

SOUTHEAST ASIA

INDONESIA

There are few well-documented examples of traditional, community-based marine resource management systems in Indonesia. Nevertheless, it is evident that traditional, community-based fisheries management systems have a long and effective history in many parts of the country.

Such systems have been noted and minimally described in parts of Sumatra (Schot, 1882; Snouck Hurgronje, 1906; van Royen, 1927), Kalimantan, Maluku, Irian Jaya (van der Sande, 1907; Galis, 1955), Sulawesi (Kriebel, 1919), Central Java (LeBar, 1972; Collier *et al.*, 1979), East Java (Kendrick, 1993), Flores (LeBar, 1972), and Tanimbar (Kolff, 1840; van Hoeyvell, 1890; LeBar, 1972; Polunin, 1982; 1984). There is no comprehensive documentation for Java or the Lesser Sunda Islands (Bailey and Zerner, 1992a).

In Eastern Indonesia, community-based fisheries management systems appear to remain widespread. They occur in Ambon, Maluku, the Kei Islands, and along the northern coast of Irian Jaya. Lineages held use and management rights to certain reefs on Tanimbar, and permission to use them had to be obtained from the *tuan tanah* ("Lord of the Land"). Among the Galela people of Halmahera, northern Maluku, villages had tenured fishing grounds. On Selayar Island, in the Flores Sea, sites for fixed gear were tenured, and inherited by sons (Polunin, 1984). In Irian Jaya, the Ormu and Tepra coastal communities, near the provincial capital of Jayapura, manage fishing rights and access via a combination of family-owned reef properties and village-controlled inshore waters (Krey and Marlessy, 1990). Outsiders who do not first obtain permission to fish in family-owned areas must pay compensation in marine products captured. Permission must be obtained from the village "sea master" (*tubwe*) to fish in village waters. Village rights are commemorated in annual ceremonies. Closures are implemented seasonally and for life-crisis rituals.

There is relatively little information from Western Indonesia. In parts of Sumatra, exploitation of seas adjacent to settlements was partitioned among guilds, and the Orang Laut of the eastern coast agreed about which groups were entitled to exploit defined off-shore grounds. In Sumatra, the *marga*, a central village with smaller satellite communities and large tracts of land, river, and coastal water (Hanson and Koesobiono, 1979) was the institution that managed terrestrial and marine resources, by annually auctioning and renting defined areas to the highest bidder (Collier, 1979). Management was based on customary *adat* law. Off Tuban, Central Java, anchored floating markers identified the boundaries of village sea territories.

Today, local-community fisheries management systems are the exception, rather than the rule in Indonesia (Zerner, 1989a; 1989b; 1991a; 1991b; Bailey *et al.*, 1990; Bailey and Zerner, 1991; 1992a, b). But given their wide geographical distribution within the country, it can be hypothesized that formerly they were much more widespread.

Undermining of traditional management systems began with the consolidation of Dutch colonial power (Bailey and Zerner, 1991). Based on Dutch colonial legacies, fisheries administration and governance in Indonesia is centralized, and traditional community-based systems have no legal basis whatsoever. Traditional management systems (*hukum adat*) of small-scale fishing communities have no status under statutory law, since they are not recognized by the *National Fisheries Law (Undang*

Undang No. 9/ 1985).⁷ Customary law (*hukum adat*) and community territorial rights (*hak ulayat*) receive no mention in fisheries statutes on management.⁸ Further, apart from formal government organs, no community level institutions or leadership roles receive acknowledgement and authority in *Statute No. 5/1979*, the law which authorizes the structure of village government (Zerner 1991).

National policy is that all Indonesian waters are State property, to be managed centrally, through the provincial, regency and village offices of the Directorate General of Fisheries, for the benefit of the entire nation. This is tantamount to legally sanctioning an open access system nationwide, regulated theoretically - since it is practically unenforceable throughout the vast archipelago - only by certain technical considerations regarding gear type, vessel size and mesh limitations.

However, although statutory law does not explicitly recognize traditional community-based management systems, it does not assert that they do not exist. But the centralization philosophy, an integral part of the nation-building effort in Indonesia, is a major reason for the undermining of local management institutions: "Not only is the Indonesian state generally suspicious of local autonomy, it is actively involved in seeking additional revenues and export earnings" (Bailey and Zerner, 1992:10). The control of and rents extracted from marine resources is one way of achieving these goals. As a result, traditional community-based marine resource management systems are being undermined. In many areas of Indonesia local and fisheries officials uphold the statutory law of open access.

Traditional Community-based Fisheries Management in Maluku, Eastern Indonesia

Community-based traditional management systems remain widespread in the central and southeastern Maluku Islands (Bailey and Zerner, 1992b; Zerner, 1991a; 1991b; 1991c), where they are known locally as *sasi* (lit. "to witness"). The term *sasi* in Maluku can be equated with a ritually-sanctioned taboo or prohibition on the use of a resource of commercial or subsistence value to the community. *Sasi* institutions, rules and sanctions are locally varied, but are grounded in customary law (*hukum adat*) and community territorial rights (*hak ulayat*). *Sasi* in inshore marine waters may have initially regulated access to pelagic schools and only more recently have been applied to commercially important reef species (Bailey and Zerner, 1992b).

Territorial Definition

Community sea territories (*petuanan* in central Maluku, *bati* in the northern islands) are well-defined. They extend from the low tide mark seawards to the edge of the shelf around the islands. *Sasi* regulations generally cover only waters up to 20 m in depth, since surveillance, monitoring and enforcement would be impracticable at greater distances, and these are regarded as free of access.

(a) *Physical Definition*: Areas are defined with reference to prominent physical features, especially promontories delimiting a bay, and linked by an imaginary line. Some communities also claim use and control rights over submerged reefs (*negeri tengelam*, lit. "submerged country"), which may be several kilometres distant from the community.

⁷ This is in striking contrast to the Basic Agrarian Law, which does recognize and uphold community-based rights and customary law for agriculturalists.

⁸ Ironically, Indonesian statutory law does recognize the traditional rights of other nations to fish within its waters while not recognizing those of its own small-scale fishermen (Zerner, 1991b)

(b) *Ritual Definition*: The boundaries also defined during annual rituals. The ritual practitioners and legal enforcers (*kewan*) make an annual pilgrimage to sacred sites (*kramat*), located at the heads of promontories, during which they "... are simultaneously articulating boundary lines. Sometimes these lines are linked to trees, promontories, submerged rocks or other natural topographic features that serve as guides to the seaward boundaries of the *petuanan*." (Bailey and Zerner, 1992b). An area placed under *sasi* is marked with a physical sign (*salele*), and decorated ritual "trees" are moored at the seaward limits of a community's sea territory (Zerner 1991c; 1991d). Elaborate rituals are also performed when an area is placed under *sasi*, during which the ritual practitioner walks the boundaries of the terrestrial component of the territory, disclaiming sacred verses in ritual speech and blowing on a conch shell (Zerner 1991c, 1991d).

At Nolloth Village, on Saparua Island, a female and a male *sasi*, with distinct functions and associations, are recognized. For the female "big prohibition" (*sasi mai*) two canoes filled with fruit are set parallel, with their ends pointing inland and seawards. These canoes demarcate critical boundaries between two neighbouring community territories (Zerner, 1991). The male "little prohibition" (*sasi simanuwal*) governs particularly productive areas within the territory. These areas are marked along the shore with trees tied with a girdle of leaves. Formerly, these might have been marked by columns of chalk. Since 1980 the boundaries between adjacent village territories have been marked with permanent cement columns (Zerner, 1991).

Rights

In general, all villagers have rights to fish in their village sea area, except when it is under *sasi*, or governed by various sets of rules (*vide infra*).

Entry Rights

When a *sasi* is closed neither village residents nor outsiders may enter an area. Generally, the capture of migrant fish is open only to residents of a village. In some villages, however, outsiders may be permitted to fish for them. If outsiders wish to fish them commercially they must pay a fee (Zerner 1991c; 1991d). Thus there is a moral concept of rights (for villagers) and rights plus fees (for outsiders). Outsiders are able to negotiate entry rights for fishing and passage.

Rules

There exists an enormous variety of traditional community-based administrative systems in the Maluku Islands. Elaboration of such systems might be a result of commoditization, whereas relatively simple structures exist in a primarily subsistence economy. The wide variation in the regulatory systems and rules among villages in the region is probably a consequence of rapid change in the legal, political and economic spheres. But everywhere the principle resource regulated is trochus (Zerner, 1991c; 1991d).

(a) Species Rules

In many villages on Saparua and Halmahera islands, rules applied to different species are based on whether the species is regarded as a resident, or non-schooling fish, or migratory, or schooling fish. This is further qualified for schooling fish.

When tuna, for example, are observed within a sea territory, their presence is immediately reported to the *kewan laut* (the ritual practitioner for the sea) who goes to sea to examine the school. If he considers that the school is not yet properly formed, he immediately declares this species closed

(under *sasi*), which immediately prohibits any attempt to catch them or to enter the area where they are located. The *sasi* is opened when the *kewan laut* determines that either the school has formed or the tuna are about to depart.

Diverse rules and strategies govern the capture of resident species. Rules pertain to gear types, size regulation and the behaviour of fishermen. Other regulations specify ownership of the harvest area, the rights of harvesters, who has rights to direct financial benefit from the harvest, and the nature of contracts with external entities or individuals. Other regulations concern sustainability of the resource and economic viability of the fishery (Zerner, 1991c; 1991d).

(b) Gear Rules

When the *sasi* has been lifted, stringent gear rules still apply, in the interests of equity. Netting is forbidden, and a casting net may be used only from a boat. Further, only paddled boats may be used to pursue tuna. Since these mobile fishes are considered collective property, partly because they are temporary migrants, gear, time and location rules are applied in the interests of equity (Zerner, 1991c; 1991d).

To promote equity of access to the trochus harvest scuba equipment, affordable only by the rich elite, is banned. However, where the government controls the harvest and divers are hired to bring it in, scuba gear is permitted. In many places stringent minimum size regulations are enforced.

Spatio-Temporal Rules

Short-term temporal and spatial *sasi* restrictions were also imposed. For example, in order to secure a skittish school of fish, *sasi* would be declared until they had migrated to and settled in one area, where they could be captured easily.

The principal *sasi* regulation is seasonal closure of specified areas. This is announced by the (*kewan*) walking around the perimeter of the estate, as well as being sung, chanted or broadcast. Subject to other regulations, community members may fish an area only during the open season, and never while it is closed.

At Nolloth Village the principal time regulation on the trochus stock is the number of years between harvests.

Size Limits

Size limits are also imposed on trochus that can be harvested. On Saparua and Halmahera islands, for example, the minimum size permitted is 5 cm (three fingers' width).

Authority

The ritual practitioners (*kewan*), together with other customary officers and government officials, constitute the institutional framework for *sasi* and its regulation of fisheries. They are also responsible for monitoring compliance and apprehending violators. At Porto Village, on Sapuara Island, the administrative system is headed by the *latukewanno* (lit. "Lord of the Forest"), who is responsible for all resource use and environmental management in the forest and marine sectors of the village "estate". Monitoring and enforcement of regulations is divided by sectors: the *sinakewanno* handles the terrestrial sector whereas the *sarlattu* controls the marine sector. Assistants (*anakewanna*, lit.

"children of the ritual practitioner") implement the orders of the *kewan*, broadcast public information throughout the community, and monitor compliance (Zerner, 1991c; 1991d).

Sanctions and Punishment

Violators are punished by the village councils. Punishment formerly included public shaming, by binding the violator with the physical sign of the *sasi*, corporal punishment with a rattan cane, and, most usually, monetary fines. Nowadays monetary fines are usually imposed. In the past boats, gear and catches were confiscated. The sudden disappearance of material objects by confiscation was also believed to have been a manifestation of supernatural punishment in some communities (Zerner, 1991c; 1991d). It is believed locally that areas under *sasi* are supernaturally "witnessed" and protected by ancestral spirits (*saksi*), that punish violators with sickness or death.

Change in the System

Such a system, in one form or another, is known from Dutch colonial records to have existed since the 1830s. But there have occurred significant changes over time.

Prior to the late-1960s, *sasi* was hardly applied to the marine environment, but rather to the commercial regulation of terrestrial products. For example, of the 109 rules in the 1870 rulebook of *kewan* regulations for Porto Village, only five related to the marine environment (Zerner, 1991c; 1991d).

In the marine environment, the general rule was that only local villagers have access rights to village waters. There were further rules governing species, gear and timing of fishing (*vide supra*). But, since the 1950s and 1960s, an external market in trochus and other shellfish has driven changes within the *sasi* system of marine resource management. At that time, scores of cash-poor villages and village governments seized the opportunity to profit from this new market by re-structuring the *sasi* system through new regulations.

The most fundamental of these was the issuance by village governments of their regulations to village sea space and their right to a percentage of the income generated from it. Thus the *sasi* was transformed from one of a common property for village residents when resources had no commercial value to one in which the local village government regulated activities in response to local market demands (Zerner, 1991c; 1991d). Thus external markets shaped internal property rights. In tandem with this, it was specified that the income from the resource was to be used for community benefit and not for individual profit.

Community-Based Management of Fixed Gear

Fixed gear is commonly subject to traditional ownership rights. For Indonesia, traditional community-based management of the *roppong* FAD device in inshore and deep (distant) waters off Mandar, Sulawesi and in the Makassar Strait has been described by Zerner (1989a; 1989b; 1989c; 1991a).

Roppong are anchored, bamboo-rafts that function as FADs to attract scad and tuna. Priority rights to a hitherto open area are established by successfully anchoring a raft, which gives its owner the concurrent right to sever the anchor lines of unstable rafts that drift and intrude on others, but only after consulting with the intruding raft's owners, boat bosses or capitalizers, and deciding on a solution (Zerner, 1991a). The fishing rights and right to the site belong to the founding family, as long as a raft continues to function.

Site-rights are defended vigorously, and in particular against commercial purse-seiners that attempt to lure the aggregated fish away with lights, in a conflict remembered locally as the "rock wars" (because rocks were hurled at intruders). Zerner (1991a) reports that off the Bulukumba coast of South Sulawesi these rafts are regarded as family heirlooms, and the sites are inherited. According to customary law, fish aggregated beneath a raft are said to belong to the raft's owner, whereas those elsewhere are unowned. This is not recognized by statutory law, according to which aggregated fish are not owned until either netted or dead (Zerner, 1991a).

But, in the Majene area, local regulations on the rights of adjacent owners failed to prevent overcrowding, overfishing and conflict. Despite regulating priority to sites, clear boundaries and minimum distances between rafts were not established. Hence there has been severe overcrowding in the fishery and greatly reduced catches have resulted (Zerner, n.d.).

The local traditional regulation of first-comer's rights to a fishing spot has been overturned by the courts. Zerner (1991a) describes one case where the crew of a first-comer's raft severed the lines of an intruding raft, and dispatched it to sea. The owner and crew of the first-comer raft "... were found guilty of intentional, wilful destruction of another person's property and fined under civil tort claims for damages caused by the loss of the *roppong*" (Zerner, 1991a).

The Majene court invalidated the customary practise as a custom that must be nullified and abolished. The court considered that the practise obstructed national development and would provide an opportunity for individuals to play judge and so threaten national stability. This decision both reinforced the national tendency toward open access in fisheries and deflated confidence in local rules and management procedures. It signalled the centralization of fisheries management.

Community-Based Royalties Systems

On Ambo Island, in the Balabalakang Islands of the Makassar Strait, Kalimantan, an indigenous royalties system has been employed for the last four decades to regulate the harvest of the marine resource-rich area, within about 3 km of the highwater mark. Fishing in deeper waters is free of charge. In principle, the royalty is 10 percent of the market value of the catch by weight taken by outside fishermen, but in practise the fee is negotiated and adjusted to circumstances. This provided a secure source of income for an otherwise poor area (Zerner, n.d.).

Four principal rules govern behaviour of the fishermen: all, both residents and outsiders, must pay the fee at the completion of the fishing and processing period; the village head must be informed of fishermen's intentions, especially if they anchor within the fringing reef; outsiders must carry a letter from their own village head stating their target species and target locations, and this must be surrendered to the Ambo village head; having reported to the village head, and indicated acceptance of the local rules, people are free to fish in Ambo waters. The fees collected by the village head are surrendered annually to the head of the Mamuju Regency, who determines the minimum amount that the islands must pay.

Although having worked well until the mid-1980s, the system is now apparently breaking down, since outsiders have been blatantly disobeying the rules. This has been encouraged by the official government policy of open access in fisheries. Further, since the local population administers a management scheme yet turns over 100% of the royalties to the Regency Government, receiving very little in return, they are becoming less vigilant. They bear all the management costs but reap none of the benefits.

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PHILIPPINES

There is extremely little documentation of traditional marine resources management systems in the Philippines, an archipelagic State with a diversity of cultures and rich fishing tradition systems, where such systems are to be expected. More detailed field research is likely to reveal the widespread existence of traditional community-based systems in the Philippines, since they appear to have been commonplace historically.

The coastal or "municipal fisheries" of the Philippines are operated under an open access regime. As established by *Presidential Decree 704* (also known as the *Fishery Decree of 1975*), "municipal fisheries" are those that use boats of 3 gt or less, or gears not requiring the use of a boat. "Municipal fisheries" operate in both inland and marine "municipal waters", the latter within 3 nm of the municipal coastline. The "municipal fisheries" of the Philippines are approximately equivalent to the artisanal, small-scale or traditional fisheries of other countries. In the Philippines, all other fisheries are known as "commercial fisheries" (Santos, 1980).

This situation has its origins in the colonial periods of both Spain and the U.S.A. Under the Spaniards, fisheries were for the welfare of the town (municipality) and were an open access resource, although private rights were leased to individuals, particularly for construction of fish corrals (Spoehr, 1980). The U.S. administration, by *Act 4003 Sect. 67 (1932)*, authorized municipalities to grant exclusive fishing rights to concessionaires within municipal waters via public auctions, with the principal intention of generating revenue for the municipality. Where this did not occur, gear was licensed to derive revenue (Santos, 1980). However, the Supreme Court ruled that the auction of exclusive rights pertained only to stationary weirs (fish corrals), oyster beds or fry-collection, and that municipalities could not exclude non-resident fishermen who obtained a permit from the Bureau of Fisheries and Aquatic Resources (Kalagayan, 1991). But under the *Fishery Decree of 1975* the licensing authority for municipal waters was given to the municipalities.

Milkfish (*Chanos chanos*) fry concessions have been widely examined (e.g., Smith, 1981; Chong, Smith and Lizarondo, 1982; Smith and Panayotou, 1987). The municipality, as the resource owner, grants to the highest qualified bidder the exclusive right to gather milkfish fry from municipal waters for a period not exceeding five years. Sealed bids are submitted annually on a designated date. Such concession fees comprise an important part of the income of many municipalities. In a survey of 35 fry grounds, milkfish concession fees represented an average of 13 percent of municipal income (Smith, 1981), and in the Western Visayan Province of Antique 21 percent of the income of the 15 municipalities is derived from such concessions. Several municipalities obtained almost half their income in this way (Smith and Panayotou, 1987). In small coastal municipalities this income is used to pay the salaries of municipal officials and the allowances of the Municipal Council (Smith and Panayotou, 1987). Fry collection is done by labourers who must sell their catch to the concessionaire.

According to early Spanish chroniclers, systems of community-based coastal and riverine fisheries management existed in pre-Hispanic and early-Colonial times, based on independent villages (*barangay*), around Manila and in the Tagalog Region of Luzon Island (Blair and Robertson, 1903-1909). Around Manila, villages claimed areas of river and sea that were defensible against neighbouring settlements (Francisco Colin, 1663, cited in Blair and Robertson 1903-1909). In the Tagalog Region village fishing territories could be used by outsiders on payment of a fee (Juan de Plasencia, 1589, cited in Blair and Robertson 1903-1909), and such territories could be bartered like other property (Francisco Combes, 1667, cited in Blair and Robertson 1903-1909). But, as Spanish

colonial rule intensified, the *barangay* was eliminated as an administrative unit, and their village sea territories disappeared with them (Lopez, 1985).⁹

However, it is evident that the tradition did not disappear entirely. There are several examples.

In the Lingayen Gulf of Luzon Island there is a *de facto* system of access restriction associated with traditional types of fish aggregation device (*rama* and *radar*), since the person(s) who established them have the exclusive right to fish around them (Galvez, 1991). Artificial reefs made of tires were introduced to the Agoo Municipality, in Ilocos Union Province, in 1981. Although fishermen from various villages assisted in their construction, those who were not members of the Agoo cooperative were prevented from fishing near them. Those who were allowed to work the artificial reefs had to pay a portion of their catch to the president of the cooperative.

At Quinlogan Village, a recently settled area on Palawan Island, fishing was historically conducted on an open access basis. But, with the arrival of migrants from the Visayan Islands, from 1960, concepts related to the national law of municipal fisheries were introduced. But, within the statutory law, local management rules have been introduced to regulate beach seine operations. This was introduced in the 1980s to allocate equitably access to the prime site for catching shrimp fry. Hitherto, operations were based on first-comer's rights, but crowding made necessary some kind of allocation mechanism. At the start of the season beach seine operators meet to allocate turns for all operators to the prime site. After the assigned operator has set his net, all others may set theirs, on a first-come basis (Veloro, 1992).

In San Miguel Bay, in the Bicol Region of Luzon Island, rights to fixed gear sites have been traditionally allocated to individuals by informal village resource managers *amoionadors* ("boundary setters"). These are mainly respected village elders well versed in the history of family claims to fishing sites. Their primary task is to regulate new entrants to minimize conflict with established gear (Cruz 1982; 1986). This has become formalized at the village level in more congested areas, where the *amoionadors* charge a fee for their services (Cruz, 1982), whereas in other areas their role is still informal and traditional. Elsewhere, municipalities regulate details of gear place to minimize conflict (Cantero-Pastrano 1955; Hart 1956).

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⁹ But they were re-introduced during the Marcos era.

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