



# Roles of Local Institutions in Fishery and Coastal Resources Management

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This article is based on discussions during three workshops such as those conducted in Mataram, West Nusa Tenggara, Indonesia, and in Satun and Phuket Provinces in Thailand, on the roles of customary institutions and community groups in fishery and coastal resources management, emphasizing on the relevance of traditional knowledge in broadening the frontiers of scientific knowledge for sustainable fisheries management.

Local institutions have been playing crucial roles in the development and management of fishery and coastal resources, especially in creating an environment for its members to be participative in the decision-making processes and to be more productive and thus, improving their ways of life. Many countries in Southeast Asia have been promoting sustainable development and in so-doing, have implemented decentralization schemes by devolving the resources management responsibilities to institutions or units in local communities.

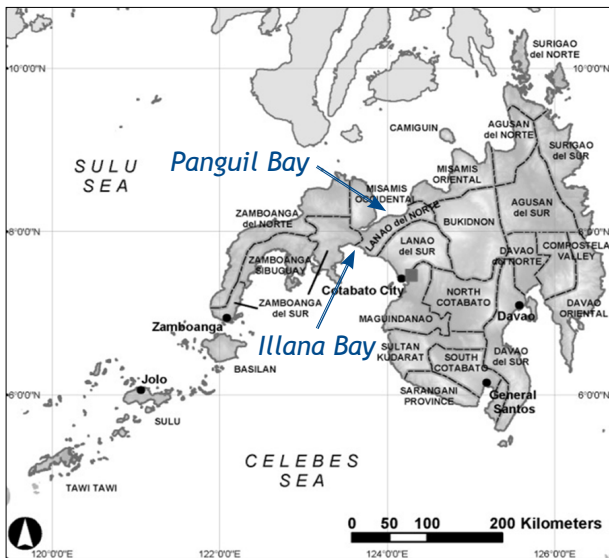
Indonesia, for example, had adjusted the direction of its fisheries management to ensure that the country's fishery resource is not depleted in spite of efforts to increase fisheries production for improved economy and sustained local livelihoods. Specifically, Law 31/4004 on Fisheries was enacted to strike a balance among the competing goals of exploiting the fishery resource, addressing some serious



Map showing the countries bordering the Gulf of Thailand

problems in fisheries management and enforcement as well as alleviating poverty in fishing communities (Patlis, 2004).

In Thailand, many laws have been promulgated to promote decentralization of administrative responsibilities to the local level, such as the National Constitution B.E. 2540 (1997), Fisheries Act B.E. 2490 (1947), AoBoTo Act B.E. 2535 (1994), among others. Specifically, the Tambon (Sub-district) Administrative Organization (TAO), as a small local government unit has also been assigned the duty of managing local coastal fishery resources for the benefit of the local people. Furthermore, for the countries of the Gulf of Thailand, namely: Malaysia, Vietnam, Cambodia and Thailand, the involvement of coastal communities



Map of Mindanao (Philippines) showing Panguil and Illana Bays

2000). In addition, there are also a number of stakeholders' groups and NGOs in the local communities of the country, one of which is the Lanao Aquatic and Marine Fisheries Center for Community Development (LAFCCOD) based in Maranding, Lala, Lanao del Norte. LAFCCOD, which has the main task of implementing community-based coastal resource management for peace and development assistance, covers the coastal communities in the Province of Lanao del Norte and the Municipality of Tukuran in Zamboanga del Norte in western Mindanao.

The main goals of LAFCCOD include among others, the ecologically sound management and development of fisheries resources with the direct and active participation of small fisherfolks and their communities, and restoration and conservation of the coastal and marine resources in Illana and Panguil Bays (LAFCCOD Online) in Mindanao.

in fisheries management could be observed (Nasuchon and Charles, 2010). Their study further suggested that in Vietnam and Cambodia, there is a need for significant legislation to control fisheries operations and greater clarity of the role of communities in management. In Thailand, there is a need for greater support of local-level enforcement and monitoring activities, while in Malaysia there is an overall need for more support to local fisheries management.

In the Philippines, the Local Government Code of 1991 (Republic Act 7160) and Philippine Fisheries Code (Republic Act 8550) have given the local communities the right to enforce fishery laws and adopt fisheries management measures in their areas of responsibility. Moreover, in line with the fisherfolks empowerment program of the Philippine Government, the Guidelines on the Creation and Implementation of the Fisheries and Aquatic Resources Management Councils (FARMCs) were established to institutionalize the major role of the fisherfolks and other resource users in the planning and formulation of policies and programs for the management, conservation, protection and sustainable development of fishery and aquatic resources (Department of Agriculture,

## Role of Customary Institutions in Fisheries Resources Management: Indonesia

A number of customary knowledge-based fisheries management systems exist in Indonesia (Adrianto *et al.*, 2009). The most common of which are: *Sasi Laut* (Haruku, Ambon, Maluku); *Mane'e/Mani'oe* (Talaud, North Sulawesi); *Parompong* (Spermonde Islands, South Sulawesi); *Awig-awig Tanjung Luar* (Tanjung Luar, West Nusa Tenggara); *Awig-awig Lombok Utara* (Gili Indah, West Nusa Tenggara); *Panglima Laôt* (Nanggroe, Aceh Darussalam); *Lamalera Whales Hunting* (Lamalera, East Nusa Tenggara).

There has been a variety of situations related to the general principles of fisheries resources management in the customary institutions-based fisheries management systems in Indonesia (Yusof, 2009), such as territorial boundary system, rules system, rights system, sanctions system, monitoring and evaluation system, and authority system. In the Andaman Sea Region, the *Panglima Laôt* Aceh is a well known local customary institution which adopts most of the



Map showing the 33 provinces of Indonesia

**Box 1. General Principles of the *Panglima Laôt* Aceh, Sumatera, Indonesia (Adrianto *et al.*, 2009)**

Boundary System	Rules System	Rights System	Sanctions System	Monitoring System	Authority System
Customary-based agreements, non-administrative boundaries	Based on local customary values since 400 years ago	Rights allocated by the <i>Panglima Laôt</i> include: access rights, resources allocation, use rights	Based on customary values settled in the “ <i>Majelis Peradilan Adat</i> ” or Customary Marine Court	Undertaken by the <i>Panglima Laôt</i>	Held by the <i>Panglima Laôt</i>

general principles of fisheries resources management (**Box 1**) based on customary institutions in Indonesia (*Panglima Laôt* Aceh Online).

*Panglima Laôt* (or Sea Commander in Acehnese dialect) is a tribal leader in the fishing communities in Nanggroe, Aceh Darussalam Province of Indonesia, also known as the organizer of *Hukôm Adat Laôt* (Customary Maritime Law). This unwritten law which was developed based on the Islamic Law consists of a system of marine laws and regulations with respect to the sea as the source of people’s livelihood. The Law also varies in detail depending on local conventions and types of fishing gear used. Keeping pace with the development in fisheries in the country, the customary law has developed very rapidly covering the general procedures such as leader selection process, organizational structure, roles and responsibilities of selected officers, among others. A custom law was initially established by the Sultan Iskandar Muda (1607-1637) of the Acehnese Sultanate Samudera Pasai in order to maintain the maritime affairs under the Sultanate’s mandate, *i.e.* regulating fishing seasons and rights as well as resolving local conflicts. Such custom is still in effect under the present Customary Maritime Law.

## The Lombok Workshop

The Workshop on Customary Institutions in Indonesia: Do They Have Role in Fisheries Resources and Coastal Management?, which was conducted by the International Collective in Support of Fish Workers (ICSF) in collaboration with *Departmen Kelautan dan Perikanan* of the Ministry of Marine Affairs and Fisheries of Indonesia in Lombok, West Nusa Tenggara, Indonesia from 2 to 5 August 2009, was attended by representatives from various local institutions in Indonesia, Thailand, Malaysia, and the Philippines. The workshop discussions focused on the success stories of true community involvement in fisheries management, specifically the roles of the local institutions in the countries represented during the Workshop (ICSF, 2009).

It has been noted that the Indonesian Government issued in October 2004, the most comprehensive fisheries laws to emerge from the developing world. Law No 31/2004 on Fisheries, with its main thrust on fisheries management, is a revised version of the previous Fisheries Law No 9/1985.

The goals of fisheries management include improving the living conditions of small-scale fishers and fish farmers, and promoting optimum utilization of the fishery resources. This Law also recognizes the role of customary laws and local wisdom as well as community participation in fisheries management. Under the Law, any individual except the small-scale fishers and fish farmers, who derives direct benefit from the fishery resources within the fisheries management zone of Indonesia, would be subject to payment of levies that would be used for fisheries development and activities to ensure sustainable utilization of the fishery resources and optimum concern for the environment.

Moreover, the evolution from centralization to decentralization era in Indonesia has been re-started during its Reform Era, with the enactment of Government Law (UU) of 22/1999 (Local Autonomy Law), which has been revised by the Autonomy Law No 32/2004. The Law emphasizes on the shift in the fisheries governance regime from top-down to bottom-up approach, and encourages more participatory involvement of the communities. This has been carried out through the revitalization of its community-based management system. Considering that the small-scale and artisanal fisheries sector is an important source of employment, income and food security particularly for the poor in Indonesia, the Indonesian Government has developed several management programs anchored on local community development.

Although mostly traditional practices, true community involvement in fishery management in Indonesia has been a success, such as the *Awig-awig*, *Panglima Laôt*, and *Sasi*, among others. Although the so-called community-based fisheries management introduced by such projects has been mostly on an *ad hoc* project basis, these have proved to be very helpful. Nevertheless, there is still a need to develop nested management systems, which should be incorporated into fishery management planning and law, whereby the roles of national, provincial, district and local stakeholders are clearly defined, and that the rights and responsibilities of all stakeholders and resource participants are clarified. In addition, extending the usefulness of co-management of the key resources beyond the fixed area approach should also be explored. More particularly, a means of defining all stakeholders and other management participants should be established. Previously under a centralized system,

Indonesia's Local Government Law No. 5/1974 asserted that the local governments had no jurisdiction over the marine and fisheries resources. The only fisheries law at that time, the Fisheries Law No. 9/1985 also did not clearly specify that fisheries should be managed by the local government or the local people.

However, during the Reform Era in Indonesia starting in 1998, the Indonesian Government for the first time significantly modified the authority management rules by issuing the Autonomy Law No. 22/1999 which was revised by Autonomy Law No 32/2004, giving wider opportunities to the local government to manage certain water areas under their jurisdiction. This provided a great challenge to the government especially in finding out the most appropriate models for proper fisheries co-management. Thus, fisheries co-management system has been considered an alternative for restoring the condition of the resources and resolving issues on fishing rights, where the involvement and partnership of all stakeholders in the fishery management process under this system remained the main key factors.

The Lombok Workshop came up with the Lombok Statement (**Box 2**) which boosts the significance of local customary institutions in fisheries resources and coastal management (ICSF, 2009). The Lombok Statement specifically sought for the strengthening of customary local institutions through constitutional recognition of laws relevant to marine and fisheries resources management. Moreover, the Statement also invited all concerned to give due recognition to the models of an economy based on the needs of the people built upon traditional knowledge that uphold the principles of social justice, equality and environmental sustainability.

## Role of Local Organizations in Resources Management and Conservation: Satun, Thailand

The field trip which was part of the activities during the Workshop on Fishing Vessel Record and Inventory conducted by SEAFDEC under the SEAFDEC-Sida Project on 27-29 July 2009 in Satun Province, Thailand (SEAFDEC-Sida, 2009), provided valuable information on the role of local institutions particularly in Satun Province, Thailand. Much of the information shared by the local groups could serve as basis for a good start of community organization programs elsewhere in the ASEAN countries.

### Mangrove Conservation Group in Kok Payom Village, La-Ngu District, Satun Province

Kok Payom is located in La-Ngu (District 5), Satun Province, with a population of 666 from 132 households. Majority of the population are Muslims (80%), and their major occupations are agriculture, fisheries, and workers



Map of Thailand showing Satun Province

in the business sectors. The people in the community have been engaged in mangrove and related resources rehabilitation for a long time. The village had established six main visions, namely: (1) to obtain full (and sustainable) supplies from the natural resources; (2) to uphold religion, art and culture; (3) to promote good moral in living; (4) to promote the economic sufficiency strategy; (5) to develop the source of knowledge-base; and (6) to maintain harmony in the community. When the mangrove concessions in La-Ngu District were cancelled in 1995 as a result of mangrove degradation, the community realized the extent of degradation of their mangrove forests and the impact of the loss of mangroves to their livelihood. Hence, the village people organized themselves and joined hands in mangrove forest restoration, which led to the establishment of the Mangrove Conservation Group. In 2003, at about the same time that the villages in La-Ngu District were separated and the Mangrove Conservation Group became operational, the villagers also formed fishing groups which aim to among others, engage in fish cage culture. When the area was affected by the Asian Tsunami in 2004, many organizations provided assistance to the villages and supported the rehabilitation activities, e.g. Had Yai University, Satun Provincial Fisheries Office and the Bureau of Agriculture. In the process of rehabilitation, the groups earlier formed by the villagers proved to be valuable in getting back the situation to normal, and many activities have since then been continuously implemented.

Since the inception of the Mangrove Conservation Group, many relevant activities have been implemented by the villagers leading to the recognition of the Group and the area has also become well known. Many visitors are now coming to the area to learn from the experiences of the Group. Currently, the Mangrove Conservation Group has also started to promote agro-tourism activities with support from the Thailand Research Fund (TRF). Under the TRF framework, the main task of the Group is to conduct "Local Research" which includes studies on the environment,

## Box 2: Lombok Statement

### The ICSF Workshop on “Customary institutions in Indonesia: Do they have a role in fisheries and coastal area management?” 2-5 August, Lombok, West Nusa Tenggara, Indonesia.

Indonesia is an archipelago with deep historical roots in its maritime affairs and fisheries. The sea is seen by traditional fishing communities not just as a means of livelihood but as a way of life that accommodates the whole social arrangement of the society, its ethics and morals.

**WE**, the representatives of customary law communities, traditional fisherfolk, coastal communities, fisherwomen, environmental and other civil society organizations, and academe, who attended the workshop on “Customary Institutions in Indonesia: Do They Have A Role In Fisheries and Coastal Area Management?” from 2 to 5 August 2009 in Lombok, West Nusa Tenggara, Indonesia, believe that customary law and traditional knowledge make significant contributions to the protection of marine and coastal ecosystems, and the sustainability of marine and fisheries resources, as well as environmental sustainability.

**WE** have demonstrated that customary law, in existence since the 16<sup>th</sup> century, and traditional knowledge can make a significant contribution towards providing a just and sustainable marine and fisheries resources management regime. We believe that strengthening the social and cultural capital of customary law communities, traditional fisherfolk, fisherwomen, and coastal communities can assist in managing marine and fisheries resources, and be instrumental in addressing the multi-dimensional crisis currently faced by fisheries, marine and coastal ecosystems.

**WE** believe that marine and coastal resources management regimes should uphold environmental sustainability and social justice and gender equality, especially of marginalized members of coastal communities, including poor widows, neglected children, the disabled and the permanently ill.

**WE** have discussed the root causes that adversely impact the livelihood of customary law communities, traditional fisherfolk and coastal communities. We have united and corroborate our voices to:

First, reversing the practice of privatization, monopolization and liberalization of marine and coastal resources, as, for example, in provisions contained in Law No. 27, 2007, on Coastal Area and Small Islands Management, especially the provisions regarding the issue of Management Rights over Coastal Waters and Seabed (Hak Pengusahaan Perairan Pesisir; HP3), as well as Regulation No. 5 of 2008 issued by the Minister of Marine Affairs and Fisheries, which has now been revised and re-issued as Regulation No. 12 of 2009, on Capture Fisheries, especially its provisions for Cluster Fisheries. It is better to grant priority to the Constitutional rights of adat law communities and to harmonize them with the universal principles guaranteed in the 1945 Constitution, the Universal Declaration of Human Rights, the International Covenant on Civil and Political Rights, the International Covenant on Economic, Social and Cultural Rights, and the United Nations Declaration on the Rights of Indigenous Peoples, as well as Law No. 39, 2009, on Human Rights.

Second, in urging prioritization of the interests of customary law institutions above the interests of investors and international conservation organizations, through the creation of a Customary Law Institution Communication Forum.

In this context, **WE** are seeking strengthening of customary law institutions, especially through constitutional recognition of the adat law institutions in marine and fisheries resources management, and through undertaking documentation and giving due publicity to adapt customary law institutions.

By strengthening of the customary institutions, **WE** imply that the State should:

1. Acknowledge and protect customary law and traditional knowledge that have been handed down from generation to generation, have become part of our nation's cultural identity and have helped in conserving and managing marine and fisheries resources. This can be achieved by recognizing and integrating adat law and traditional knowledge into the national legal system, giving due consideration to diversity of value systems, national unity and gender equality.
2. Grant greater preference to sustainability of coastal and fisheries resources, and to the growing domestic fish consumption needs.
3. Adopt an economic paradigm that prioritizes the principles of social justice and environmental sustainability over economic growth; that effectively prevents environmental violations in relation to marine affairs and fisheries, especially from illegal, unreported, and unregulated (IUU) fishing; extractive activities; and various policies at local, provincial, and national levels that threaten the marine ecosystem and the sustainability of living resources.

Last but not least, **WE** invite all members of society, the government, and the international community to lend political recognition to the model of an economy, based on the needs of the people, built upon adat law arrangements and traditional knowledge that uphold the principles of social justice, equality and environmental sustainability.

Lombok, 5 August 2009. This Statement is hereby endorsed by:

1. Panglima Laôt Aceh
2. Sasi Negeri Haruku, Central Maluku
3. Sea-farming of Thousand Islands (Kepulauan Seribu)
4. Ola Nua Lefa Hari, Lamalera, East Nusa Tenggara
5. Parompong Pulau Barrangcakdi, South Sulawesi
6. Mane'e Pulau Kakorotan, North Sulawesi
7. Taluak Impian Women Fisheries Group, Lake Maninjau, West Sumatra
8. Mina Bada Lestari, Lake Maninjau, West Sumatra
9. Bina Desa Jakarta
10. Fishermen of Negeri Ouw, Saparua, Central Maluku
11. SNI (Serikat Nelayan Indonesia - Indonesian Fishermen's Union)
12. East Lombok Marine and Fisheries Committee
13. KIARA (Koalisi Rakyat untuk Keadilan Perikanan & People's Coalition for Fisheries Justice)
14. KPPL (Komite Pengelolaan Perikanan Laut or Marine Fisheries Management Committee), East Lombok
15. LMNLU (Lembaga Musyawarah Nelayan Lombok Utara -- North Lombok Fishermen Forum Institution)
16. KNTI (Kesatuan Nelayan Tradisional Indonesia or Indonesian Traditional Fishermen Unity)
17. SNSU (Sarekat Nelayan Sumatera Utara or North Sumatra Fishermen's Union)
18. WALHI (Wahana Lingkungan Hidup Indonesia or Friends of the Earth Indonesia)
19. Centre for Legal Research of Coastal and Marine Resources Management, Faculty of Law, Pattimura University
20. Social Division, Lab. SEPK, Faculty of Fisheries and Marine Sciences, Brawijaya University, Malang
21. JALA (Jaringan Advokasi untuk Nelayan Sumatera Utara or Advocacy Network for North Sumatra Fishermen)

community organizations, identification of potential tourism sites, and identification of interesting aspects of local resource management.

Social aspects also form part in the perspective and the Group has been eyeing on the learning potential of the villagers and members of the village groups, as this has been seen as an important factor for the development of the practical aspects of agro-tourism that are in line with the community's way of life and culture. In order to maintain a balanced and sustainable development, studies on the carrying capacity of the area in terms of agro-tourism, are also included in the research activities.

### **Satun Small-scale Fishery Association**

The Satun Small-scale Fishery Association is composed of 75 village members, divided into three categories: 20 villagers for resource management and profession; 34 villagers for resource management and saving; and 11 villagers for resource management, saving and profession. The activities of the Association include the establishment of groups for resources management/enhancement, coordination with other relevant agencies in the Province and support the villagers to establish sub-groups; finding alternative livelihood for the village members; and development/establishment of community shops/business/fish landing piers under the framework and regulations of the Association. One of the most notable achievements of the Association is its success in the registration of all vessels of its members and such information collection activity has been well implemented.

Satun was one of the Provinces badly affected by the Asian Tsunami in December 2004. In spite of such calamity, the Association continues its important role in ensuring the availability of improved information collection as well as in promoting a total boat owners registration to be more prepared for untoward hazards and incidents. Moreover, the Association also provided assistance to Tsunami affected members by collecting information on the damages and coordinating with other agencies in generating assistance. The Association also provided assistance in terms of facilities such as houses, boats, engines, among others, to its members and supported the fishing communities/groups using their own revolving funds. Furthermore, the Association also supported the establishment of a radio communication center, and in general, it actively supported the recovery of the community as a whole. At present in Satun Province, out of the total 3,200 fishing boats, 1,600 fishing boats have been registered of which 695 boats are owned by the members of the Association. The reliability of collecting information on boats registration has improved while the system to strengthen collaboration/coordination with governmental agencies has been established. The set

of information collected by the Association for sustainable management and conservation includes: (1) owner's name; (2) boat name; (3) boat size and engine capacity; and (4) fishing gear and operation (*i.e.* type, fishing ground, fishing season, target catch). This information is being updated every year from November to December, and is being shared with the Provincial Office. Furthermore, it has also been reported that the Association also manages the Provincial Central Bank.

**Community-based Fishing Port in Khon-Klan Village**  
Khon-Klan Village is in Tung Wa (District 6), Satun Province with a population of 525 people in 127 households, whose major occupations are fisheries and agriculture. When the mangrove concessions were cancelled as a result of mangrove degradation, many villagers turned to fishing to support their families. However, the fishers realized that they were at the mercy of the monopoly of fish buyers. Although the buyers provide them with loans in terms of fishing gears, boats, and fuel but in return the fishers had to sell their catch to the buyers. More often than not, the buyers dictate the price of their catch which practically led the fishers to the buyers' debt trap. In order to address such concern, the establishment of "the community fishing port" was initiated by the local fishers in order to gain better prices for their catch. Moreover, when the La Ngu Bay local fishers network and the Khon-Klan Village joined the Association, its objectives have been enhanced to include rehabilitation of the marine resources in the Andaman Sea area.

Furthermore, when the Association established a Savings Group in Khon-Klan Village with the main objective of freeing the fishers from debts, the concept of community-based fish market was also created. With funding support from the Association, the fishers constructed a landing site in order to be able to provide the necessary services such as: purchasing the catch of the members (local fishers) and daily transporting the catch to the market; selling petrol fuel for the fishers' fishing operations at reasonable price; and procuring fishing gears to be sold to its members. In mid 2005, the Association adopted a long term work plan to improve the livelihood of the fishers by: setting up a central fish market for local fishers; assisting the fishers in providing fishing gears including establishment of local welfare shop; and in the longer term, helping the fishers pay their debts and generating support for the central fish market concept.

The idea of a central fish market was developed by looking at the benefits of combining four separate community fish markets into a central network, such as the markets of the Khon-Klan community fishing port; 2,000 other small fishing ports; the Ban Klong Du-kang fishing port; and the Savings Group fishing port. The profits from the central community fishing port are divided on a percentage

basis and allocated to the: central fishing port's shop for administrative expenses, charity fund, fishing gears and circulating incomes; central fishing port for the management of the port; group members; individual members to stimulate outsiders to cooperate with the central market; administration committee bonus; welfare of the community fish markets; and activities related to coastal resources restoration such as releasing fingerlings, mangrove reforestation, and the like.

## Importance of Traditional Knowledge in Fishery Resources Management

The *Panglima Laôt* Aceh and the local organizations in Satun Province are examples of local systems that provide good planning and management of fisheries and habitats. Moreover, these organizations have also provided good partnerships in co-management in the respective levels in their areas using local knowledge. This has made them good advocates in fisheries and habitats management. The aforementioned examples are also important as their establishments are quite different. While the *Panglima Laôt* Aceh's origin goes back several hundred years ago, the community organizations in Satun Province are more recent. However, it should be noted that the examples are based on organizational abilities within Muslim communities.

The abovementioned organizations have always depended on traditional knowledge in carrying out their functions as champions in fisheries management in their respective areas of responsibility. Swiderska (2004) as cited by Mathew (2009), defined traditional or local knowledge as the knowledge, innovations and practices of indigenous and local communities derived from customary uses of biological resources and associated cultural practices and traditions. The traditional knowledge of fishers, *inter alia*, encompasses knowledge about biological, ecological, behavioral, nutritional and medicinal aspects of the living aquatic resources, oceanographic aspects of the habitat, morphological aspects of the coasts, climate issues, natural calamities, protection and mitigation measures, equity issues including conflict resolution mechanisms.

The relevance of traditional knowledge in fisheries management has been widely recognized in many international and regional legal instruments. For example, Agenda 21 of the UNCED on Recognizing and Strengthening the Role of Indigenous People and their Communities (UNCED, 1992), specified that: *Indigenous people and their communities have a historical relationship with their lands and are generally descendants of the original inhabitants of such lands. In the context of this chapter the term "lands" is understood to include the environment of the areas which the people concerned traditionally occupy. Indigenous people and their communities represent a significant percentage*

*of the global population. They have developed over many generations a holistic traditional scientific knowledge of their lands, natural resources and environment. Indigenous people and their communities shall enjoy the full measure of human rights and fundamental freedoms without hindrance or discrimination. Their ability to participate fully in sustainable development practices on their lands has tended to be limited as a result of factors of an economic, social and historical nature. In view of the interrelationship between the natural environment and its sustainable development and the cultural, social, economic and physical well-being of indigenous people, national and international efforts to implement environmentally sound and sustainable development should recognize, accommodate, promote and strengthen the role of indigenous people and their communities.*

Moreover, Agenda 21 also specifically indicated that in full partnership with indigenous people and their communities, Governments and, where appropriate, intergovernmental organizations should aim at fulfilling the objectives of establishing a process to empower indigenous people and their communities through measures that include, among others: recognition of their values, traditional knowledge and resource management practices with a view to promoting environmentally sound and sustainable development; enhancement of capacity building for indigenous communities, based on the adaptation and exchange of traditional experience, knowledge and resource-management practices, to ensure their sustainable development. Such declaration has been summarized in Principle 22 of the Rio Declaration on Environment and Development (UNCED, 1992), which specified that: *Indigenous people and their communities and other local communities have a vital role in environmental management and development because of their knowledge and traditional practices. States should recognize and duly support their identity, culture and interests and enable their effective participation in the achievement of sustainable development.*

The importance of traditional knowledge has been further expounded in Chapter 17 of Agenda 21, where the States after committing themselves to the conservation and sustainable use of marine living resources under their national jurisdictions, recognized the need to: take into account traditional knowledge and interests of local communities, small-scale artisanal fisheries and indigenous people in development and management programs; develop systems for the acquisition and recording of traditional knowledge concerning marine living resources and environment and promote the incorporation of such knowledge into management systems; provide support to local fishing communities, in particular those that rely on fishing for subsistence, indigenous people and women,

including, as appropriate, the technical and financial assistance to organize, maintain, exchange and improve traditional knowledge of marine living resources and fishing techniques, and upgrade knowledge on marine ecosystems.

In a related development, the Convention on Biological Diversity (CBD) specifically calls upon countries to respect, preserve, maintain and to promote wider application of the knowledge, innovations and practices of local and indigenous communities, relevant for conservation and sustainable use of resources. Specifically, Article 10(c) of the CBD requires countries that are party to the Convention to “*protect and encourage the customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements*” (Convention on Biological Diversity On-line).

Furthermore, during the second meeting of the Conference of the Parties (COP-2) to the Convention on Biological Diversity held in Jakarta, Indonesia in November 1995, the adopted decision II/10 on the conservation and sustainable use of marine and coastal biological diversity, supported the selected recommendations of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) to the Convention at its first meeting, and subject to additional conclusions by COP (Convention on Biological Diversity On-line). It was on the same occasion that the Ministerial Statement on the implementation of the Convention on Biological Diversity was recognized as a new global consensus on the importance of marine and coastal biological diversity, which was known as the “Jakarta Mandate on Marine and Coastal Biological Diversity” or the “Jakarta Mandate”. As specified in the Draft Programme for Further Work on Marine and Coastal Biological Diversity adopted during the COP-2 (UNEP/CBD/COP/2/19), which was made part of the “Jakarta Mandate”, it was emphasized in 3(d) that: *the scientific, technical, and technological knowledge of local and indigenous communities should be incorporated, as appropriate, as well as community and user-based approaches, in the conservation and sustainable use of marine and coastal biodiversity.*

Moreover, during the COP-5 CBD (Convention on Biological Diversity On-line) held in Nairobi, Kenya in May 2000, the decisions also included the importance of decentralization and the importance of local knowledge in management. Section B on Principles of the Ecosystem Approach contains 12 principles which are complementary and interlinked. Nevertheless, **Principle 1** specified that the objectives of management of land, water and living resources are a matter of societal choices. Different sectors of society view ecosystems in terms of their own economic, cultural and societal needs. Indigenous peoples and other local

communities living on the land are important stakeholders and their rights and interests should be recognized. Both cultural and biological diversity are central components of the ecosystem approach, and management should take this into account. Societal choices should be expressed as clearly as possible. Ecosystems should be managed for their intrinsic values and for the tangible or intangible benefits for humans, in a fair and equitable way.

**Principle 2** indicated that “*Management should be decentralized to the lowest appropriate level*”. This is taking into account the fact that “*decentralized systems may lead to greater efficiency, effectiveness and equity*”. Thus, management should involve all stakeholders and balance local interests with the wider public interest. The closer management is to the ecosystem, the greater the responsibility, ownership, accountability, participation, and use of local knowledge. This is summarized in **Principle 11**, viz: *the ecosystem approach should consider all forms of relevant information, including scientific and indigenous and local knowledge, innovations and practices.*

The Code of Conduct for Responsible Fisheries (FAO, 1995) also recognized the significance of traditional knowledge for conservation and management for sustainable fisheries development. Specifically, Article 6(4) indicates that conservation and management should take into account scientific evidence, traditional knowledge of the resources and their habitat as well as relevant environmental, economic and social factors. In addition, Article 12(12) specified the need for States to investigate and document traditional fisheries knowledge in order to assess the application to sustainable fisheries conservation, management and development. The significance of local organizations in fisheries management has also been recognized in the ASEAN region. The ASEAN-SEAFDEC Resolution and Plan of Action on Sustainable Fisheries for Food Security for the ASEAN Region (SEAFDEC, 2001) acknowledged the need for enhanced human resource capabilities at all levels and encourage greater involvement by stakeholders to facilitate consensus and compliance in achieving sustainable fisheries (Resolution 3). In terms of fisheries management, the adopted Plan of Action (POA) indicated the need to: *establish and implement comprehensive policies for innovative fisheries management, such as the decentralization of selected fisheries management functions to the local level ... (POA 1); and ensure local consensus building on innovative management measures through consultative processes ... (POA 2).*

On the other hand, the Workshop on Asserting Rights, Defining Responsibilities: Perspectives from Small-scale Fishing Communities on Coastal and Fisheries Management in Asia conducted in Siem Reap, Cambodia in May 2007



adopted the 2007 Siem Reap Statement (ICSF, 2007) which specified that the *protection of the inland, marine and coastal environments and the sustainable management of fisheries resources, are paramount concerns for small-scale and artisanal fishworkers and fishing communities in Asia*. The Siem Reap Statement also added that *many communities in the region have been implementing measures to restore, rebuild and protect coastal and wetland ecosystems, drawing on traditional ecological knowledge systems and deep cultural and religious values, reiterating the right of traditional and community-based organizations to conserve and co-manage coastal and inland fishery resources, and to benefit from them*.

Recently, the 2009 Lombok Statement (ICSF, 2009) specified that traditional knowledge upholds the principles of social justice, equality and environmental sustainability; and that traditional knowledge can make a significant contribution towards providing a just and sustainable marine and fisheries resources management regime. The Lombok Statement also indicated the need to acknowledge and protect traditional knowledge that have made contribution to resolving conflicts and in conserving and managing marine and fisheries resources as part of the cultural identity of the nation.

Finally, the 2009 United Nations Assessment of Assessments (AoA) adopted during the 25<sup>th</sup> Session of the UN General Assembly in June 2009 (UNESCO, 2009) has outlined some guidelines on the use of traditional knowledge in management. Among others, the guidelines indicated that: (1) traditional knowledge (TK) could be used to supplement scientist's data and information; (2) TK can be used to increase the relevance of an assessment by incorporating

knowledge of, for example, key local issues, possible response options and their likely success; (3) as TK could be the only source of information in some cases, especially of historical knowledge, it could be served to correct baseline information established by more recently collected data; (4) special arrangements may be necessary in an assessment process to ensure participation and contributions from holders of traditional knowledge, including individuals from small, often isolated coastal communities; (5) when TK is to be used in an assessment, it should be assured that there are clear rules of engagement so that all participants understand how discrepancies between data and information from TK sources and from scientific sources will be handled; (6) it should also be ensured that there is a clear understanding among all parties about propriety rights to TK remaining with the providers.

## Conclusion

Being widely recognized as a tool in fisheries management, traditional knowledge can therefore broaden the frontiers of scientific knowledge essential for integration of conservation and management into habitat protection and for developing effective mitigation measures. Nevertheless, it should be considered that the full participation of all stakeholders in developing realistic, successful, co-management programs is one of the major challenges and opportunities in decentralization. Techniques should therefore be developed and improved for locally-based management systems including traditional ones, and the local participation in larger management systems without creating unnecessary dependence on various levels of government and external funding, should be enhanced. The long-term goal is to have community-based components truly local, and supported





and funded by the fishery participants including dependent businesses. Adopting these recommendations would enhance the role of local communities in the management of the local fishery and coastal resources.

In any case, the use of traditional knowledge can help build up trust thereby improving the legitimacy of conservation and management interventions, and in some cases, traditional knowledge could help in enhancing participatory MCS regimes among the local communities. In summary, traditional knowledge could help in the process of devolution and decentralization, essential for the success of fisheries management.

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