areas. However, local community management can only succeed if they can draw on a legal framework to underpin their decisions.

Second, decentralisation requires sensitivity to the circumstances that are particular to each region, which in turn requires responsiveness to local stakeholders. For example, embracing an ecosystem-based approach in this process is important, and local groups have shown high awareness of the particular ecological risks in their areas and have demonstrated the capacity to effectively respond at short notice [33,34]. Balancing expert and local participation, however, is challenging in decentralised management [41] as experts' access to the volume of information required (often centrally held) far outweighs that of local peoples', yet both bring knowledge at different scales. This brings us to the third model of natural resource management – shared-governance.

5.3. Shared-governance system of resource management

Shared-governance in Thailand generally means community-based projects with local government support or NGOs proposing conservation projects and seeking community engagement. This form of governance is less common than the previous two, but both the 10th (2007–2011) and 11th (2012–2016) NESDP have been heavily influenced by the Thai King's Sufficiency Economy (SE) concept, which is a philosophy which stresses the growth of community capacity and participation for natural resource conservation with co-management as a mechanism [35]. This philosophy, along with widespread recognition of the failure of the state to curb environmental destruction [19], has resulted in the implementation of some large-scale natural resource management projects which promote shared-governance as their preferred model. One such project is in the farming sector. There has been much political protest in Bangkok during the past 30 to 40 years over farmers demanding the right to remain within, and farm, degraded land adjacent to NPs. A draft forestry bill which supports inhabitants' rights to legally remain within and co-manage forest lands has been circulating since the 1980s, but is yet to be formally ratified [Nat. GO #1]. However, local needs have forced the consideration of multi-use areas [Lo. Go #6; Nat. GO #4; Ac. #1], and regional management arrangements mainly at a provincial level have been negotiated. The Community Forest Bill has legitimised some of these negotiations in forested areas, which trades off 'use' in buffer zones in exchange for compliance with strict protection of core zones.

Shared governance in fisheries, however, appears a little more advanced, possibly because of the state's incapacity to monopolise sea use in the same way it can control land use. Whilst un-owned land is a rarity in Thailand, the provision for un-owned fish which are free in their natural environment and can be legally exploited by anyone capable of catching them, means that marine property rights are not as restrictive as land property rights, and co-managed arrangements can be accommodated more easily in the marine environment. Local fisheries institutions have validated co-management arrangements by entrusting some management rights to local groups, ignoring gaps in current legislation [20]. Therefore, co-managed arrangements with well-defined relations between the local people and the DoF, whilst not yet common, are being explored [Nat. GO #4].

5.3.1. Co-management Projects

One such project was the Coastal Habitat and Resource Management (CHARM) project which was a Thai Government-

European Union collaboration that ran from 2002–2007 and highlighted the inefficient use of marine resources as a result of institutional failing. This project aimed to introduce coastal resource co-management as a viable alternative to centralised management. The approach was to define issues that needed to be addressed at a site level and then formulate ideas which resolved them at a local scale, for example establishing no-trawl areas and the removal of destructive fishing gears to improve inshore catches [7]. The process would then become a model which could be applied to a variety of situations in other regions [19]. However, the project was initially handicapped by internal disputes between the DoF and the newly created DMCR in 2002 which led to 200 DoF staff being taken to form the DMCR, resulting in un-cooperative behaviour. The 2004 Asian Tsunami dissolved this dispute but understandably also changed the project's objectives to include aid relief as well as the promotion of co-management. Nevertheless, the project has been claimed as a success both because fish yields in the co-managed areas have increased ([7] [Nat. GO #4]) and because it developed a model for Integrated Coastal Zone Management that can be applied elsewhere in the Thai context.

Another important project which involved collaboration between local people and the DNP was the Joint Management of Protected Areas (JOMPA) project which commenced in 2004 with the objective of developing participatory joint management structures for protected areas. The project worked at a number of levels to draw in key stakeholders to address the loss of biodiversity, degraded ecosystems, and reduced livelihoods, and to expand the opportunities for the rural poor in 11 terrestrial and marine national parks. Centring on the DNP, a temporary provision had to be made to allow community involvement, as this was not authorised under the National Park Act. Whilst some of the project's objectives were achieved, such as the establishment of the Protected Area Committee (PAC), and community rules were drafted, the 2004 Asian Tsunami refocused the project so that the rehabilitation of communities and natural resources become the priority. The PAC was, however, an interesting outcome and one that remains in one marine National Park as a tool to gather information and complaints from local people about resource management [Lo. Go #1: Lo. GO #6]. Whilst the PAC is a solid start for co-management, there is no legal requirement for any PA to have a PAC – it is at the discretion of each park superintendent [31].

A more ambitious attempt to introduce Co-M into the Thai approach to natural resource management is the draft Marine and Coastal Bill, which is an integrated bill for coast, islands and sea under the Department of Marine and Coastal Resource (DMCR). Based on the 1992 NEQA, the bill aims to formalise co-management between three levels of administration: national; provincial; and local, each overseen by a committee. The bill is all-encompassing under eight ministries and numerous departments and is a solid attempt to integrate principles from the Thai King's self-sufficiency (SE) philosophy and the wider-known concept of sustainable development (SD) into nationwide legislation. Section 17 of the bill outlines duties for coordinated, realistic and informed management approaches involving public participation through provincial and local committees. Local committees are to be established in each coastal community and would include representatives from traditional occupations, such as fisheries, farming, and trading, and different demographic groups, such as housewives and youth groups. Community zones are proposed in this bill under the remit of the local committees, which are required to prepare management plans to include demarcation, regulations of use, compliance, enforcement and conflict resolution for the approval of the Provincial Committee. The Provincial Committee has specific responsibilities for preparing and

proposing management plans that combine local approaches, whilst approving or adjusting local marine and coastal resource management plans. This bill began as a document with 300 sections, was redrafted down to 160 sections and was later cut to 23 sections where it currently remains. All integrated approaches have been removed from it, and only the right for the DMCR to establish MPAs remains [Nat. GO #1]. The bill was an ambitious undertaking, and the review of fisheries legislation since the ratification of the UNCLOS may provide an opportunity to re-present some of its frameworks for supporting shared governance.

5.3.2. Has shared governance got a future?

If shared governance is to expand in Thailand, three changes need to take place. First, the successes and lessons learnt from projects such as CHARM and JOMPA need to be applied when and where relevant to other areas of the coast. Both projects involved substantial international funding which is not a sustainable option, but Thailand now has a working model and increased capacity to take the lead especially within departments like the DMCR and DoF. Second, empowerment of local communities is needed, and mechanisms are required to incorporate local management ideas [Ac #1; Ac. #4]. Third, a legal framework recognising community management is required to support shared governance, and whilst the proposed bill by the DMCR appeared too radical, the path has already been laid by the 1992 NEQA, so communities and shared governance should be under serious consideration for the soon-to-be-updated Fisheries Act [Nat. Go #1]. As prescribed under the CBD, MNPs need to look at conservation together with sustainable utilisation, because the current conservation-only system is ineffective at best, or damaging to the marine environment at worst. Shared governance is a viable option given the structure and capacity currently in place.

6. Conclusions

This paper has tried to unravel the complexity of marine resource management in Thailand. There is considerable documentation on terrestrial management, but the marine environment is relatively new on the conservation agenda. However, since Thailand's ratification of the CBD and more recently the UNCLOS, more attention is expected to focus on marine governance. The potential for more effective management of the marine environment is considerable, drawing on Thailand's experience of terrestrial management.

From the results of this study, shared governance is the most viable option available in Thailand to meet the CBD targets, for the following reasons: (1) local participation can legitimise much of the relationship with the centralised system and can help embed the role of a decentralised system in natural resources management; (2) the centralised system will still remain in ultimate control, which makes shared governance arrangements more acceptable to powerful elites in the cities, and offers more opportunity to empower local people to take responsibility; and (3) the capacity of all stakeholders can be built to deal with the complex problems of the marine environment. Currently fisheries and coastal communities have the knowledge and understanding of working on marine issues but lack management experience, while the reverse is true of government departments. Therefore a structure for shared governance is required before marine resource management can move away from the current centralised system to a decentralised mode of governance capable of sustainably managing the resource within CBD guidelines on behalf of the Thai nation and its future generations.

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