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MARINE AND COASTAL BIODIVERSITY: REVIEW, FURTHER ELABORATION A REFINEMENT OF THE PROGRAMME OF WORK

Community involvement in marine and coastal protected areas: case-studies

Note by the Executive Secretary

I. INTRODUCTION

1. Although not a new idea, the use of marine and coastal protected areas for the managem marine and coastal living resources has gained increased support recently due to the evident fail other management methods. The Conference of the Parties to the Convention on Biological Di recognized the importance of marine and coastal protected areas for the conservation and sustainal of biological diversity through the inclusion of marine and coastal protected areas as one of the prog elements in the programme of work on marine and coastal biological diversity (decision IV/5, annex)

2. The Convention's Ad Hoc Technical Expert Group on Marine And Coastal Protected adopted a definition for an marine and coastal protected areas as "any defined area within or adja the marine environment, together with its overlying waters and associated flora, fauna, and historic cultural features, which has been reserved by legislation or other effective means, including custom the effect that its marine and/or coastal biodiversity enjoys a higher level of protection th surroundings" (UNEP/CBD/SBSTTA/8/9/Add.1). This definition was adapted from the one develop the World Conservation Union (IUCN) in 1994 for a marine protected area, which was defined as ' area of intertidal or subtidal terrain, together with its overlying waters and associated flora, faun historical and cultural features, which has been reserved by legislation or other effective means to part or all of the enclosed environment". Though the definition of a marine and coastal protected a more comprehensive than that of a marine protected area, the latter is more used in current lite Both terms are used in this document.

* UNEP/CBD/SBSTTA/8/1.

3. The interest in various community involvement approaches relating to the establishmer management of marine and coastal protected areas has increased in the last years. Com involvement can range from independent management by the community to some form of responsibility with government institutions. The World Conservation Strategy (IUCN, UNEP and 1980) stimulated this trend, promoting the link between conservation and development, which repre a major change from the inflexible preservationist attitude of many early conservationists (Hanks, 19

4. Originally, many government agencies set up protected areas with the intention of keeping out. This goal is more feasible on land than at sea. However, as population pressure and demand fo and resources have increased, such an approach has become unsuitable and increasingly difficu expensive to implement (Hough, 1988). For these reasons, many countries have focused effo involving local people at some, if not all, levels of protected-area establishment and management (1993; Kemf, 1993).

5. The need for marine and coastal protected areas has been recognized relatively recently, a potential conflict between local communities and the establishment of such areas became apparer quickly. The characteristics of the marine and coastal environment mean that their resources can be fenced off; furthermore, in many parts of the world marine and coastal resources are considere available to everyone. Many marine and coastal protected areas have therefore been set up as mu use areas, with designated zones for different activities. In some areas the concept of community management has received early acceptance (White *et al.*, 1994).

6. Community involvement in the management of marine and coastal protected areas can re the idea of marine resources as "common property". This term is used for resources that are colle owned by a community, in contrast to "open access" resources that are open to exploitation b individual or group. Coastal communities in many countries had, and in some cases still have, cust laws or unwritten regulations to prevent individuals maximizing their private gains at the expe community interests. Such regulations can lead to sustainable use of the community's resources (Br and Cernea, 1989).

7. The traditional direct dependence of communities living in coastal areas on coastal and m environments has now disappeared in many areas and with it the community's sensitivity consequences of resource damage and depletion. In subsistence cultures, resource deterioration ma be felt, but the community often lacks the means to deal with it, in the face of outside comm pressures and increasing population (Kenchington, 1988). Moreover, population growth, technol change, commercialization and loss of community control have led to widespread destruction of trad tenure systems. In Oceania, for example, pressure from colonial governments to abandon tra conservation laws so that trade surpluses would be generated, and the establishment of a western s of public ownership of coastal and marine areas, often precipitated the collapse of these systems (H 1989). The appearance of open-access systems quickly followed, leading to overexploitation and th cited "tragedy of the commons", or perhaps more appropriately "tragedy of open access" (Bromle Cernea, 1989).

8. Traditional management practices often involved regulating the use of particular sites, and are now being made to incorporate these practices into modern marine-and-coastal-area manag Even where such practices have been lost for many years, or are not known to have existed, comm involvement can result in the development of a similar sense of responsibility and concern for a mari coastal area (Wells and White, 1995).

9. By compiling number of case-studies from countries with different socio-economic, politi geographic backgrounds, the present document aims to provide examples of how communities mi involved in processes relating to marine and coastal protected areas, leading to the successful use management tool, and the enhancement of benefits to nature and humankind.

10. The present document presents one or several case-studies of community involvement in co at each of the three identified levels of development, and for each geographic region of the wor Americas, Africa, Europe, Asia and Oceania). The levels of development are adapted from Cici-Sa Knecht (1998), as follows:

(a) *Developed countries*: with a per capita gross domestic product (GDP) of mor $15,000;

(b) *Middle developing countries*: with a per capita GDP of between $5,000 and $1 and

(c) *Developing countries*: with a per capita GDP of less than $4,999.

11. The case-studies were classified into the following categories of community involvement in and coastal protected areas (adapted from Wells and White, 1995):

(a) *Community involvement in statutory marine and coastal protected areas* community involvement is based on consultation, and its role is more advisory than decisive);

(b) *Co-management* (when the responsibility is shared between community and goverr

(c) *Community-based management* (when community is fully responsible for manage

(d) *Community involvement through traditional customs*, which, although it co included in either of categories (b) and (c) above, is a special case that deserves to be disc separately.

12. Finally, the document discusses the most interesting and important findings learned from th studies.

II. CASE STUDIES

A. Community involvement in statutory marine and coastal protected areas

1. Bramble Reef, Great Barrier Reef Marine Park, Australia

13. Bramble Reef is a large inner shelf in the Central Great Barrier Reef. It was closed to b fishing in 1992 in response to community concerns that the reef was being overfished. Whe replenishment of reef fish stocks on Bramble Reef was first mentioned, the Great Barrier Reef M Park Authority (GBRMPA) considered whether closure was the most appropriate action. The noti closure was publicized in the local media in 1990. The Park Authority advertised in 199 representations on the decision to designate Bramble Reef as a replenishment area. In short, the c response was that although opinions on the proposal were evenly divided, virtually all respondents st supported some form of closure. To involve the community in the implementation and management closure, the Bramble Reef Replenishment Area Consultative Committee was established, w representation of all users (game fishing, commercial fishing, environmental and scientific, indu

aboriginal, the Park Authority, tourism, enforcement and surveillance). The role of the Committee advise the Park Authority in respect of matters relating to the Bramble Reef Replenishment Area Committee met twice a year in the local coastal town adjacent to the reef. Each year, the Com discussed the findings of the underwater surveys and discussed the management arrangements f reef. As the closure was temporary, the Bramble Reef was reopened for fishing on 1995 (Aylin Ayling, 1997).

2. Dry Tortugas Ecological Reserve, Florida Keys, United States of America

14. The original proposal of Florida Keys National Marine Sanctuary included a reserve Tortugas but the boundary was strongly contested. Consequently the reserve was dropped fro management plan, although marked out for re consideration in the future. Recently, the National C and Atmospheric Administration (manager of the United States sanctuaries) developed a comprehensive approach towards setting up a Tortugas reserve. They carried out detailed sci research and made a thorough socio-economic study of the area. In addition, the Sanctuary team lau a project designed to raise public interest and steer people towards creating a workable reserve result, participatory group was established containing commercial and recreational fishers, conservationists and other interested stakeholders. They were responsible for presenting the Sanct Advisory Council with revised recommendations for the reserve. Building consensus around a proposal has not been easy, but eventually one began to gain the support of both conservationis fishers. There is a long way to go before Tortugas reserve is formally established. However, stakeholders committed to backing the proposal it should just be a matter of passing through the legi process (www.nos.noaa.gov/nmsp/fknms).

3. Helford River, United Kingdom

15. The Helford River is a flood river valley. Fishing, shellfish collection, transport, and fa settlements are the main human impacts on the valley. In the late 1970s, local scientists expressed c over declines in the rich local flora and fauna. As a result of efforts by individuals and organiz associated with this place, the Helford Voluntary Marine Conservation Area (HVMCA) was foun 1985. In establishing it, full transparency between all users and interested parties was seen to be ess The HVMCA advisory group includes local authorities, statuary bodies, societies and businesses, biologists, scientific advisers, and other interested individuals. This ensures that information flows q between decision makers responsible for the river valley and the local community affected by decisions. The advisory group meets annually to receive and discuss the reports from a working which initiates and oversees all activities within the HVMCA. The HVMCA has played an importa in fostering pride in and a sense of ownership of the river in the local community, and translating th action. Realization that voluntary action will safeguard their river by achieving common conservation for all users has led to committed support. Public awareness exercises and videos, shore walks, le educational boat trips, publications, media coverage, information boards, fundraising, and scientific s have all resulted from this commitment (WWF, 1998).

4. De Hoop Marine Protected Area, South Africa

16. De Hoop lies in the warm temperate zone of the Western Cape Province and is the southerly marine reserve on the African Continental Shelf. For the past 14 years, scientists have s how fish stocks in the surf zone of the reserve respond to protection and whether it improves fishing adjacent areas. Anglers from the surrounding communities but also from farther places have partic on field surveys for research and monitoring, where fishers have appreciated how well marine re can function and how effective protection can be. This has had enormous impact, causing them to

their attitudes and become supportive of the marine protected area (Bennett and Attwood, 1991; At and Bennett, 1994).

5. Saba Marine Park, Netherlands Antilles

17. Because of its small size and population, the Saba Marine Park is almost 100 per cent eff This protected area is operated by a non-governmental organization and has the distinction of bei world´s first self-funding marine park. Plans for the park began in 1984 in response to the government´s request for help in managing its marine resources. It took just under three years to dev fully zoned management plan and raise fund to establish the park. During that time there was i consultation with the island´s fishers to alleviate their concerns about why the park was being set u how it would affect them. By the time the park was opened it had gained almost universal support a popularity has never faltered. Very few violations have ever been committed by locals over the entire history (van´t Hof, 1991; Polunin and Roberts, 1993; www.sabapark.com).

6. Mafia Island Marine Park, United Republic of Tanzania.

18. The Mafia Island Marine Park is located in the western Indian Ocean, south of the isla Zanzibar, is the largest marine protected area in the region (Board of Trustees, 1999; Ngoile, Me and Makoloweka, 1998). Established in 1995, it is the first marine protected area in the United Repu Tanzania. The primary goal of the area was to incorporate protection, conservation, sustainable re use, and economic development into the area, with emphasis on the participation of local communi the process (Agardy, 1997). In 1988, the Tanzanian Government, the local residents of Mafia a adjacent islands, and key conservation organizations met to discuss the creation of a multiple-use r protected area. A series of workshops were held between 1988 and 1991 to enable islanders to objectives and express their expectations and opinions. Technical experts consulted with islands res and together they came up with a multiple use zoning plan (Agardy, 1997). Zonation was undertake the aim to promote the sustainability of the MPA and to minimize conflicts between villagers and park authorities (Ngoile, Melamari and Makoloweka, 1998).

B. Co-management

1. Gwaii Haanas Marine Conservation Area (proposed), British Columbia, Canada

19. Gwaii Haanas, an archipelago of 138 islands in Canada´s Pacific-coast province of B Columbia, has been populated by indigenous peoples for more than 10,000 years, and is now home to 2,000 members of the Haida people. The terrestrial Gwaii Haanas National Park/Haida Heritag composed of the islands but stopping at the high tide line of each, involves a collaborative manag regime to ensure equal input from the Haida and the federal government in managing the region's based resources. A four-member Archipelago Management Board, consisting of two representative from the Council of the Haida Nation and the Canadian Government (represented by the Parks C agency), oversees all planning and management of the archipelago. So far, the Board has re consensus on every regional matter it has faced. Now, Parks Canada seeks to designate a r protected area, the Gwaii Haanas Marine Conservation Area, in the waters surrounding the islands, establish a similar collaborative management system to manage it (www.parkscan.harbour.com/gwa

2. Breiðafjörður Conservation Area, Iceland

20. The Breiðafjörður Conservation Area, a multiple-use area, preserves traditional use, and su some extraction activities and fisheries. Local communities and industry have been involved in the p from the outset and prior to designation the Minister for the Environment visited local governm

introduce the idea of area protection, to get input and support and to initiate ongoing dialogue. communities continue to have an active role in the ongoing management and environmental asse process. A committee oversees the project and includes representatives from local communiti National Museum (responsible for cultural heritage), and the Icelandic Institute of Natural H (responsible for general scientific research). The committee advises the Minister for the Environm all environmental matters in the conservation area, and works with local authorities and the I Conservation Agency (responsible for protected areas). The committee is responsible for prepari management plan and for promoting research, education and interpretation in cooperation with relevant authorities and is to be consulted on any development plans affecting the area (Petersen 1998).

3. Bunaken, Indonesia

21. The Bunaken National Marine Park, near Manado, Sulawesi, Indonesia, established in 19 good example of government collaboration with local park residents. The park covers 89,000 hect land and marine waters, has five island and includes major areas of coral reef, sea-grass and man ecosystems. Island residents have been traditionally dependent on fishing and are now starting to from tourism. The management plan was developed through collaboration between local people an government officials. The size of the area and the complexity of its management, combined with from outside sources such as non-local fishermen using damaging methods, tourism and pressure coastal development in Manado, mean that some form of collaboration with government is essentia planned community-based management is to be feasible. A zoning plan, developed with the vil formalizes traditional fishing areas for reef fish and invertebrates and includes strict protection where no exploitation is allowed. Scuba-diving and tourist visitation areas are also zoned. The communities organize committees for management and protection of the sanctuary areas wi understanding that they will benefit from improved reef-fish yields. The management scheme inclu participation of several non-governmental organizations from Manado working with the nationa Office on matters of community-level education (Bromley and Cernea, 1989).

4. Trao Reef Marine Reserve, Viet Nam

22. Since its official launch in March 2002, the Trao Reef Marine Reserve has been in full op with direct protection and monitoring provided by the Core Group, which includes nine members community. The Group receives strong support from the Project Management Board, Distric Commune, as well as from other relevant agencies such as the Fisheries Resources Protection Stati Border Army Station 362. The Core Group has worked in parties of three so they can rotate thei for the reserve and handle their daily tasks. In addition to this work, it has also been carrying ou advocacy work. To assist the Group, in June 2002, through the collaboration of International N Alliance Viet Nam and the local Agriculture Bank, a loan was provide to the nine members of th Group to help them develop alternative livelihoods at the reserve. Thus they can get more invol project activities while improving their incomes. The members of the Group will be replaced aft years of operation, giving other members of the community a chance to perform protection duti access the credit fund to help improve their standard of living. The enforcement of the regulatio been very effective and the results of the protection are expected in the near future (IMA, 2002).

5. Galápagos Marine Reserve, Ecuador

23. The Galápagos National Park was created in 1959 and later designated as one of the first World Heritage Sites by the United Nation Educational, Scientific and Cultural Organization (UNE A marine reserve was declared in 1986, but this had no management plan and received no protecti

1992 a management plan was developed, but locals were not involved and it was never implement 1996 a participatory management approach was initiated which gave local stakeholders the opportu help develop a management agenda for the Galápagos Marine Reserve. At the same time a la devised to provide a legal basis for theses agreements. In January 1998, through the Galápagos S Law, the Ecuadorian parliament approved a series of important protective measures for the island new law placed the marine reserve under the jurisdiction of the National Park Service. Industrial fish mainland and foreign fleets was banned, and only locals could fish within the newly designated rese new participatory management body will decide how much of the area should be included in each t zone and where they should be located (WWF, 1998; Roberts, 1999).

6. Soufriere Marine Management Area, Saint Lucia

24. The need for co-management is well illustrated by a project underway in the Soufriere reg the west coast of Saint Lucia. Although the marine environment was designated a marine reserve a 1986, and plans were made in 1987 to develop a national park to cover both the terrestrial and m components, not active management was implemented. As conflict between user groups and stakeh increased (a result of the growing importance of the area as a scuba-diving destination and incr demand for fishery resources) it became clear that effective management would be feasible only those with interests in the area were involved. A process of negotiation and participatory planni therefore initiated, which culminated in the formation of the Soufriere Marine Management (SMMA). At the same time, a coral reef monitoring programme has been set up, which also in many of those who make their living from the marine environment and in particular the diving operat practice, SMMA has demonstrated that continuous education and positive reinforcement have prov more effective than punishment for maintaining no-take zones. One of the most important fact maintaining support for the no-take zones has been kept fishers and others stakeholders informed how the protected area is performing. SMMA has reduced conflict between tourists and fishers. A the long negotiations between the different users, a mutual respect for each other's territory has nov established (Smith, 1994; Soufriere Regional Development Foundation, 1994; George, www.smma.org.lc).

7. Cayos Miskitos and Franja Costera Marine Biological Reserve, Nicaragua

25. The Cayos Miskitos and Franja Costera Marine Biological Reserve is located on the no coast of Nicaragua, in a territory inhabited largely by the Miskito people. The reserve was for designated in 1991 as part of a cooperative agreement between 38 Miskito communities an Nicaraguan Ministry of the Environment. An inter-institutional commission, composed of governm and Miskito representative, was set up to plan and manage the reserve. The reserve's first manag plan, prepared in 1995, identified several key management issues. Among these were the de demarcation of communal territories, and regulation of the extraction of marine resources, partic lobster. To aid in addressing these issues, new local management committees have been establis focus on planning and implementing key actions at selected pilot sites within the reserve. In the cooperation between the central government and the Miskito people has been difficult but the management committees appear to offer promise for improving collaborative manag (www.wcpa.iucn.org/pubs/publications.html).

8. Banc d´Arguin National Park, Mauritania.

26. The Banc d´Arguin, a site of unparalleled importance for marine biodiversity and ecol processes, is the largest marine park in Africa. It also constitutes Mauritania's most imp reproduction and nursery area for fish and crustaceans. As catches decline along the African

fishers are increasingly attracted to this legally protected area. An early management strategy or was to maintain the small communities of resident fishers, the Imraguen, and to give them exclusive rights to the area. By protecting their own resources, the Imraguen have become the defenders park, providing a level of surveillance from their own sailboats that the park administration would be to carry out alone. In order to address the ever-increasing threats to marine resources, the Banc d´A National Park, with the technical and financial support of WWF, adopted a ten-year master negotiated with all major stakeholders. To implement the plan, new park regulations were needed, a draft legislation was defined directly with the representatives of the Imraguen communities during a day workshop. The park is now waiting for the legislation to be passed by the Government (WWF, 1

C. Community-based management

1. Edmonds Underwater Park, Washington, United States of America

27. The Edmonds Underwater Park includes a small section of the shore in Puget Sound near on the west coast of theUnited States. The park was established in 1970 to provide a safe, high q site for recreational scuba-diving. This park is remarkable in many ways. It is one of the longest-st no-take marine reserves in the world. The site was first designated under a City of Edmonds loc that prohibited removal of any marine life from the park. Notably, that law was never enforced City. Instead, protection has been maintained voluntarily, and has become self-enforcing over tir group of volunteer park stewards has provided the first line of protection, and through their efforts, have developed a protection ethic for the site. Compliance with no-fishing regulations is mair through peer pressure, even as fish stocks have built up over time. Locals simply feel it would b social to catch fish in the reserve. Recognizing the park success, protection has recently been rein by passage of a state law to back up the City's no-fishing regulations (Palsson and Pacunski, Murray, 1998).

2. Sian Ka´an Biosphere Reserve, Mexico

28. One of the best examples of a coastal and marine biosphere reserve is the Sian Ka´an Bio Reserve, which has Council of Representatives to represent the needs of the local people living reserve. Most interestingly, community-based management of marine resources existed in thi before the Reserve was established. Under Mexican federal law, lobster, conch and shrimp may o fished by cooperatives that are allotted particular areas. Many such ventures have failed, but th lobster cooperatives in the Sian Ka´an area have been successful. Each fisherman has his own te where he establishes and maintains lobster shelters, and also controls access to other marine reso Territories can be bought and sold among cooperative members, and are sufficiently well recogniz they can be inherited. The cooperatives have agreed on certain limitations, such as closed seasor permissible equipment, and each fisherman is responsible for protecting his own territory. Penalt poaching include banning from the cooperative and confiscation of equipment by the cooperativ combination of incentives such as rights and peer support, and disincentives such as confiscation ar pressure, seems to be successful (Carillo-Barrios-Gómez and Herrman-Martínez, 1989; Miller, 1986

3. San Felipe Marine Reserve, Mexico

29. The San Felipe Marine Reserve is unique and particularly suited for a case-study becau local community created it without a mandate from higher levels of government. It is currently ma through the fishing cooperative with limited financial support from the municipality as well as some s from the United Nations Small Grant Development Programme. The San Felipe Marine Rese officially recognized by neither the state nor the federal governments despite community managem

the resources in the area since its establishment in 1988, and the official declaration by the mu government in 1997 also gave it the name "Actam Chuleb". After its launch, the cooperative held t meeting with the municipality and other community leaders to discuss the reserve's establishme subsequent management in 1995. Although the Actam Chuleb Marine Reserve is included in the state reserve, Dzilam Bravo, the fishers do not feel that the existing management and the enforcem the area is effective. Thus, they arrange for their own enforcement of the reserve using self-p system during the day and patrolling by a group of hired "vigilantes" at night. Fishers tend to keep reserve due to their own ethical standards and to comply with the cooperative rules. The reser received support from the local officials and the community at large. Town meetings are held regul discuss issues related to the marine reserve, such as rules and penalties. Because of the outst performance of the reserve managed by the community, the state government is looking for an appr channel to give the reserve legal recognition (Chuenpagdee, Fraga and Euán-Avila, 2002).

4. Negros, Balicasag, Pamilacan and Apo islands, Philippines

30. Community-based marine and coastal protected areas have been particularly successful Philippines. There were first developed by Castañeda and Miclat (1981) in the coastal municipali Sagay and Guidulman in Negros, where advice and educational programmes were made availa villagers, who then drew up local regulations and enforcement procedures for activities in Subsequently, the Marine Conservation and Development Program of Silliman University assisted establishment of community-based reserves around the small islands of Balicasag, Pamilacan an (Sabina and White, 1986; White, 1989; White and Sabina, 1987). Each of these was set up l community, following an educational programme by project workers who lived on the island and intro the concept of the reserves. Each protected area is managed by a marine management comm selected from the local community, and is formalized and given legal backing at the municipal level t a municipal order. The boundary generally encircles the island, at about 500 m from shore. Dan fishing methods, such as dynamite, poisons, spear-fishing and *muro-ami* (hitting the reef with roc sticks to scare fish into a net, which causes considerable damage to any coral and is extremely effic catching most of the fish in the area), are prohibited within the reserve. Buoys and signs demarca of the reserve as a fish sanctuary, within which all fishing and collecting of marine organisms is prol This system is now being used elsewhere in the Philippines, in places such as Lingayen Gulf (McM Ferrer and Campos, 1988), the Central Visayas (Alix, 1989) and San Salvador Island in Zam (Christie, White and Buhat, 1994).

5. Samoa

31. Despite concerns over declining fish stocks, government actions and national laws to protec were unsuccessful in Samoa. This was the result of many factors, including poor enforcement re and particularly the lack of community involvement. The community-based fisheries extension pro Samoa began in 1995. After staff training, a culturally acceptable extension process was developed recognized the village *fono* (council) as the prime instigator of change, while still allowing opportunities for the wider community to participate. Following an indication of interest, a villag meeting was arranged to provide the community with information to allow either acceptance or ref the extension program. If the *fono* accepted, it was then asked to arrange for meetings of several groups, including women and untitled men (ones who are not part of the *fono*). Over a series of me each group held separate meetings to discuss their marine environment and fish stocks, decide c problems, determine causes, propose solutions, and plan remedial actions. Problem/solution tree recorded on a portable whiteboard by a trained facilitator. Finally, a village fisheries management ac committee was formed, with three people nominated from each group, to prepare a draft village fis management plan (assisted by extension officers) for discussion and approval by the village *fono*

third of all village group meetings were for women only, and approximately one third of members management committees were women. The proportions for untitled village men were similar. village fisheries management plan listed the resource management and conservation undertakings community, and the servicing and technical support required from the Fisheries Division. If the pla accepted, the *fono* then appointed a fisheries management committee to oversee its operation (Kin Faasili, 1998).

20. Within almost two years of full operation, fisheries extension staff attempted to introdu extension program in 65 villages. This was rejected by nine villages and discontinued in a furthe when extension staff noted a lack of community commitment. Forty-four of the remaining village produce village fisheries management plans so far, in a timeframe of 13 weeks. As the Samoan fish reserves are being managed by communities with a direct interest in their success, compliance bans on fishing is high and there are not the enforcement costs associated with national reserves and Faasili, 1998).

D. Community involvement through traditional customs

1. Japan

32. A system of fisheries rights has existed in Japan since ancient times and gives fishing comm exclusive rights over the marine areas they exploit. There are more than 4,000 fisherman coop associations around the country, and with the exception of a few harbours the entire coast is ma under this system which provides jurisdiction out to 5-21 km. The system does not confer property in the sense that the rights are not saleable but are owned by a group or community. It is probably tr this system is responsible for the areas of the coast that have survived intense industrial and popu pressures. This system is a good example of the traditional, sustainable use of coastal waters (Ke Bleakley and Wells, 1995).

2. Ulunikoro Marine Conservation Area, Fiji

33. The Ulunokoro Marine Conservation Area, designated in 2000, represents the adaptati traditional Fijian marine-tenure concepts to modern-day fishing concerns. Three decades ago, the around the village of Waisomo supported a flourish fishery but, as catches and fish size diminished th the 1980s, the local community grew concerned that the resource was disappearing. Convinced village headman that a protected area would bring back the fish, the village then persuaded neighb communities to join in pursuing marine-protected-area designation from the federal Government. D to its adoption by the local villages, the modern concept of no-take marine reserves echoes the trad Fijian concept of "*tabu*", in which local authorities place areas of the sea off-limits to fishing Ulinikoro Marine Conservation Area is now a no-take area. The Fijian Government has empo selected villagers to serve as enforcement officials at the (www.wwfpacific.org.fj/livingexamplefiji.htm).

3. Papua New Guinea

34. The wildlife management area system in Papua New Guinea, where over 90 per cent of th of the island is still under traditional ownership, illustrates how traditional rights can be legalized. A v management area is usually established at the request of the traditional landowners, who approa Department of Environment and Conservation following identification of some particular v management problem. The area is designated under the 1978Fauna (Protection and Control) Act boundaries are established after discussion between the local people and appropriate gover

departments; the management regulations are drawn up by the community and are approved
Department of Environment and Conservation. Generally, traditional forms of hunting by the comm
are permitted. The regulations are enforced by the community with assistance from government o
as required. Enthusiasm for the system is so great that there are too few government staff to prov
necessary advice, assistance and follow-up. Most wildlife management areas are terrestrial but s
have been established for turtles and dugong. For example, Maza wildlife management area, cover
area of 1886 km^2, was set up in 1979 for the management of dugong. Representatives of the six v
involved make up the committee and oversee the enforcement of regulations which prohibit the tak
dugong except by local people. There are restrictions on the size and numbers taken and, for
individual taken, the committee is paid a royalty which is put back into the management of the v
management area (Asigau, 1989).

4. Misali, United Republic of Tanzania

35. Misali Island is a forested and uninhabited island, lying off the west shore of Pemba in the
Republic of Tanzania. It provides the livelihood for more than 11,000 people from Pemba who depe
fishing for living. At another level, Misali is considered holy by the overwhelmingly Muslim popula
Zanzibar. The Misali Island Marine Conservation Area (MIMCA) was established by a ministeria
on 1998. It is run by a management committee, the majority of whom are fishermen, in accordanc
powers granted by the Minister for Agriculture and Fisheries. Despite these management struc
resource depletion has led to the reef being dynamited to extract the few fish left. Following ye
experimenting with conventional and purely technical conservation methods with limited succes
current Department of Commercial Crops, Fruits and Forestry (DCCFF) agreed to test the applica
customary Islamic principles for the management of MIMCA. In 1999, the United Kingdom
Islamic Foundation for Ecology and Environmental Science conducted a pilot workshop involvi
fishing community, religious leaders and government officials. The resource used was a s
photographic slides with an accompanying instruction manual, *Qur´an, Creation and Conserv*
based on verses from the sacred book. The second stage of the project commenced in 2001
workshops involving a deeper study of the Qur´an were conducted. The impact of these workshop
extremely positive. The first immediate outcome was the decision taken by the NGOs conc
supported by DCCFF and the office of the Mufti of Zanzibar, to base the future of MIMCA on I
ethical principles (Chernala *et al.*, 2002).

III. LESSONS LEARNED FROM THE CASE STUDIES

36. This section is based on Wells and White (1995), who developed a whole chapter on comm
involvement in marine protected areas using fewer-case studies than those in this document.
conclusions of Wells and White match the lessons learned from these case-studies.

37. Community involvement has become a widely accepted part of protected area managem
recent years, as conservation has evolved to take into account human needs as well as wildlife prot
Many existing examples illustrate how the management of marine and coastal protected areas
improved through the participation of local communities. Involvement leads to an understanding
principles involved, making enforcement easier and increasing support from the local community, w
financial, political or practical. The community may benefit financially through increased employ
sharing in the income generated by the area, or through improved fishery yields resulting from re
management. The overall effect is to reinstate the idea of marine resources as ´common propert
which the community is responsible.

38. It is difficult to generalize about how a community should be involved. Methods and ty involvement will vary according to the structure of the community, the policies and structure of n and local government agencies, and the features of the marine and coastal protected area. Comm based marine and coastal protected areas are appropriate in some situations, particularly where the small and well defined, and where the community is closely involved with, and dependent on, the and marine environment. In most cases these areas will ultimately require some form of gover support and collaboration to provide the necessary authority to deal with infractions by outsi conflicts between different user groups. Some case-studies show that marine and coastal protecte can work without statutory law enforcement if there is strong community support and education.

39. In other situations, it may be more effective for the government to establish a marine and protected area, particularly if the area is large and involves a number of different communities, if th already conflicts between users, or if there are few people with an interest in the marine and resources or their management. However, government reserves will generally be far more effec local people are involved wherever possible in the processes of establishment and manag Community involvement may be particularly appropriate and easy to implement in regions that ha have recently had, some form of traditional customary law regulating the use of marine and resources, as local people are already familiar with the principles involved. Marine and coastal pro areas managed by communities with a direct interest in their success tend to show high complianc regulations, and low enforcement costs. The same general principles seem to apply in most situatio

40. Firstly, the concept of a new marine and coastal protected area should be introduced carefully to the community and, where possible, in such a way that it may seem that the communit had the initial idea. Information gathered about the area should be passed back to members community so that they develop a greater understanding of its significance. It is essential to gain th and support of local communities and all stakeholders. Secondly, the benefits of marine and protected areas must be made clear to people and their needs should be addressed. The proc education should be seen as ongoing and not limited just to the initial stages. Dissemination monitoring information to all stakeholders is very important in terms of public education and conse decision-making. Thirdly, an important principle is the formation of a committee to overse development and management of marine and coastal protected areas. This is essential for comm based marine and coastal protected areas, but may also be of value in government ones, where the and needs of local people need to be coordinated and presented to the relevant authorities. A representative consultative committee provides an effective mechanism for community involveme provision of advice. The committee maintains a sense of ownership of, and responsibility for, mari coastal protected areas. The process engenders a strong commitment by not only the representativ also all members in the local area. However, all stakeholders need to be involved in the process fr beginning.

41. Where possible, the community should be responsible for enforcement, allowing trad disincentives and peer pressure to operate. Finally, a marine and coastal protected area needs managed in such a way that its future survival is guaranteed beyond the early stages when comm support may mainly reflect the novelty value of the project. Long-term support from the communi be encouraged through the benefits, financial or otherwise, that accrue from a marine and protected area, from community pride and from recognition bestowed on it by other communitie organizations. The protected area must itself be economically viable, either on a self-sustaining b through adequate government support. Community involvement should not be seen by governmen way of cutting costs. Involving the community can cost as much in time and money as running a pro area directly from a government agency, but the guarantee of success is much greater and in situations may be the only means of ensuring long-term stable management.

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