Community-based wetland management at Goot Ting marshes, northeast Thailand: implications for policy and practice

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Abstract: Wetlands cover around 36,616 km^2 or 7.5% of Thailand's land area. The majority of the 42,000 wetland sites have no formalised, legal protection. This paper reports on a new wetland management approach for communities to manage a seasonally inundated wetland, Goot Ting marshes, in Nong Khai Province, northeastern Thailand. Activities undertaken under this initiative comprised participatory research on the natural resources to identify the biodiversity values and users within the wetland. The boundary and two recognised zones of the community-managed wetland were demarcated. Each zone had specific rules drawn up. Two new institutional bodies for community wetland management – at provincial and wetland level – were established for the management of Goot Ting marshes. This grass-roots initiative provides strong impetus towards a new community-based, conservation agenda for wetland management. Thailand should adopt suitable community wetland legislation and formulate community wetland policy, recognising customary rights to govern and manage wetlands.

Keywords: community-managed wetlands; freshwater; Goot Ting marshes; northeast Thailand; Ramsar; wetlands.

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1 Introduction

1.1 Relationship between communities and wetlands

The value of wetlands in tropical countries is enormous, especially for food security, water supply and for their cultural importance (Barbier, 1994; Constanza et al., 1997; Junk, 2002). In Thailand, the economy of the people living in many parts of the country must have been intimately involved with wetlands for perhaps as many as 6,500 years, before the beginnings of rice cultivation became evident (Scott, 1989). The Middle Mekong Valley is believed to have been the site of the first rice cultivation some 6,000–5,500 years ago (Griffin, 1973; Huke and Huke, 1990; Solheim, 1970). Wetlands have been important as a source of water and food, including fishes and shellfishes, aquatic invertebrates, as well as wildlife and plants including algae; they sustain the living standards of millions of people. In the Lower Mekong Basin, fish and other aquatic animals are the most important source of animal protein for approximately 60 million inhabitants; average fish consumption ranges from about 30 kg per capita in mountainous areas to 70 kg per capita in the Great Lake Tonle Sap area in Cambodia (Sverdrup-Jensen, 2002).

In Thailand, wetlands cover some 36,616 km^2 or 7.5% of the nation's land area according to a national wetlands inventory conducted in 1999 (OEPP, 1999), of which 44.9% are freshwater habitats and 55.1% are coastal habitats. The preparation of this inventory also identified 61 wetlands of international importance, 108 sites of national importance and an estimated 42,484 locally important sites. These sites comprise 25,008

streams, rivers and canals, 14,128 lakes and ponds, 1,993 marshes and inundated plains as well as 1,256 estuaries, mudflats, mangroves and coral reefs (OEPP, 1999).

1.2 Economic benefits derived from wetlands by communities

Wetlands are amongst the world's most productive ecosystems (Barbier et al., 1997), being described as 'biological supermarkets' because of the extensive food-webs and rich biodiversity they support (Mitsch and Gosselink, 1993). In Thailand, very few assessments of these biological supermarkets and the economic and ecosystem services provided by the wetlands have been undertaken. At Nong Bong Khai Non-hunting Area, a lake in northern Thailand, the annual income generated from capture fisheries by 118 households was calculated at 47,583 baht per household (approx. US$1,143 per household); the capture fishery was valued at 3,660,714 baht (approx. US$87,935) annually within the lake (Janekrankij, 2005). In the lower Songkhram River, northeast Thailand (Pakdee, 2007), the estimated economic value of the river basin averaged 32,794 baht/annum/household (approx. US$931/annum/household) for 2006–2007.

On the Mun River, the operation of the Pak Mun Dam reduced household income from fishing by nearly 90% for 6,176 households (50 Euro from 432 Euro/year, or approx. US$51.55 from US$445.36). One year following opening of the water-gate, the income recovered to 166 Euro/household/year (approx. US$171.13/household/year) (Amornsakchai et al., 2000). In the Krabi estuary, use of mangrove was calculated at 8,266 baht/household/year (approx. US$196.72), comprising 2,266 baht (approx. US$53.93) generated from timber and 6,000 baht (approx. US$142.79) generated from mangrove, non-timber forest products. The villagers also caught fish, crabs, mollusks and other aquatic fauna in the estuary averaging 57,650 baht/household/year (approx. US$1,372/household/year) (Janekrankij, 2005).

1.3 Protection of wetlands

As of 30 December 2008, Thailand had designated 10 sites as Ramsar sites as sites of international conservation value. However, representation of freshwater wetlands, particularly marshes, has been poorly represented in the protected area system of Thailand (Kasetsart University, 1987; MacKinnon and MacKinnon, 1986). One or two national parks and wildlife sanctuaries protect low-lying freshwater wetlands, notably the seasonally inundated marsh at Khao Sam Roi Yot National Park and the peatswamp forest within Chalerm Pa Kiet Wildlife Sanctuary, but most parks and sanctuaries protect watersheds. Some of the most nationally important wetlands – 20 in total – have been designated as non-hunting areas (Parr, 1995); of which 11 were listed in the Directory of Asian Wetlands as sites of international value (Scott, 1989). However, a few sites of national value, together with the 42,484 locally important wetlands identified in the national inventory have been afforded no formal protective measures, aside from local community initiatives.

1.4 Wetland degradation and loss of livelihood

Huge areas of Thailand comprise habitat which formerly would have been wetlands; e.g., 1.9 million ha in the Central Plains region (Scott, 1993). In recent decades, land development has accelerated with the construction of a great many reservoirs for

irrigation, flood control and latterly hydropower; often the local communities have not been involved in the planning and implementation of these projects, resulting in negative impacts on these communities (Scott, 1989). The great increase in land under cultivation, combined with intensive, often unsustainable, human use of all those small wetlands which remain, has greatly modified these wetland habitats. In northeastern Thailand, which is recognised as the poorest region within the country, efforts to develop the region have intensified within recent decades, with strong emphasis on agricultural intensification, which often have affected wetlands and wetland use by local communities negatively (Wolstencroft et al., 1989).

Mangrove and other coastal ecosystems have been affected more recently, with clearance for the establishment of shrimp farm aquaculture (Barbier, 2000; Barbier et al., 2002; Hinrichsen, 1998; Spalding et al., 1997). Estimates vary, but some place Thai mangrove losses up to 50%–65% due to conversion since 1975 (Sathirathai and Barbier, 2001). The associated mudflats remain, although local reclamation for aquaculture and industrial development has taken place. Thailand has lost 20%–30% of its seagrass beds through siltation and pollution (Sheppard et al., 1989; UNEP, 2004). Some 24% of the estimated 1,787 km^2 of coral reef were described in poor condition from destructive fishing techniques and significant bleaching episodes (Yeemin et al., 2001). In addition, many tropical wetlands are being directly exploited, often through non-market, 'informal', economic activity to support human livelihoods (Barbier, 1993).

1.5 Lack of recognition of traditional rights

One of the major problems with regard to wetland management in Thailand is that the traditional local users of wetlands resources often do not have their traditional rights to these ecosystems recognised, and therefore are not properly involved in the management and control over the wetlands resources. Consequently, these important habitats are liable to suffer degradation at the hands of wealthier sectors of society, altering land use and impacting sustainability, without benefiting the poorer members of the population.

1.6 Legal aspects regarding the community management of wetlands

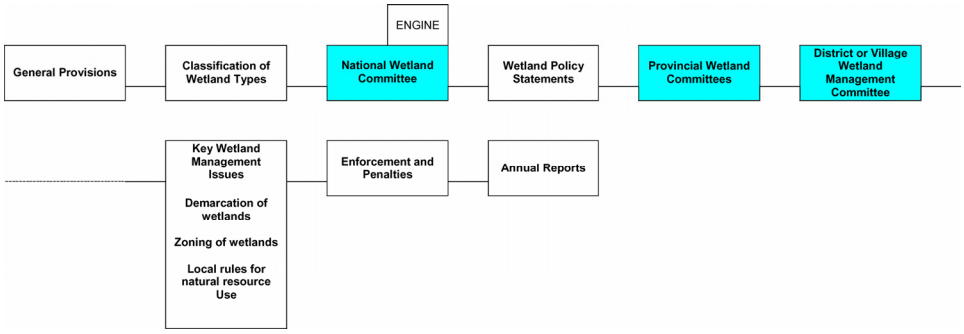
The Constitution (1997) of the Kingdom of Thailand – which has since been abrogated in 2007 – provided a progressive legal framework for natural resource management, not only for the citizens of Thailand but also from an international perspective. Part 3 Section 12, Articles 66–67 and Part 5 Section 8, Article 85 empowered traditional communities and communities, respectively, to participate in the management, maintenance, preservation and exploitation of natural resources, while Article 290 encouraged public participation in the preservation and exploitation of natural resources. The keywords are 'communities' and 'natural resources'. In most Asian countries, community-based wetland management appears to have been overlooked.

By comparison, in many of these countries, the establishment and management of community forests is a well-versed natural resource practice throughout Asia, and at the global level. Examples are cited in Sokhun et al. (2005) for Cambodia; FOMACOP (2001) for Lao P.D.R.; ESSC (1998) for the Philippines; the Asia Forest Network (1997)

for India, and the Government of Namibia (2005). In Thailand, the draft Community Forestry Bill has been formulated over a period of a decade to provide a legal umbrella for the nation's community-managed forests.

There is potential to formulate a parallel legislative framework which focuses on wetlands through which communities traditionally harvest – or 'participate in the management, maintenance, preservation and exploitation of' – natural resources. Figure 1 shows model legislation for community wetland management based upon the draft community forestry law (Parr, 2007). The initiative 'Community Management of Wetlands in Thailand and the Mekong River Basin' was designed by WWF Thailand staff to test this legal model. A selection of wetland types located in northern and northeastern Thailand was targeted for grassroots interventions, as the main engine for wetland management policy change. This paper reports on the activities and community management achievements made at Goot Ting marshes.

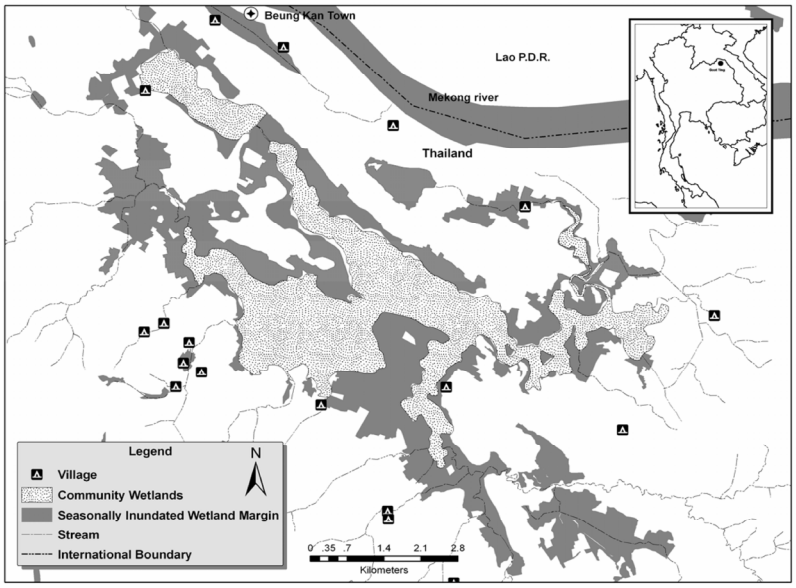
Figure 1 Legal model generated for community wetland management (see online version for colours)



1.7 Overview of Goot Ting marsh

Goot Ting marsh covers 2,485 ha (15,533 *rai*) located 5 km to the south of the district town of Bueng Kan, in Bueng Kan District, Nong Khai Province. The site is an extensive marsh, which has been partially dammed to store water in the dry season; it drains north into the Mekong, some 5 km distant. Numerous dirt tracks lead to the waterbody from Highway 222 which skirts the southwestern periphery. Although the reservoir is shallow, with maximum depths of 2–5 m, there is always a considerable expanse of water even at the height of the dry season. The site was recognised as a site of international conservation value by Wolstencroft et al. (1989) and recommended for Ramsar designation. Figure 2 shows the location of Goot Ting marshes and the 19 villages located around the wetland.

Figure 2 Location of Goot Ting marshes in northeast Thailand and the 19 villages whose members utilise the natural resources from the wetland



2 Method

2.1 Developing a model for community management of wetlands

2.1.1 Orientation phase

Background information was collated on both community forestry and wetland rules from other villages in northern and northeastern Thailand, including maps, and the membership of local institutions. To strengthen stakeholder participation, training manuals were prepared for implementing wetland use planning and wetland allocation activities. Staff and officials from key government agencies were trained for implementing wetland use planning and wetland allocation activities. The sub-district officials and village representatives were given orientation in each of the targeted communities around Goot Ting marshes through small formal/informal meetings and workshops. Three field trips were organised for the key stakeholders (communities and government officials) from Goot Ting to villages managing natural resources – community forests and/or wetlands – in various parts of northern Thailand.

2.1.2 Institutional support

At the provincial level, the project staff aimed to encourage the establishment of a new institutional body – a provincial wetland committee – as a sustainable institution for wetland management to provide technical support and financial support to the local-level wetland management committee(s), including endorsing the community wetland agreements. At all stages, 'collaboration' was emphasised, drawing local communities and local government officials together; this strategy aimed to assist conflict management at the project site.

2.1.3 Participatory natural resource research

Data were collated about the communities, their natural resources and their traditional ecological knowledge. In depth, collaborative, baseline socio-economic surveys were conducted of the households in the villages around the wetland. Collaborative monitoring was undertaken involving the communities on four key wetland issues, namely on

1 the fisheries with the local Department of Fisheries officials

2 aquatic plant utilisation with the Department of Fisheries and the Department of National Parks officials

3 pesticide and fertiliser utilisation with the Regional Environment Office and local Agriculture Department officials

4 waterbirds with the Department of National Parks officials.

2.1.4 Boundary demarcation and zoning

Wetland boundary surveys were conducted around the seasonally inundated marsh and the boundary demarcated. Research analysis workshops were organised to blend the villagers' traditional ecological knowledge with the research data on the fisheries, aquatic plants, pollution and waterfowl. In addition, surveys of the community wetlands – including temporary pools – and community forests in relation to village boundaries were conducted. The results of the intensive wetland research were interpreted utilising wetland use mapping. The villages' and wetlands' landmarks and topographic features were surveyed to establish village reference points. The village wetland zones (and agricultural zones in inundation areas) were identified. Information was gathered on village land tenure, land use and land claims in inundation areas.

This village information was analysed to determine wetland and agricultural allocation criteria. Village meetings were held to verify land ownership, review land claims and allocate wetlands. Wetland use zoning maps were utilised to discuss wetland use management with communities before allocating wetland zones. Wetland (and agricultural land in inundation areas) field measurements were conducted. Wetland agreements which conferred management rights to the villagers were prepared. Monitoring and evaluation systems were established on zoning and wetland use through field visits and villager interviews.

3 Results

3.1 Key institutional arrangements

As a result of the project, the following committees were established or mobilised:

3.1.1 District wetland management working group

On 20 June 2007, the Governor of Nong Khai issued Nong Khai Provincial Order No. 1536/2007, formally recognising a district wetland working group at Goot Ting marshes. Membership comprised the Chief District Officer, village representatives (notably the heads of the relevant sub-districts: Tambon Administration Organizations) and key

representatives from each of the concerned government departments: fisheries, land, agriculture, water and irrigation. The membership and functions of this district-level wetland management committee incidentally mirror the arrangements for protected area committees established by the Director-General of the Department of National Parks, Wildlife and Plant Conservation for national parks and wildlife sanctuaries; however, for other smaller community-managed wetland sites, this should not be expected to be the case.

3.1.2 Provincial wetland committee

On 25 January 2006, the Governor of Nong Khai issued Order No. 164/2549 establishing the Nong Khai Provincial Wetland Committee. This was the fourth provincial wetland committee to be mandated in Thailand; the first three provincial wetland committees had primarily been mandated to supervise the preparation and implementation of a wetland management plan for a Ramsar site. In sharp contrast, the Nong Khai Provincial Wetland Committee was mandated to monitor the participatory natural resource research at Goot Ting marshes. It also ensured all the government officials participated fully in the field activities, according to their respective mandates. Of note, the membership of this Nong Khai Provincial Wetland Committee was modified on 17 June 2008 to reflect a provincial-wide approach to community wetland management throughout the province.

3.1.3 National wetland committee

The National Committee for Wetland Management was appointed by the Thai National Environment Board on 1 July 1993. The committee is chaired by the Deputy Permanent Secretary of the Ministry of Natural Resources and Environment with members comprising representatives from relevant agencies, while the Office of National Environmental Policy serves as the secretariat. Prior to project implementation, the main objective of this committee had been to provide guidelines and coordinate actions on wetland management through the formulation of a national wetland policy. Other responsibilities included supporting and monitoring the implementation of the Convention on Wetlands, preparing a national inventory of wetlands, and providing a for a for coordination between the relevant agencies. As a result of project implementation, the National Committee for Wetland Management developed its role in the management of Goot Ting marshes, as a model community-managed wetland.

3.1.4 Project steering committee – geared towards sustainability

The project executants invited four nominated members from the National Committee for Wetland Management in addition to representatives from the key wetland government agencies and four members from the national level, Technical Sub-Working Group on wetlands to become members of the Project Steering Committee for the project. They helped to monitor and evaluate the achievements of the project and disseminate these results to other key resource personnel. The selection of the Project Steering Committee reflected a strong recognition of the potential legal mandate of its members towards the development of a community-managed wetlands' agenda at the national level.

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1.2 Economic benefits derived from wetlands by communities

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1.4 Wetland degradation and loss of livelihood

Huge areas of Thailand comprise habitat which formerly would have been wetlands; e.g. 1.9 million ha in the Central Plains region (Scott, 1993). In recent decades, land development has accelerated with the construction of a great many reservoirs for

52 aquatic dicotyledons, six ferns and two algae species were recorded within Goot Ting marshes, of which 30 species had socio-economic value. Some 107 households reported that they raised a total of 1,717 buffaloes within Goot Ting marshes, according to surveys conducted between March and May 2006. The buffaloes graze on the fringes of the marsh.

Water quality monitoring This activity was undertaken within Goot Ting in collaboration with officials from the Regional Environmental Office No. 9 in Udon Thani Province. Eight survey stations were established. Eleven standard parameters, eight heavy metals and four pesticide residues, comprising organophosphates, organochlorines, pyrethroids and carbonates, were recorded. The surveys concluded that water quality was generally moderate throughout the wetland, although the recording station near Don Kaew village, Non Som Boon Sub-district had high biochemical oxygen demand (BOD), low dissolved oxygen (DO), high ammonia and coliform bacteria. These results corresponded with high concentrations of tomato growers and buffalo grazing. The fishermen, supported by the project staff, encouraged the tomato growers to use organic fertilisers, bio-pesticides and bio-insecticides. Some 15 tomato growers established demonstration organic farms around Goot Ting.

3.2.2 Wetland demarcation

Goot Ting marshes were first surveyed by the Nong Khai Provincial Land Office and declared as 'public land' by the Nong Khai Governor in November 2005. Approximately, 300 small Land Department posts were positioned as landmarks (reference points). However, the demarcation was incomplete, with posts only placed along stretches that avoided land disputes. The demarcation process also lacked a participatory approach, which contributed to a lack of a local sense of ownership. This factor, combined with their small size which made them difficult to recognise, led to approximately 100 of them completely disappearing in the space of a few years.

On 13 November 2006, the Beung Kan District Management Committee established a demarcation working group comprising key stakeholders around the Goot Ting marshes. This committee was approved by the Bueng Kan District Officer. The main functions of the demarcation working group were

1 to explain the demarcation process with local land owners and interested stakeholders, including mediating and resolving conflict resolution issues
2 to act as a focal point for coordination with related government, public and private sector partners involved in surveying
3 providing advice to improve the demarcation process.

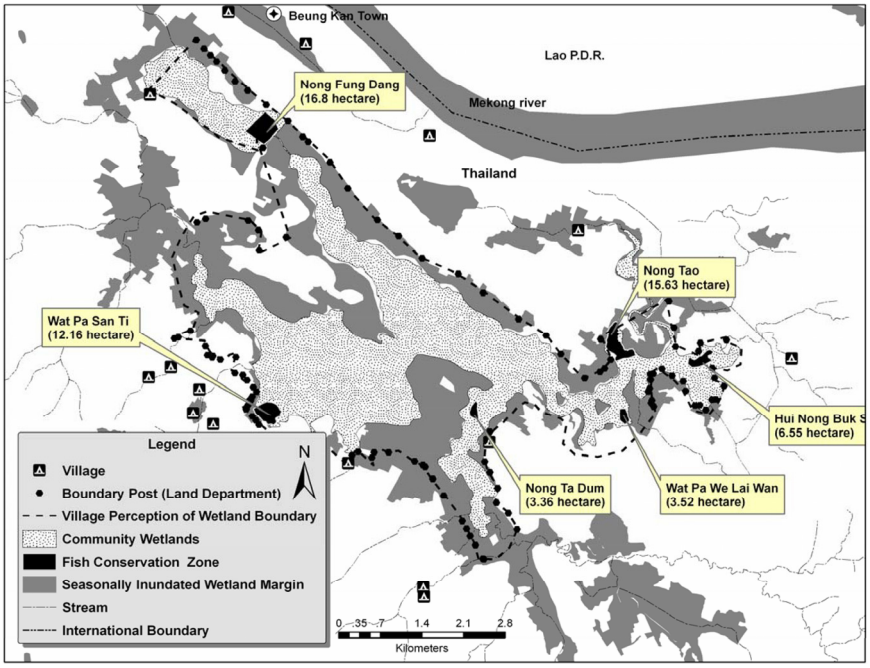
They also participated in the demarcation activity. The demarcation working group rechecked the reference points from 2005 and replaced larger posts in the same locations as the previously existing posts. As of August 2008, there were 111 Land Department posts positioned at strategic locations around the seasonally inundated marshes. Of note, stretches of boundary where land disputes were present, were avoided and the demarcation of the wetland was only partially complete. The progress and achievements of the demarcation working group were reported by the Bueng Kan District Wetland Management Committee to the Nong Khai Provincial Wetland Committee at subsequent meetings.

3.2.3 Zoning and wetland rules

Within Goot Ting marshes, a sustainable use zone – for fishing and the collection of aquatic plants – covered 2,426.9 ha (97.66%) of the seasonally inundated marsh. Fish conservation zones were established in six locations according to local perceptions of high fish diversity, high aquatic plant diversity and high densities of fish fingerlings. The six fish conservation zones comprise Nong Fang Daeng (16.8 ha), Wat Pa San Di (12.2 ha), Nong Ta Dum (3.4 ha), Wat Pa We Lai Wan (3.5 ha), Nong Tao (15.6 ha) and Huai Nong Buk Saew (6.6 ha). Within the fish conservation zone at Nong Fang Daeng, notable numbers of waterbirds were recorded during waterbird surveys conducted in January 2008, including modest numbers of Lesser Whistling Duck *Dendrocygna javanica*. No recreation activities were noted to occur and consequently no recreation zone was established within Goot Ting. Initial identification and recognition of the zoning rested with the fishermen, with follow-up approval sought from Bueng Kan District Wetland Committee.

Rules for natural resource use within the different zones were prepared by the Bueng Kan District Wetland Committee in consultation with the fishermen. Final approval of both the zoning and associated wetland rules for Goot Ting marshes was made by the Nong Khai Provincial Wetland Committee on 28 April 2008. The rules were subsequently enforced by the villagers who organised village patrols, sometimes even at night. Figure 3 shows the wetland boundary and zoning designated within Goot Ting marshes.

Figure 3 The wetland boundary and zoning designated within Goot Ting marshes (see online version for colours)



4 Discussion

The wetland management approach described in this paper, to empower local communities to manage their own wetlands, catalysed the formation of new institutional bodies and information channels linking local, provincial and the national level in Thailand for the effective management of a sizable wetland, Goot Ting marshes. It also field-tested a whole remit of new wetland management techniques, which appear to be a cutting-edge strategy in Thailand, but may also have global ramifications, particularly if the guidelines and working documents generated by the Ramsar Convention and Ramsar Secretariat are used as a reference point. These new institutional bodies and their relationships to these new management techniques are described below.

4.1 Community-based wetland management: key institutional bodies

Under this initiative, both a provincial level committee and a local wetland-level committee were established early on during project implementation. The Nong Khai Provincial Wetland Committee was established on 25 January 2006, and the Bueng Kan (District) Wetland Management Committee was established on 20th June 2007. Both these institutional bodies had pre-determined functions with regards to the community-based management of Goot Ting wetlands, regarding the participatory natural resource research, demarcation, as well as zoning and rules formulation.

The establishment of both these committees was important to ensure that communication channels were opened between grass-roots wetland communities and government officials at both the provincial and national level. It also established inter-governmental agency fora for optimum collaboration and consultation regarding the management of Goot Ting. From the standpoint of sustainability, it also meant that the project activities were being undertaken by institutional bodies which had been identified to provide sustainable funding streams and have the potential to be legally mandated.

4.2 Community-based wetland management: key management issues

4.2.1 Participatory wetland resource mapping

Participatory resource mapping of a wetland is a pre-requisite to demarcation, and more especially zoning and rules formulation of the said wetland. The initiative at Goot Ting was designed to adopt participatory research methodologies, to incorporate local knowledge and involve local people at all stages of research by the project team. From the outset, the communities conducted the natural resource research in collaboration with the concerned government agencies. Participatory research was conducted on the distribution and diversity of fish populations, the distribution and diversity of aquatic plants, the distribution and diversity of waterbirds, and water pollution impacts. These participatory surveys were invaluable in providing all stakeholders, but more especially the local communities at Goot Ting, with quality data on the spatial distribution of the natural resources. This information, in turn, provided baseline information for informed decision making on the location of resource-use zones, superimposing scientific data on their own traditional, ecological knowledge of their wetland.

Chambers (1994) suggested that participatory methods “enable rural people to share, enhance and analyze their knowledge of life and conditions, to plan and to act”.

Furthermore, Brown and Wyckoff-Baird (1992) stated that these methods are increasingly seen as integral to the success of research efforts and to the local adoption of the resulting recommendations. Under the Ramsar Convention, Recommendation VIII, 36, also promotes Participatory Environmental Management (PEM) as a tool for management and wise use of wetlands, though does not elaborate how PEM can act as a catalyst to empower communities themselves to take a centre stage role in managing their own wetlands. Overall, these statements strongly endorse the participatory research methodology adopted at Goot Ting.

4.2.2 Demarcation and formal recognition of locally important wetlands

The Goot Ting marshes represented the first wetland 'commons land' in Thailand to attempt demarcation involving local communities working in collaboration with the Land Department (the government agency with responsibility for legal land issues in Thailand) and approval of a formalised provincial level committee – the Nong Khai Provincial Wetland Committee – using a formalised, participatory methodology. Of concern, errors in demarcation of the wetland – as 'commons lands' – made during earlier demarcation interventions are extremely difficult to rectify, without seeking formal rectification from the Cabinet. This provincial wetland committee has subsequently expanded the wetland management system to other wetland sites in the province with areas exceeding 80 ha (500 *rai*), a total of 14 wetland sites.

The literature indicates that demarcation of wetland 'common lands' may be a very rare form of community-managed protected area in the developing world. This is borne out by the lack of reference on wetland boundary demarcation in the key handbooks prepared by the Ramsar Convention Secretariat, namely Publication No. 5 on 'Participatory Skills' (Ramsar Convention Secretariat, 2007a) and Publication No. 16 on 'Managing Wetlands' No. 16 (Ramsar Convention Secretariat, 2007b). Indeed, the focus of the Secretariat has been on how Contracting Parties describe precisely and delimit the boundaries of the wetlands on maps designated for inclusion in the List of Wetlands of International Importance, as in Article 2.1 of the Convention.

Further to this, Resolution VII.23 of the San Jose Ramsar Conference on boundary definitions and compensation refers to issues concerning the boundary definitions of Ramsar sites and compensation of wetland habitats, noting the advances in technology which have allowed for a higher resolution of site boundaries than previously available, and the continuing increase in both quantity and quality of data available for Ramsar sites which increases our understanding of their ecological character. Australia prepared two case studies (as referred to Resolution VII.12) for the development of a more generalised approach to the revision of Ramsar site boundaries.

The current literature, as highlighted by wetland management agendas generated through the Ramsar Convention, lends weight to the notion that the entire concept of community-managed wetlands, and participatory demarcation of community wetlands (following community forestry models), may be an under-used approach to wetland management in developing countries, more especially for those sites of local conservation value.

4.2.3 Zoning

Two zoning categories were prescribed at Goot Ting marshes, namely a sustainable use zone primarily for fishing and four fish conservation zones. This zoning scheme directly related to the multiple values and functions of wetlands for sustainable development and the maintenance of biodiversity. The zoning scheme also took account of the fact that the Goot Ting marshes were highly liable to negative impacts from actions occurring outside the designated boundaries (whether such impacts come from upstream, downstream or other sources). Of utmost importance, the zoning scheme was accurately framed by the boundary demarcated for Goot Ting marshes, a process led by the agency legally mandated for land matters – the Land Department. Without this boundary, virtually all the key zones would have ill-defined areas, which in turn would have consequences in the context of developing a model for prescribing community wetland legislation.

On the issue of zoning, the Ramsar Convention focuses on the zoning needs relating to nature reserves. The Convention also recognises the essential character of wetlands and the need for zonation related to wetland reserves. For example, Recommendation 5.3 of the Ramsar Convention also states that zonation relating to Ramsar sites and wetland reserves must take account of the size and sensitivity of the wetland in question, and that, "while strict protection may be the most appropriate form of wise use for smaller or highly sensitive Ramsar sites or wetland reserves, it alone is not always possible in larger sites where other forms of wise use will be appropriate".

Thus, the Convention has made clear statements regarding zoning for wetlands of international importance, but failed to recognise that a single zoning scheme could be defined for all wetlands, regardless of size, and of international, national or local value.

4.2.4 Community-based managed-wetlands at Goot Ting

Goot Ting marsh, together with Bueng Khong Long, are the first wetlands in Thailand to have been officially demarcated with boundary posts, zoned and have regulations prescribed which have been approved by a provincial wetlands committee. As such, they represent the first models for community-managed wetlands in Thailand. These community-managed commons recognise the importance of involving local people in the management of local resources (Redford and Mansour, 1996; Western and Wright, 1994).

A couple of background factors were significant in steering this initiative. Firstly, the theoretical legal model, together with practical knowledge in land-use planning in community forest lands lent direction both to a technically strong proposal, which identified the key institutional bodies and their role in relationship to the activities and outputs in a highly practical sequence. A further aspect was that the project manager had extremely relevant experience to tackle this relatively new field of wetland management and provide leadership to his wetland team.

Several more factors were influential in achieving success under this initiative. At Goot Ting itself, all the key stakeholders, from the grass-roots wetlands user groups up to the Nong Khai Provincial Wetlands Committee were involved virtually from the start in the planning, implementing and monitoring stages of this wetland management intervention. The wetland user groups and the concerned government agencies conducted participatory research on key aspects of the wetland together. Consequently, they all had the same data sets and could reach consensus on the optimal management responses. Furthermore, the user groups had direct incentives to participate in terms of identifying

activities to improve their livelihoods; a high level of participation also was evident amongst government officials who had to report their achievements to an interagency committee headed by the Provincial Governor – the Nong Khai Provincial Wetland Committee.

4.2.5 Wetland policy statements and community wetland legislation

As of June 2008, Thailand lacked policy statements on key wetland issues. These policy statements comprise:

1 the wetland types appropriate for community-based wetland management

2 participatory demarcation processes involving communities and concerned government agencies

3 zoning categories and participatory zoning processes

4 natural resources rules formulation, approval and registration.

The role of provincial wetland committees and local wetland management committees has not been consolidated. Correspondingly, no inventory of community-managed wetlands has been established.

As of June 2008, Thailand lacked any legislation for the community-based management and protection of freshwater wetlands within the country. However, both the formulation of community wetland legislation and wetland policy statements are critical to provide legal frameworks on which to hang the field-based wetland management activities.

4.3 Relationship to other wetland management issues

4.3.1 Management planning of wetlands

Management planning has been mooted as the main strategy for the management of wetlands under the Ramsar Convention, particularly as most wetlands of international importance are comparatively large and can be afforded special management attention (Annex II to the Montreux Recommendation 4.2). Furthermore, the 'Guidelines for the Implementation of the Wise Use Concept' (Annex to Recommendation 4.10) calls for the development of management plans for Ramsar sites which involve local people and take account of their requirements. Of high concern, at the following Ramsar meeting, the use of management planning was not limited to listed Ramsar sites but was promoted more broadly. As a result, 'Guidelines on management planning for Ramsar and other wetland sites' were produced as an Annex to Resolution 5.7 on management planning for Ramsar sites and other wetlands.

Of particular note, management planning for wetland protected areas – as promoted by the Ramsar Convention – appears to be a component of a different set of model natural resource legislation from the model legislation utilised in this paper for community wetland management (see Figure 1). It appears to be more akin to national park legislation in terms of institutional bodies and their relationships to key park management issues; the similarities between model protected area (national park)

legislation – and model legislation for nationally important wetlands are shown in Figures 4 and 5 (Parr, 2007). Of concern, the legislation models for nationally important wetlands and community-managed wetlands – of any size or area – are at significant variance in terms of the institutional bodies engaged and the management issues embraced, and it might prove interesting as to how the Ramsar Convention embraces both models of legislation.

In the context of Goot Ting, the wetland has been recognised as a site of international conservation, and merits designation as a Ramsar site. However, the option of incorporating a high-profile, management planning component into the project proposal was *deliberately* omitted, as this management issue was not recognised in the model community wetland legislation, or in community forestry legislation. Moreover, it was not recognised as a management strategy that could be repeated, and implemented, at 42,000 wetlands across Thailand; by comparison, the community wetland management approach could be adopted nationwide.

Figure 4 Legal model generated for the Institutional Bodies and Key Park Management Issues for Protected Area (National Park) Legislation (see online version for colours)

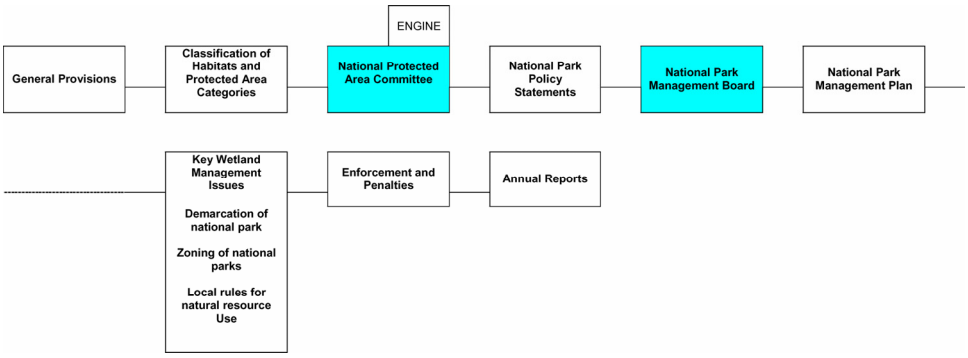
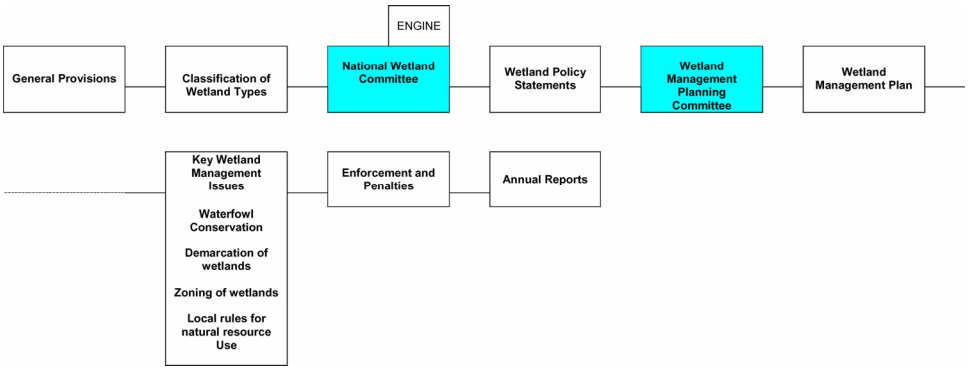


Figure 5 Legal model generated for the Institutional Bodies and Key Management Issues for managing important wetlands under the Ramsar Convention (see online version for colours)



4.3.2 Community involvement and poverty alleviation

The Ramsar Convention Secretariat has regularly mooted community involvement and poverty alleviation during its Convention of Parties. Examples include Recommendation 6.3 in Brisbane Australia (1996) focusing on involving local and indigenous people in the management of Ramsar wetlands. Furthermore, the Annex to Resolution 5.6 discusses 'Additional Guidance for the Implementation of the Wise Use Concept'. This recommends that Contracting Parties establish procedures which guarantee that local communities are actively involved in the planning process related to wetland use, as these indigenous people have traditional knowledge, experience and aspirations in relation to wetland management. References include Resolutions 5.6 on the Wise use of wetlands; Resolution VII.8 on the Guidelines for establishing and strengthening local communities' and indigenous people's participation in the management of wetlands; Resolution VIII.23 on Incentive measures as tools for achieving the wise use of wetlands and Resolution IX.14 on wetland and poverty reduction.

The Ramsar Convention has focused on 'sites of international importance'; and the management strategy is management planning, more akin to management planning for national parks and wildlife sanctuaries. Operating at this higher level, they have struggled to link into poverty alleviation. However, the community-managed wetlands approach is at a grass-roots level, targeting the individual communities themselves. To that effect, the linkages between targeted communities, their wetlands and poverty alleviation are a magnitude more effective.

The adoption of this community-managed wetland strategy will permit the Ramsar Convention to contribute to the Millennium Development Goals 1 and 7, namely 'reduce by half the proportion of people who suffer from hunger' and 'ensure environmental sustainability'.

4.3.3 Community wetland management and climate change

The community wetland management approach mandates the wetland communities to manage their respective wetlands themselves. With their traditional use, they are clearly in the best position to note subtle climate change impacts and to generate – and implement – appropriate adaptation measures accordingly. Through the institutional linkages providing formalised communication from the communities managing their respective wetlands to the provincial level and the National Committee for Wetland Management, national policies can be prepared for responding to climate change impacts. In this manner, optimal climate change mitigation approaches can be developed.

4.3.4 Sustainability

Firstly, the initiative focused on developing low-cost models for community management of natural resources, which could be implemented by the local communities with comparatively limited technical and financial inputs, and a limited government role. These models would be easy to implement by other local communities in other wetland areas in the future. The Nong Khai Provincial Wetland Committee has expanded the management strategy to all wetland sites exceeding 80 ha; some 14 wetland sites within the province.

Secondly, the activities also established the institutional arrangements (Provincial Wetland Committees) at the provincial level in the three provinces for the sustainable

management of the four-targeted wetlands as well as other wetlands located within the three provinces. Increased funds would be leveraged through annual budgets prepared in line with their respective annual natural resource plans, which would be requested through the respective local wetland institutional bodies (Tambon Administration Organizations), as representatives of the communities. Further support would be provided by representatives from the different government agencies, as members of the three Provincial Wetland Committees.

Finally, the initiative strived to generate momentum at the national level for the Thai Government to implement the necessary policy and institutional changes to secure better community involvement in the management of wetlands in the future. Achieving this would ensure a far-reaching and long-term effect of the project interventions.

5 Conclusions

5.1 Community-based wetland management – a decade long conservation agenda

The methodology of placing communities at the centre of wetland management at Goot Ting has become a resounding short-term success, according to a mid-term evaluation. The approach was similarly successful at the permanent freshwater lake of Bueng Khong Long, in the Loei river plains in Loei province, and in the watersheds in Nan Province. The Governor of Nong Khai stated that he intended to expand the methodology to other major wetlands during a Provincial Wetlands Committee meeting held in January 2008. The Governor of Loei stated that he wished to expand the community-based management of the Loei River into the upper watershed; and the Governor of Nan Province wishes to expand community management of the watersheds in Nan. Thus, the signs are extremely promising for grass-roots management of wetlands has caught hold in northeast Thailand and it should be expected that this community-based wetland management approach can expanded nationwide in the coming decade.

At the national level, two further piece of the community wetland jigsaw puzzle are required for these grass-roots actions to lock into – the adoption of both community wetland legislation and formulation of community wetland policy statements. For both aspects, Thailand has one of the most appalling records of accomplishment in Asia, with out-dated natural resource legislation virtually across the board (protected area legislation, forest fire legislation and river basin management legislation, among others) and an absence of policy statements in all fields of natural resource management. These scenarios are completely incommensurate with the status of Thailand, as one of the best developed, developing nations among the G77 countries.

However, the project executants are confident that sufficient momentum has been generated by the project initiative, both within the provinces and with members of the National Committee for Wetland Management that at least these issues are now on the table, under consideration. It is therefore recommended that suitable community wetland legislation, with supporting community wetland policy, which recognise customary rights to govern and manage wetlands, will be drafted in due course.

5.2 Implications for the Ramsar Convention

The Mission Statement of the Ramsar Convention declared during the Eighth Conference of the Parties (COP8) in 2002 was: "The Convention's mission is the conservation and wise use of all wetlands through local, regional and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world".

In Thailand, this mission statement has been found wanting. Prior to this initiative, 98% of wetlands in Thailand remained unprotected, and exceedingly vulnerable to degradation and destruction. As a consequence of Thailand being a signatory to Ramsar Convention, wetland conservation focus has been directed towards wetland inventories, Ramsar site management plans and Ramsar site wetland education, all high-priority Ramsar agendas. The limited expertise in wetland management conservation in Thailand has been almost entirely focused on following Ramsar's conservation agenda, as the main international forum for wetland conservation, at the expense of considering alternative management approaches which might conserve both nationally important and locally important wetland sites alike. In short, the Ramsar Convention has done wetland conservation in Thailand few favours, to date. Indeed, it simply raises the question: 'Have Thailand's wetlands benefited from Ramsar ratification?'

The institutional bodies identified in this paper, particularly the provincial wetland committee and local wetland committee and their roles in community-based wetland management contrast sharply with the institutional bodies – 'wetland management boards' – and management planning. It may not be a simple task to capture these two management approaches under the umbrella of the Ramsar Convention. Clearly, the developing world – and Asia in particular – should consider developing its own freshwater wetland conservation agenda based upon its own core themes of communities, sustainable livelihoods, natural resource utilisation, poverty alleviation – and wildlife conservation. It needs to set out its own terms, and recognise that the Ramsar Convention, Ramsar sites and the agendas of western conservation represents only a small proportion of national wetland conservation agendas. Placing communities – who are dependent upon the natural resources to sustain their livelihoods – at the centre of wetland management seems quintessential for the overwhelming nationally and locally important wetlands.

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