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Beyond Community Rights: Small-Scale Fisheries and Community-Based Management in Southern Thailand

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INTRODUCTION

The last 30 years have revolutionized Thailand's coastal fishing industry. Barely topping 390,000 tons in the early 1960s, annual production now exceeds three million tons (DOF 1995, 1982).[1] Rapid and often unfettered development, however, has degraded Thailand's coastal resources and induced conflict between large- and small-scale fishing fleets, and among small-scale communities themselves. At the root of inter- and intra-sectoral conflicts are two significant factors. One is the rapid and uncontrolled development of land and water concessions surrounding small-scale communities. The other is increasing competition and the introduction of environmentally-destructive technologies within Thailand's coastal fishing zones.

This article explores the ways in which government departments, non-governmental organizations and small-scale fishing communities have responded to increasing competition and conflict over natural resources in Thailand's coastal areas. In particular, it addresses both the theoretical and practical implications of granting small-scale fishing communities the right to manage coastal resources in Southern Thailand. The primary empirical focus is Phangnga Bay, where case studies in Baan Ao Kung and Bann Para (both on Phuket) are attempting to determine the factors that encourage and prevent local communities from conserving coastal resources.

The article consists of five sections. The following section examines over-exploitation and conflict in Phangnga Bay. The third section addresses the role of the Thai government. Territorial zones and community rights are analyzed in the fourth section. The fifth section provides concluding remarks and recommendations.

OVER-EXPLOITATION AND CONFLICT IN PHANGNGA BAY

Statistics from the Department of Fisheries (DOF) suggest that over-exploitation of coastal resources and inter-sectoral conflicts are significant problems in Phangnga Bay. Between 1969 and 1988, CPEU rates (catch per unit of effort) dropped from 160 to 38 kilograms per hour (Jate, citing Chantawong and Ratanachote and Noothong, n.d.: 3). Interviews with villagers in Phuket and Phangnga support these findings, indicating that fish stocks have declined steadily, particularly within the last 15 years.[2]

The Marine Census (NSO/DOF 1995, 1985) reports a rise in the number of fishery establishments (which include those engaged in capture and culture) in Phuket and Phangnga (the two principal provinces in the case study areas), although the number of marine capture establishments has in fact declined since 1985.[3] Census data (NSO/DOF 1985, 1995) also report that the number of low-technology marine capture establishments (i.e., ones with non-powered boat or no boat at all) has declined in both Phuket and Phangnga. By contrast, the number of outboard boats has increased in Phuket and declined marginally in Phangnga. Inboard boats under 10 GT (gross tons), those considered "small-scale" by the DOF, have declined marginally in both provinces, as have inboards over 10 GT. Boat registrations appear to confirm these findings, suggesting that all classes (except those over 25 meters in Phuket) are in decline in Phuket and Phangnga (DOF 1991, 1996a).

Highly dependent on resource-intensive industries, small-scale fishing communities are extremely vulnerable to the negative effects of environmental degradation. According to household surveys in Baan Ao Kung (Phuket), levels of education are low, household savings minimal and land tenure weak, restricting the range of alternative employment opportunities.[4] In terms of the local fishery, the primary source of environmental degradation—and conflict—is competition with push nets and trawlers. Interviews with DOF staff and villagers suggest that both types of gear are on the rise in Phangnga Bay. Census findings (NSO/DOF 1985, 1995), support these assertions, indicating that the number of trawlers in Phuket increased from 25 to 37 between 1985 and 1995. Numbers in Phangnga increased from 7 to 18.

Over the same period, push nets, used primarily on long-tail boats, jumped from 44 to 62 in Phuket and 118 to 140 in Phangnga (NSO/DOF 1985, 1995).[5]

Conflicts tend to arise when push nets and trawlers enter fishing areas used by other fishing communities, degrading local fishing grounds, depleting local fish stocks or tearing up stationary gear. Whereas push nets belong to members of fishing villages in Phangnga Bay, trawlers tend to originate from commercial ports in Phuket. Registration data suggest that 72.9 percent of Phuket's fishing boats are over 14 meters in length, compared to just 6.2 in Phangnga (DOF 1991, 1996a). Interviews with DOF officials and villagers in Phangnga Bay confirm these data, suggesting that most of the large commercial boats are coming from Phuket.

Several factors appear to be at work here. First, there are no *effective* rules governing the ways in which individuals, households and firms use resources in Thailand's coastal areas. Despite an abundance of laws regulating gear type, fish size, and geographical and seasonal closures, source material and personal interviews suggest that Thailand's coastal regulations are flaunted widely (Boonlert 1994, Arthorn and Baker 1989, Midas 1995, Situational analysis … n.d., Pongpat n.d., Ruangrai and Maitree 1992, Somporn et al. 1990, Somying 1994, Choomjet and Somboon n.d., Jate n.d.). This is partly due to the fact that Thailand's responsible agencies lack the capacity to monitor and enforce the relevant resource regulations (more on this below).

The three-kilometer trawl and push net ban is a classic case in point. Implemented in 1972 (Gulf of Thailand) and 1979 (Andaman Sea), the trawl and push net bans were designed to prevent destructive gear from degrading coastal fishing areas and tearing up stationary gear (such as stake nets, stationary traps) within three kilometers of shore (the area in which small-scale communities do most of their fishing). Numerous reports and personal interviews with scholars, fisheries officials (at national, provincial and district levels) and fisherfolk in Phangnga Bay, however, suggest that small- and larger-scale fleets persistently ignore the ban, creating widespread conflict within the three-kilometer zones (Situation analysis… n.d., Boonlert 1994, Ruangrai and Maitree 1992, Midas 1995, Somporn et al. 1990).

A second and related factor is the up- and down-stream industries that trawls, push nets and other types of destructive gear are ultimately serving. Upstream industries here include ship building, ship repair, net construction, ice manufacturing and transportation to the cast-off points. Downstream industries include cold storage, fish processing, fish canning, fishmeal,[6] livestock and transportation to and from the landing sites (Somporn et al. 1990: 41).

A final factor is the relationship between the boat operators and their intermediaries. Intermediaries frequently provide large and small boats with loans to buy their gear, boats and to pay their crew. When a boat is in debt to an intermediary, it is often obliged to sell him or her all of its catch at a non-negotiable price (personal interviews with fisheries officials and fisherfolk in Phangnga Bay). If downstream markets and industries make trash fish attractive to the intermediary, then, it is not difficult for the intermediary to convince his or her clients to go out and catch trash fish.

STATE ENFORCEMENT

As noted earlier, Thailand's coastal fisheries have suffered from a series of less-than-optimal state interventions. Two factors appear to be at work here. First, Thailand's public agencies lack the capacity to monitor and enforce Thailand's numerous coastal regulations (Midas 1995, Boonlert 1994, Somporn et al. 1990; Ruangrai and Maitree 1992). Second, policies affecting Thailand's coastal resources are decided and implemented within a highly centralized structure, leaving little room for innovation or local initiatives.

The following section examines the issue of enforcement,[7] placing particular emphasis on the role of Thailand's relevant government agencies.

State Capacity

One element that fisheries officers commonly cite as a major constraint on their ability to enforce fisheries regulations is a lack of budgetary might (personal interviews). The argument here is that Thailand's enforcement agencies lack the money, equipment and manpower to monitor and enforce fisheries laws effectively. Evidence is mixed. Provincial Fishery Patrols in Phangnga Bay, for instance, do seem to lack the necessary funds and equipment to undertake their role effectively (Midas 1995: 10-11). The Fisheries Patrol in Krabi province has three staff but no boat, weapons or radio. Phangnga province has a ten-meter launch, which can reach speeds of five to eight knots per hour. Phuket province does not have a boat (Midas 1990: 10). In Krabi, however, the Andaman Fishery Protection Unit has six boats, three of which are over 60 feet in length (personal interviews).

A second factor relates to the way in which fisheries enforcement works in Thailand. The Fishery Protection Unit undertakes regular patrols (approximately 10 days per month), although their ability to monitor and enforce fisheries regulations is constrained by their time and budget (which has decreased with recent budget cuts) (personal communication). Fisheries officers can also respond to calls for assistance. When they receive a request, any combination of Fishery Patrol staff, Fishery Protection staff, District Fisheries Officers and marine and terrestrial police will respond to the call. Most often, it is the Fishery Protection staff and District Officers who intervene in these situations (personal interviews). Given the fact that fishing villages are often without telephone and other means of communication, however, the time that takes place between the original call and the ultimate intervention can be quite significant. Moreover, suspects can only be arrested when they are caught in the act of breaking fisheries regulations.

Another problem is that the monitoring and enforcement system places far too much responsibility in the hands of members of the public and local government officials, who lack the enforcement power to deal with these situations effectively. First of all, plaintiffs are expected to initiate the intervention, which, depending on location and infrastructure, can be prohibitively costly and time-consuming. Second, witnesses are frequently asked to identify the guilty party—in person. When the offenders are individuals with power and influence, this type of criminal procedure can be extremely difficult—and dangerous—for the witness. As a result, few fisheries offenses find their way to trial or prosecution.

A final factor relates to the quality of communication and coordination among Thailand's responsible agencies. According to the Midas report (1995: 12-13), Fishery Protection Units will respond to requests they receive from Provincial Fishery Patrols, although distance, prior engagements and a pervasive "reluctance to get involved" can mitigate this response considerably (if not absolutely). As the Midas team states,

> It seems to be a general situation that Fishery Protection Units do not see coordinated action with Provincial Fishery Patrols or Fishery Officers as a part of their duties (Midas 1995: 14).

Coupled with the somewhat less than adequate communication capabilities of the Provincial Fishery Patrols, this makes for an extremely uncoordinated and ineffective system of law enforcement.[8]

Thailand's licensing system also suffers from poor coordination. As noted earlier, many fishing boats operate without a license in Thailand. This is due in large part to a lack of coordination between the issuing agencies and the enforcement agencies. Under Thai law, fishing boats are required to possess two types of license: a fishing license from the District Fisheries Office (DFO) and a navigation certificate from the Harbour Department (Boonlert 1994: 113). Once a boat has both of these licenses, however, it is free to enter any (Thai) fishing area it likes. This means that the larger vessels can move in and out of provincial fishing areas without having to register with local fisheries officials. Moreover, even when a boat lacks the requisite certification, the issuing office is unlikely to find out unless a Fishery Patrol boards the ship and discovers the violation (which is unlikely) or a third party reports the infraction (equally unlikely).

In the event that fisheries officials are able to catch and prosecute the guilty party, the penalty for a fisheries violation (a fine of three times the price of an annual gear license, which is, on average, 200-300 baht per year) is hardly an effective deterrent. Moreover, according to district fisheries officials (Phuket), enforcement officers are usually only able to fine the captain of the boat. The owners, it seems, are able to ensure they are conveniently detached from any form of illegal fishing activities.

In short, Thailand's coastal fisheries have been managed as an open-access resource, creating instability and conflict for those who utilize coastal resources to meet their livelihood needs.

COMMUNITY-BASED MANAGEMENT

Institutional theories favoring community-based management assert that individuals will cooperate to conserve an open-access resource (OAR) when they are able to design, monitor and enforce rules regulating the ways in which members utilize and allocate natural resources (Ostrom 1990, Bromley 1992). Proposals for Thailand's fishing industry resonate strongly with this type of assertion. Ruangrai and Maitree, for instance, make the following prescription for Thailand's coastal fisheries:

> Being the users of the resources, the community should be capable of managing its own resources. They have necessary information on the resources and their exploitation such that, within the rights they have been granted, they can perform the necessary management functions such as limiting entry, fishing gear regulation, collection of resource rent, and benefit distribution . . . (Ruangrai and Maitree 1992: 537).

Similar arguments are made in Somying (1994: 380), Choomjet and Somboon (n.d.: 8-9) and Pongpat (n.d.: 8). Indeed, the DOF has been planning to implement a series of pilot projects that would enable selected communities to design, monitor and possibly enforce their own resource rules (personal communication).

At the same time, fishing communities throughout Southern Thailand have been implementing community-based management regimes of their own. In Baan Ao Kung, for instance, villagers have taken it upon themselves to monitor and enforce a no-trawl and –push net zone. According to fisherfolk within the village, members of the local initiative take turns patrolling the local fishing area. When trawlers or push nets enter the zone, they either return to the village and phone the local authorities or assemble as many villagers as they can and chase the intruders away. Similar activities are taking place in other Southern communities such as Ko Yao (Phangnga province), Songkhla Lake and Trang province.

Enjoying moderate success, institutional arrangements such as these are now being hailed (by academics and government officials alike) as a viable alternative to the situation that currently exists within Thailand's coastal areas. Implementing a territorial zone, however, is a costly proposition, particularly when the resource is readily available and in high demand (as it is in Phangnga Bay). For this reason, the costs and the benefits of implementing an exclusive fishing zone require careful scrutiny.

The Rewards of Membership

Territorial zones require the existence of "rights," or guaranteed benefits that the state or another source of authority will agree to uphold. Included here are rights to use a particular resource area, rights to obtain benefits from the resource, and (significantly) rights to exclude others from using or obtaining benefits from the resource (Christy 1982: 4). Note that this does not imply ownership (Christy 1982: 4).

Depending on the type of institutional arrangement, territorial zones can take a number of forms. One type of zone is a private concession. Here an individual reserves the right to use an area of water or coastline to undertake a particular economic activity. Given that many types of fish are fugitive in nature, private concessions are generally best suited to sedentary species, such as oysters or mussels (Christy 1982: 9).

A second type of territorial zone is a state-enforced system. Here territorial use rights can go to an individual, a firm, a state agency or a community (see below). The distinguishing feature here is that the state (including all responsible government agencies) assumes the costs of creating rights and ensuring that they are respected and enforced. In other words, the state is the guarantor. To a degree, this is the system that Thailand currently uses to regulate effort and exploitation within its coastal fisheries.

A final type of zone is a common property resource (CPR). Here the costs of monitoring or enforcing a private concession are too great for any one individual to bear, creating a situation of *common* property. A CPR differs from an OAR in the sense that it has rules, defining the conditions under which individuals may use the resource (Christy 1982, Ostrom 1990, Bromley 1992). When enforced effectively, these rules restrict access to a particular group of members, who enjoy the right to use the resource in return for their compliance with the rules in use.[9]

Different types of arrangement are thought to produce different types of benefit for the fishery and for those who use and exploit it. All are common in the sense that any type of territorial zone creates an area in which individuals or communities possess the right to exclude others. This, in theory, creates a strong incentive for resource protection. The argument here is that individuals and/or communities are more likely to protect a resource when they have a credible assurance that they will receive the benefits of doing so (i.e., when they have tenure).

Theories differ, however, about the ways in which these conditions can best be obtained. Private concessions, for instance, most commonly arise when governments allow them to. By granting and recognizing an individual's right to use and exploit a resource, the state is effectively passing the costs and benefits of the resource onto the individual. In short, the individual has command over the resource, but this command depends on the state. Very few, if any, resource theories propose that individuals enforce their own right to property. This is because the costs of doing so would generally far outweigh the benefits one obtains from protecting private property.

Theories about CPRs, by contrast, are far less clear about who should and *who can* enforce the right to use a resource. Institutional theories, for instance, suggest that rules regulating common property are most effective when they are designed, monitored and, in some cases, enforced by members of a well-defined community (Ostrom 1990, Bromley et al. 1992). Most important here are rules that define membership and stipulate boundaries and codes of acceptable behavior. Equally important is the notion that the individuals who use the resource have a hand in deciding the ways in

which it is managed. This frequently entails a relatively high degree of autonomy from "outside" resource managers (particularly central state agencies) and intruding economic interests (Ostrom 1990).

The advantages of implementing or encouraging a common property arrangement are numerous. First, they are structured in such a way that they capitalize on the wisdom and experience of the local community. In this way, they seek to avoid repeating the mistake of designing rules and regulations that are totally inappropriate for the particular resource setting (Ostrom 1990, Bromley et al. 1992). Second, much like a private property arrangement, CPRs create incentives to protect the resource. When members have credible assurance that they will derive benefits from the resource, they are more likely to assume the costs of ensuring its health and longevity. Finally, there is an argument for cost-efficiency. Since members spend large amounts of time using the resource, they are well-situated to ensure that other members follow the resource rules.

The Costs of Exclusion

How local communities would protect and enforce these exclusionary arrangements, however, remains unclear. Evidence from Southern Thailand suggests that non-governmental organizations can encourage government agencies to protect the interests of small-scale fishing communities. In Baan Ao Kung, for instance, villagers have joined forces with Wildlife Fund Thailand and the Small-Scale Fisherman's Association of Southern Thailand to lobby the government to intervene on their behalf. Lacking the capacity to repel outside interests (most notably, commercial fishing fleets) or to induce the state to intervene on their behalf, however, one needs to question the viability and wisdom of encouraging poor, unarmed communities to monitor and enforce exclusionary fishing zones. The recent death of a villager from Phangnga province, who was shot while attempting to apprehend an illegal push net, illustrates the dangers of encouraging "the commoners" to monitor and enforce their own resource rules.

Local communities would also need sufficient authority to overcome the interests of "rule breakers" within the community. Evidence suggests that population pressures and uneven accumulation of capital within the community can lead to instability and conflict (Ostrom 1990, Panayotou 1982: 46). As Ben-Yami argues,

> . . . most traditional fishery systems break down not because of a result of 'invasions' from outside but because of enterprising 'insiders' who have taken advantage of existing technologies, markets and capital to improve their incomes and who are the first to 'break' the rules and traditions (cited in Panayotou 1982: 47).

Whether and to what extent local communities could control these transformations remains unclear. Unless they possess the ability to mete out negative or positive sanctions and/or the ability to exclude those who fail to follow the rules, it is unlikely that local communities would be able to maintain these institutional arrangements (and the mutual assurance they provide) (Ostrom 1990, Bromley et al. 1992, Panayotou 1982).

Other factors suggest that a territorial zone system would be difficult to implement within Thailand's coastal fishing areas. First, it is doubtful that Thailand's small-scale fishing communities would conform to a rigidly-defined system of fishing rights. As the Midas report points out,

> Fishermen do not generally fish only in one area adjacent to their community. They are frequently engaged in a variety of fisheries in different locations, often shared with people from a variety of other communities. Identification of "territories" will be complex, time consuming and subject to considerable dispute (Midas 1995: 19).

Current and historical data for Thailand's coastal fishing industry are far from reliable, suggesting that any type of demarcation or compensation would be extremely difficult to carry out (Somying 1994: 386). Given the lack of coordination within Thailand's government agencies, there is little reason to believe that the existing government structure would be able to implement these new institutional arrangements or manage the conflicts they would create. Coordination between local communities and the relevant government agencies would also constitute a significant obstacle.

In short, creating an exclusive fishing zone (and enforcing the rules that define it) is a highly political act. As Christy (1982: 8) argues, "without full government support, the enforcement and protection of a localized (territorial zone) is likely to become very difficult." A central challenge, then, is to devise a system in which local communities have the right to monitor and design their own resource rules, the right to use the fishery, and the right to call upon the state when these rights are violated. Likewise, the state must ensure that local communities are both willing and able to maintain a fishery that is both efficient and equitable.

The following section offers recommendations about the ways in which these conditions can best be obtained in Thailand's coastal fishing sector.

CONCLUSIONS AND RECOMMENDATIONS

Notwithstanding the foregoing critique, community-based management offers a constructive way in which stakeholders can address persistent problems within Thailand's coastal areas. Its main problems, however, relate to enforcement capability and institutional design. In terms of enforcement, the notion that small-scale fishing communities can or should have the capacity to enforce territorial fishing areas is clearly unrealistic and potentially very dangerous. More viable is the notion that local communities monitor the existing rules and appeal to local authorities when these rules are violated, a notion that DOF officials claim to support (personal communication).

This type of system will not work effectively, however, unless the following conditions are met. First, if they are to monitor fisheries regulations, local communities must have a strong understanding of what constitutes a fisheries violation. The best way of achieving this objective is to give them a large role in defining the rules in use. This will require a means by which all interested stakeholders (large- and small-scale actors alike) can present and discuss their respective interests in the fishery. If the number of potential stakeholders is exceedingly large, representation may be necessary. It will also require a mechanism through which stakeholders can take a collective decision. As noted earlier, implementing any type of exclusionary regime will always create a set of winners and losers. New rules, then, will need to provide a means by which stakeholders can resolve their differences, allocate compensation and enforce the ultimate resolutions.

Second, the coordination and response of Thailand's enforcement agencies must improve dramatically. This means better and more appropriate equipment (weapons and boats) for enforcing fisheries regulations. It also means better coordination among local, regional and national offices. As the Midas report (1995: 13) points out, there appears to be considerable overlap between the Fisheries Protection Units and the Provincial Fisheries Patrols. Serious thought needs to go into whether these units could be merged or redirected more effectively. All field officers should have radio transmitters to communicate with patrol boats and regional offices. Local communities will need a reliable means by which they can contact enforcement officers who should ideally be situated within close proximity to the communities for which they are responsible.

Third, once resource rules are decided and an effective enforcement system is in place, resource users will need a means by which they can resolve disputes regarding interpretation of resource rules. When conflicts arise, there needs to be a legitimate and disinterested party to which disputing parties can appeal. Although Thailand's judicial system is relatively well-equipped to deal with resource-related disputes (see Kobkun 1996, Somying 1994), the costs of using it are generally prohibitively high. For most Thai civilians, litigation is simply not an option. In order to redress this imbalance, the transaction costs of interpreting and using the Thai judicial system will need to be reduced (particularly for those living in small-scale fishing communities). Although NGOs frequently cover the costs of activities among Thailand's poorer communities, recent judicial interpretations suggest that they are not entitled to intervene on behalf of a third party (Kobkun 1996). Notwithstanding a change in this jurisprudence, subsidies may need to be provided for those who seek to litigate.

Finally, and perhaps most importantly, decision making and representation within Thailand's political system must be accountable. This entails three essential features. First, constituents must have the opportunity to obtain information about the activities of their political representatives and their civil servants—at all levels of political activity. Second, they must possess a means by which they can deliver negative sanctions when these officials fail to perform their duties in an appropriate manner. Third, constituents and representatives alike need to have a common understanding of what in fact constitutes an appropriate performance.

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