6.1 Jurisdiction

Under national law, the sea and all its resources are the property of the national government of Indonesia. National fisheries and coastal management consist of rules and regulations administered by more than 20 largely uncoordinated ministries (Nikijuluw 1996; Soetaryono 1996; Kusuma-Atmadja and Purwaka 1996). The consequences of poorly organized management structures at the national level can be seen in terms of confusion, lack of information, and poor motivation at provincial and regional levels. Efforts to redress the problems include the recent establishment of a national, multi-ministerial body (DKN) charged with coordinating marine development and conservation policy. There have been moves towards decentralization and the national government is encouraging provinces to back up national law by developing more detailed and locally appropriate provincial legislation. Most recently, Act No. 24, 1992, on spatial planning, gives regional governments the mandate to zone coastal areas and to establish management plans in consultation with village level governments. Policy makers are currently attempting to clarify whether the zoning of territory can be extended into the sea, giving the province powers to zone marine waters for various commercial and conservation purposes. As of 1998, consultation with the village level on coastal zoning and planning has barely begun. Also, comprehensive operational rules at the provincial level are still lacking for most national laws pertinent to coastal management. The Maluku province has, however, developed some regulations, for instance, those prohibiting the mining of corals, the cutting of mangroves and the capture of dolphins.

6.2 National Laws Affecting Artisanal and Small-Scale Fisheries

National level laws that, if enforced, would directly affect Maluku’s artisanal fishers stem largely from Law No. 9, 1985 on Fisheries and the Agriculture Minister Decree No. 607, 1976, concerning fishing zoning. Consequent to these laws, the use of gear types destructive to fisheries such as explosives and poisons, are prohibited. There is also an inshore fishing zone designated for use by small-scale and artisanal fishers, and mesh sizes are regulated. All mesh must be over 25 mm; seine nets for tuna and skipjack must exceed 60 mm. Fish habitats including coral reefs, mangroves and sea grass beds are specifically protected under the Biological Resource Conservation Act No. 5, 1990. Forty-eight marine mammals, birds, crabs, shellfish and coral species have been declared protected species, including some that are commonly harvested in Maluku, i.e., turtles, dugongs, coconut crabs, top shells, giant clams and a number of other edible shellfish. A few marine protected areas have also been set up, including Pombo Island in the Haruku Strait in the Lease Islands.

6.3 Key Management Issues

In spite of its huge marine territory, Indonesia has no separate Department of Fisheries. Fisheries come under the Department of Agriculture. The country is divided into nine fisheries resource management areas, two of which lie within the Maluku province. For each area, there is an annual exercise of setting Total Allowable Catches linked to the standard fisheries management concept of Maximum Sustainable Yield (MSY). Currently, there is a move to attempt to determine what are known as MEY (Maximum Economic Yield) and MSOY (Maximum Social Yield).
Officially, the Fisheries Agency is in favor of responsible fisheries but, on the other hand, there is tremendous pressure to increase fishery-based income and employment as rapidly as possible, especially through increasing the industrial fleet targeting pelagic fish in the deep-water EEZ (V. Nikijuluw, pers. comm. 1998). The 1997 MSY estimate for the nation is 6.1 million tonnes, and government statistics suggest that catches amount to only 40% of this potential yield. According to government statistics, the Maluku province alone should have a standing stock of fish and shrimp totaling 2.74 million tonnes. MSY, calculated as 50% of stock, is, therefore, estimated to be 1.37 million tonnes. The total catch in 1997 was only 24.4% of the theoretical MSY, leading the national government to promote expansion of the industrial fishery. However, there are questions with regard to the government figures (see below and Section 3.4.2).

One major problem with the national expansionist policy and with the process of setting catch limits is that calculations of potential yield are extrapolations from stock assessments conducted in the early 1980s. These old data are augmented with catch statistics that are limited in their coverage and often of unknown or suspect quality (Proceedings of the National Conference on the Role of Communities in Coastal Resource Management in Indonesia, 1996). As of 1998, Maluku still has no coherent, comprehensive and reliable system for collecting catch data (Purnomo 1996), although LIPI, a national research institution, has plans to develop and introduce a system at some future time. It is widely acknowledged that fishing boats from other provinces and countries frequently fail to land their catches in Maluku, or they trans-ship at sea. Thus such catches go unrecorded. Hence, despite there being in theory a large available fish biomass, several important commercial stocks are, in fact, already over-fished and declining in Maluku (Governor Latukonsina, pers. comm. 1998).

A second key issue is the lack of enforcement power to defend Indonesia’s vast EEZ from illegal fishing by foreign and domestic boats, including live fish traders using potassium cyanide. Illegal fishing contributes to the total of unrecorded fish catches (Fox 1996).

The third key issue is one of allocation: the need to balance industrial-scale fisheries serving export markets with the need for local food security and employment for coastal communities. In the Agriculture Ministry Decree No. 607, 1976, Indonesian waters were divided into zones in an attempt to reserve inshore waters for the artisanal and small-scale sectors. Under this law, vessels over 5 gross tonnage (GT) are prohibited from fishing within three miles of shore, vessels over 25 GT must operate over four miles from shore, and vessels over 100 GT must stay five miles from shore. Small boats are free to enter the offshore fishing grounds at will. This is one of the laws that is not effectively enforced, with the result that clashes between the industrial sector and coastal communities are increasingly common (Galanggajir 1996). Those behind the drive for further expansion of industrial fleets fail to acknowledge this problem.

6.4 Agencies Involved in Fisheries Management and Development in Maluku

The planning board, BAPPEDA, is a coordination institution below the national planning board, BAPPENAS. BAPPEDA holds a strategic position for coordinating the development of various sectors in the region, including fisheries, and has offices at both provincial and district levels. The provincial office of BAPPEDA is also the governor’s office. The provincial governor holds two positions; he is head of the provincial government as well as the provincial representative of the Minister of Internal Affairs. BAPPEDA has a close working relationship with the Department of Internal Affairs.
BAPPEDA has to date largely concerned itself with the expansion of fisheries rather than with management or conservation. This department is also in charge of environmental impact assessment. However, assessments that do occur are typically very narrow, not cross-sectoral.

In Maluku, attempts to rationalize the fisheries development policy have led BAPPEDA to develop the concept called “Gugus Pulau and Laut Pulau”. Under this scheme, the province is divided up into eight clusters of islands (the Gugus Pulau), with the Laut Pulau being the areas of open sea between these clusters. To date, these divisions are only poorly defined areas on paper, not operational management units. One problem facing provincial planners is that administrative boundaries of districts and sub-districts do not coincide with ecological boundaries.

Among its many tasks, BAPPEDA oversees fisheries development project planning. However, much of BAPPEDA’s energy tends to be directed to large development projects such as the World Bank-funded COREMAP rather than to smaller programs such as fisheries development and project evaluation. Once the planning of a fisheries project has been completed by BAPPEDA, it goes to the Fisheries Agency for implementation. This agency also considers economic development as its first priority. In practice, there is no coordinating body focused on coastal and marine resource management and protection.

The various agencies and institutions involved in the fishery resource management system in Maluku can be classified into two major groups and both groups are coordinated through BAPPEDA (Table 6.1). Group I is the group of institutions directly involved in fisheries activities and deals with supplying skilled human resources in the marine and maritime areas; supplying maritime facilities such as ships, harbors, and other equipment; facilitating training; and providing necessary funding, according to formal regulations. Group II is a group of institutions that deals with marine and fishery problems as a subset of their duties. In addition to these is the national research institute, LIPI, which provides information to policy makers. LIPI has a regional research center in Ambon.

| Table 6.1. Government bodies involved in fisheries management at the provincial level. |
|---------------------------------|---------------------------------|
| **Group I**                     | **Group II**                    |
| Fisheries Agency (*Dinas Perikanan*) | Dept. of Internal Affairs (*Dep. Dalam Negeri*) |
| Navy (*TNI Angkatan Laut*)      | Environment Bureau (*Biro Lingkungan Hidup*) |
| Police (*Polisi Republik Indonesia*) | Law Bureau (*Biro Hukum*) |

Twenty-six key respondents from various governmental institutions involved directly and indirectly in the process of fisheries development and management at provincial and lower levels were interviewed to identify the roles, strengths and weaknesses of each agency. The results are presented in Appendix 5. Roles were tabulated under the following management functions: 1) information gathering and provision, 2) project planning, 3) project implementation, 4) evaluation of projects (physical and legal aspects), 5) enforcement of fisheries law, 6) funding of projects, 7) routine fisheries policy implementation, and 8) issuing permits and licenses and collection of taxes and fees.
Information gathering and dissemination are performed by all agencies with the exception of the police. The planning of fisheries development projects involves BAPPEDA, all levels of the Fisheries Agency, the Law Bureau, and village government heads. The process is described below (Section 6.5.1). Depending on the type of project, provincial and district levels of the Department of Transport and the resource conservation section of the Department of Forestry may also be involved. What is interesting is that the Environment Bureau has not identified this as one of its areas of activity. In general, the Environment Bureau is a very weak player, not least because its area of jurisdiction relative to the environment section of BAPPEDA is unclear. However, the Environment Bureau does become involved during the implementation of a project, along with BAPPEDA, the Department of Forestry, the Department of Transport, the Fisheries Agency, and regional, district, and village government heads. Most agencies (except for the Environment Bureau and Law Bureau) have responsibility for evaluating the physical and legal implications of projects, but evaluation and feedback into new project planning forms an area of extreme weakness in the system.

Enforcement is formally a shared responsibility of the police, navy and Fisheries Agency. The Department of Transport plays a role in enforcing licensing regulations, whereas various government offices may facilitate reporting of offenses or, in the case of village chiefs, apply sanctions available under the local government or adat law.

Funding for fisheries development comes from BAPPEDA, the Fisheries Agency and Department of Forestry and may also be supported from local government coffers. Routine management tasks are performed by most agencies, with licensing and collection of fees and taxes being the special purview of the Fisheries Agency and Department of Transport. Only the Environment Bureau, Department of Forestry and provincial and district government offices are not directly involved in day-to-day fisheries management tasks. There is, therefore, a clear need for communication and coordination among agencies.

The key findings from the interviews of government staff were as follows:
- There is no special institution to manage coastal and fisheries resources. The management aspects are divided among a range of institutions. This causes difficulties in coordination.
- Authority seems to be an important factor in the management process. Because of the “top-down” approach, the determination of limits of authority must precede any decision and often, nothing will be done without explicit approval from a higher level.
- Limited human resources and poor motivation very much affect all levels of the management system.
- Staff personnel in every agency and at every level reveal a lack of knowledge of fisheries law and management principles.
- Limited equipment, facilities and funding hinder management and enforcement functions. Budgetary problems are most critical at the lower (sub-district) levels, and greatly hinder both enforcement and the transfer of training and information to the village level.
- Sustainability of resources and habitats is still a low priority compared to the expansion and development of fisheries.
- Better scientific data and greater cooperation with research institutions and universities are essential in order to support the management system.
- Technical guidelines from the national level are inadequate. For example, national instructions to collect taxes on shellfish are not accompanied by instructions on the implementation of such a tax.
- Since the village may carry out many fisheries resource management functions, it means that, in theory, the village holds an important role in the management process.
However, a legal basis for the village role, and in particular for the *adat* institution, *sasi*, is not explicitly provided. Government staff personnel acknowledge the strategic position of local governments as implementing agents but also tend to see village chiefs as being incompetent in resource management.

- Fisheries management issues are not of central concern to village chiefs, who have heavy work loads and are mostly concerned with economic development.
- Control by the navy is difficult because its personnel are found only at the provincial level and tend to focus on international piracy and deep-water fisheries infringements.
- Cooperation between the navy and the police as well as with the army (*Babinsa*, who may be present in villages) is not optimal.
- The enforcers (police and navy) are important players. In many cases, infractions which were not dealt with properly have caused other problems to arise (for instance, bad relations with community leaders) which will hamper future management.

### 6.5 Operationalizing Fisheries Policy

In operationalizing fisheries policies, there are two central activities: 1) the process of establishing a plan for a development project, and 2) the process of producing a fisheries law.

#### 6.5.1 The process of establishing a development project plan

As stated in the Governmental Decree on coordination of development planning in the regions (PP No. 6, 1988), BAPPEDA has to integrate all the development planning within a region so as to minimize environmental impacts and ensure sustainability of resources. In the planning process called P5D, BAPPEDA coordinates the macro planning, whereas technical institutions establish the micro plans. A proposed project that may bring disadvantage to a community and offers no appropriate compensation can be rejected by the provincial or district government.

The establishment of the Regional Development Management and Planning Orientation (P5D) starts with the collection of ideas from village governments and proceeds as follows:

1. Village level. Through the Village Development Deliberation (*Musbangdes*), various village stakeholders have the chance to suggest their ideas, which may include those for the development of fisheries.
2. Sub-district level. Ideas from the village are introduced to the Permanent Work Region Unit (UDKP). This forum begins selecting ideas for project development.
3. District level. At a Development Coordination Meeting (*Rakorbang* I), representatives from relevant sectoral institutions (such as the Fisheries Agency) contribute their planning suggestions, including suggestions on coastal development.
4. Provincial level. At the Development Coordination Meeting (*Rakorbang* II), proposals from all the districts and from the province are reviewed to make sure that provincial and district level projects can support one another.
5. The final work programs are reviewed by the Regional House of Representatives (DPRD) and, if approved, will then be announced as development projects.

Because it starts at the village level, this looks like a “bottom-up approach”. In reality, what is finally approved after the lengthy rounds of selection and project development may be far from the original ideas proposed or ideas from a village may be dropped entirely. Another problem is that only formal government structures are involved. At the *Musbangdes* level, input from local stakeholders is coordinated by the LKMD assisted by a representative from the sub-district level. The *kewang*, being part of an *adat* institution, is not acknowledged in
the official governmental structure. *Kewang* members may be invited by the village government to discuss and participate in the planning process as individuals. However, they cannot formally represent their position as an institution, even though the *kewang* specifically deals with the village resources.

6.5.2 The process of producing a fisheries law

The process starts with an academic draft put forward by the appropriate technical institution, which in this case is the Fisheries Agency (at the provincial or district level). In establishing the draft, the Fisheries Agency will consult other government institutions as required. Again, because the traditional law enforcers in the *kewang* institution have no standing in the government, there is no place here for the *kewang* to initiate the process or draft its ideas.

Once the academic draft is completed, the Fisheries Agency will send it as a proposal to the Governor, routed through the Head of the Law Bureau (Department *Dalam Negeri*) for legal examination. In the process of reviewing the proposal, the Law Bureau considers higher-level regulations related to the proposal, reviews the advantages and disadvantages, and then invites the Fisheries Agency to cooperatively present the proposal. In the next stage, the Law Bureau would ask the Regional Regulations Pre-planning Reviewing Team¹ (*Tim Pembahasan Pra Rancangan Perda*) for a meeting and discuss the proposal.

After going through several rounds of examination, the team will decree the proposal as a Regional Regulation Plan (*Rancangan Perda*), which is then sent to the regional House of Representatives (DPRD) for approval. The proposal is sent to the DPRD with a Letter of Introduction from the Governor. The DPRD will then form a Special Committee (*Pansus*) to process the *Rancangan Perda* further and at the end, it becomes a decreed Regional Regulation (*Perda*)².

6.6 Licensing

Fishing licenses allow access to particular fishing grounds. Foreign and domestic industrial vessels over 30 GT which are deployed in eastern Indonesia, obtain fishing licenses directly from the national government in Jakarta. Vessels of 10-30 GT are licensed by the Fisheries Agency at the provincial level whereas smaller boats (under 10 GT) are dealt with at the district level. Artisanal fishers require no license to fish with hand lines, spears, traps or simple nets.

Commercial operators must obtain permits from the Department of Transport, which regulates the placement of floating lift nets (*bagans*) and fish aggregating devices (*rumpons*) and issues permits for boats to operate from particular harbors. Interviews with staff in the Department of Transport revealed that, in general, they simply stamp forms and collect fees. There is little attempt to consciously manage or control where and how commercial boats operate.

¹ The Team is led by the Regional Secretary (Sekwilda) and consist of the following members: Sekwilda assistants, BAPPEDA, the Social Politic Directorate, Finance Bureau, Economy Bureau, Environment Bureau, Government Bureau, Fisheries Agency (Dinas Perikanan) and other related institutions as required.

² If the Fisheries Agency is in urgent need of a Law, they can ask the Governor (for Level I purposes) or the District Head/Bupati (for Level II purposes) to issue a decree/statement that can be used as a law in principal for their urgent need.
The Decree of the Agriculture Minister No. 51, 1997 defines responsibilities for permitting the deployment of fish aggregating devices (referring to both rumpons and lift nets). FADs within three nautical miles from the shore are regulated by the district government. Devices between three and 12 miles offshore are regulated by the province and deep water FADs by the national Directorate of Fisheries.

6.7 Enforcement

Because of the immensity of the coastline, the national laws as well as provincial regulations are often effectively unenforceable. Lack of enforcement is a major problem in Maluku with its multitude of small islands. Fish and turtle traders exploiting endangered species or using prohibited gear types bribe enforcement officials or operate in places where the patrol boats never go.

Enforcement is officially in the hands of the navy, which operate at a provincial level, and the police, who have a “water police” section to deal with fisheries offences. However, the boundaries of jurisdiction and responsibility are not clear to the staff in district offices, and the level of awareness and concern of police to fisheries issues are minimal. Infrastructure and funding are extremely limited and any action taken is reactive, not proactive. In theory, the police can rely on the navy for assistance with infrastructure (e.g., speedboats) but in practice, our interviewers were told that the agencies do not work together.

6.8 Communication and Collaboration Between Village and Higher Levels of Management

Although there appears to be, at least in a de facto sense, a degree of co-management of marine resources, in reality the government departments and village level institutions (village government, sasi authorities) operate in isolation one from the another. Information may, in some cases, trickle down from the national level to the village but there is no mechanism for feedback from the village to the national level. National prohibitions against blast fishing and the use of poisons are reasonably well known at the village level but other regulations, including the identity of endangered and prohibited species and the boundaries of marine parks and protected areas, are virtually unheard of.

Relationships among village, district and provincial levels are also not close when it comes to fisheries issues. The Fisheries Agency has extension staff (three on Haruku, two on Saparua, and one on Nusa Laut) whose job it is to convey information to the village level. However, they usually act in response to a request rather than proactively. They do assist commercial operators to renew their licenses but, in our interviews with artisanal fishers, we found that they are virtually invisible to this sector. There has been an attempt by extension staff to influence fishers to stop using destructive fishing gears but in their own estimation, this program has failed to make any difference. Instead, they feel that providing gears and motors to groups of fishermen and promoting aquaculture are the ways to effect change. Their ability to deliver such assistance is, however, very limited. This extension service is short of funds and finds it difficult even to cover transportation costs for field visits.

According to our respondents, village governments and, in particular, the village heads (kepala desas) have, in theory, a legal role in most management functions (Appendix 5). In many cases, however, they lack the means, time and motivation to attempt management at the local level. In a political climate of “top-down” decision-making, many local leaders are also reluctant to be proactive, preferring to act only when directed by a higher authority. In the
opinion of Fisheries Agency staff interviewed, the competence of the average village head in terms of education level and experience is very limited. No doubt, the apparent degree of condescension and lack of appreciation for local knowledge hinder any move towards power sharing and decentralization of decision-making.

Fisheries Agency personnel interviewed have positive opinions regarding sasi as an institution and would like to see some move towards formalizing the rights and responsibilities of local management bodies through the development of a provincial law (Perda). They also attested that in their dealings with commercial operators, they insist that these fishers respect local sasi rules and pay whatever access fees are imposed by local governments.

The importance of communities in resource management was acknowledged by the national government in 1982 and 1984, when environmental awards were presented to the villages of Ihamahu and Haruku in recognition of their local sasi institutions. However, this was not followed up by concrete action to formalize a role for community traditional institutions in resource management.

6.9 Conclusions

Indonesian fisheries management is complex, multi-agency, and “top-down” and, at the same time, is faced with the huge task of controlling a vast marine area and multitudes of islands and offshore reefs. Ultimate power is retained at the national level and provincial and lower levels have insufficient power to control regional marine resource exploitation and conserve resources. At the same time, as fisheries exploitation and marketing systems encourage over-fishing and use of destructive gears, the enforcement of national fisheries regulations is lax and there are serious deficiencies in government management agencies in terms of motivation, coordination, knowledge, infrastructure, and funding support. There is no one provincial body specifically focused on marine resource management and conservation which has power to coordinate the many agencies bearing management responsibility. BAPPEDA, which could play this role, has many other sectoral responsibilities, is focused on development rather than management and conservation, is weak in areas of evaluation and inter-sectoral coordination, and has no presence below the district level. Also, the limits of power and jurisdiction among the other agencies are often unclear.

From evidence of over-fishing of several key stocks and drastically declining artisanal catches (see Chapters 5 and 8), it is clear that the current management system needs to be overhauled to avert the collapse of Maluku’s potentially rich fisheries. Government staff generally agree that the role of the local community is essential to fisheries management because the local leaders hold a very strategic position close to the resource and fishers. Even though informally supported in some ways by the police and the Fisheries Agency, sasi and therewith the kewang are effectively isolated from regional and provincial management structures because of the general lack of effective communication and coordination. Also, local village institutions, while generally well respected, have no legal standing and are in a weak position in the process of planning for fisheries development as well as in the process of developing fisheries policy and regulations.