Institutional Frameworks in the Administration of Coastal and Marine Space in Africa

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Abstract

This paper reviews institutional frameworks in the administration of coastal and marine space in Africa. A basic law of human nature is that Man's needs and wants are unlimited; however, the natural resources of the earth are limited. This makes it obvious that resources need to be managed so as to ensure their sustainability. Coastal and marine spaces have a multiplicity of use, which leads to conflict among users; to avoid conflict there must be rules. Institutions have evolved throughout history, not only to control man but also the way he uses natural resources including coastal and marine space. Therefore, effective administration of any kind of natural resource requires clear understanding of available institutional frameworks and their consequent impact on the management of that resource. Different institutional approaches are needed in different contexts due to variations in cultures, values and societal norms. This paper also considers the nature of resources in coastal and marine spaces and the need for surveyors and other stakeholders to be aware of the importance of institutional frameworks in managing these resources. The paper concludes that in order to meet global challenges, institutional frameworks in Africa have changed from an informal regime to a more formal (constitutional) regime without progressive transition in many cases. This has often led to poor administration of coastal and marine space, lost of right and livelihood of many indigenous peoples who subsist on coastal and marine resources. It therefore, recommends the involvement of all stakeholders' especially local resource users at all levels of institutional change.

1. THEORETICAL BACKGROUND

Institutional frameworks are the criteria for decision-making. Thus, institutional frameworks are the various processes groups of people go through to make collective decisions that govern the group (Organization for Economic Co-operation and Development "OECD", 1993). We live in different societies and communities, which have different environments, cultures, norms and values. These influence our behaviour and the way we think. Hence, we have different criteria for decision-making, which implies different institutional frameworks.
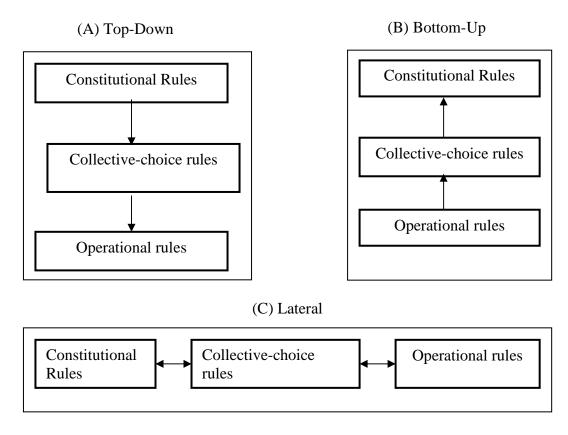
Institutional arrangements are essentially the "rules" influencing human behaviour and include both *formal* and *informal* rules. The formal institutional arrangements are codified in constitutions, statutes, regulations plans and policies. The informal institutional arrangements are manifest in social expectations such as the rules governing relationship within a family, firm or community (Smajgl et al, n.d.)

Coastal and marine space administration on the other hand is broad in scope and meaning and therefore may vary slightly in different settings. Resource management is concerned

with the physical or biological functioning of part of the environment but also with the allocation of resource products within the framework of particular legal and cultural settings (Mather and Chapman 1995). This means that coastal and marine space administration tries to ensure that the uses of coastal and marine resources are physically possible, economically viable, culturally acceptable and sustainable. However, each of these dimensions is complex.

Mather and Chapman (1995) identified that the basic objective of resource management (administration) is to ensure that present levels of exploitation are consistent with the replacement of stocks to ensure long-term sustainability. Therefore, any management approach (Sectoral, Integrated and Collaborative management) can be adopted in the administration of coastal and marine space provided it does not conflict with the basic objectives of resource management.

1.1 Types of Institutional Arrangement That Have Evolved

Ostrom (1990) distinguishes three levels of institutional arrangements as: operational rules (day-to-day working rules made by resource users), collective-choice rules (rules used by users and external agents) and constitutional-choice rules (determine eligibility to participate in the system and set out rules that will be used to design collective-choice rules). Ostrom's levels of institutional arrangements have been used to illustrate types of formal institutional arrangements as shown in Figure1.

Figures 1: Types of Institutional Arrangements
After Ostrom, (1990)

Institutional arrangements broadly viewed may be "Top-down", "Bottom-up" and "Lateral" (collaborative). The Top-down refers to a decision-making process that starts from the constitutional-choice level (national) through collective-choice level (regional/counties) to operational level (local). This is shown in Figure 1(A) where the arrows linking the various levels point from the top (constitutional rules) to down (operational rules), thus indicating that rules and decision are made at the top and then passed on to the bottom.

"Bottom-up" is the opposite of the "Top-up" (from operational through collective-choice to constitutional rule). Figure 1(B) shows "Bottom-up" arrangement and thus the arrows pointing from down to the upper level indicates that rules and decisions are made at the local level and they are then passed on through the regional/counties to the national level.

The "Lateral" (collaborative) arrangement also refers to the process whereby stakeholders from all the three levels come together as partners to make decisions or rules. This is shown with the arrows pointing to each rectangle at the same level in figure 1(C). This implies that rules and decisions are made through collaboration of all the three levels. The three institutional arrangements explained above could be observed in different contexts with different management approaches in coastal and marine space.

2. EVOLUTION OF INSTITUTIONAL FRAMEWORK IN AFRICA

Institutional arrangement in Africa has evolved from Pre-colonial era through colonial era to post-colonial era. The pre-colonial era as indicated in figure 2, refers to the period from the ancient time to the 15th century. During this period, Africans evolved from "no Institutions" (hunting and gathering, subsistence and nomadic age) to informal institutions (empire and kingdom age). At this era institutions were mostly informal and include customs, norms and taboos. They were made collaboratively by group of people who came together as a kingdom or an empire. It is important to mention that there are historical evidence that indicates the existence of formal and somewhat 'top down' institutional frameworks in Africa at this era but these were not related to coastal and marine issues. During this time, administration of coastal and marine space was not an issue since people's attention were on the control of land, territories and land-based trade routes.

The colonial era is the period between the late 15th century and mid 20th century. This era in Africa saw the transformation of institutions from mostly informal and "lateral" arrangement to a formal but "top down" arrangement. The change met a strong opposition at the beginning but the colonial powers generally used undemocratic means to suppress the opposition. During this era, the issue of coastal and marine administration was very strong due to the struggle amongst both Europeans and Africans over the control coastal territories, marine routes and the hinterland for trade. These struggles led to the signing of treaties (formal institutions) among European merchants and the partition of Africa into many colonies (which later became countries).
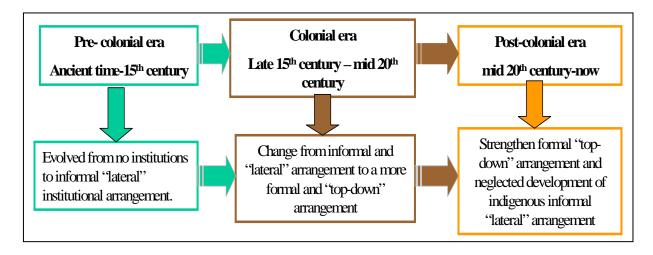
Pre- colonial era Ancient time-15th century	Colonial era Late 15th century – mid 20th century	Post-colonial era mid 20th century-now
Evolved from no institutions to informal "lateral" institutional arrangement.	Change from informal and "lateral" arrangement to a more formal and "top-down" arrangement	Strengthen formal "top-down" arrangement and neglected development of indigenous informal "lateral" arrangement

Figure 2: Time line of evolution of institutions in Africa.

The period between the mid 20th century and now can be classified as the Post-colonial era. This period saw the rise of nationalism, and Africans came to identify that colonisation is a form of oppression: hence the fight for independence (British Broadcasting Corporation; BBC). However, after independence, Africa leaders adopted and strengthened the formal "top-down" institutional arrangement of their previous masters and neglected the development of the indigenous informal, "lateral' (collaborative) arrangements. The reason is that after independence African governments realised that in order to secure the power to govern and to carry out development, there is the need to control land and other valuable national resources, which were controlled by tribal chiefs and ethnic groups. To be able to achieve these objectives, governments in Africa resorted to the use of "top-down" institutional arrangements left by the colonial rulers. This led to displacement, loss of rights and livelihood of many indigenous people who subsisted on coastal and marine resources and space where Western development had been established.

The issue of administration of coastal and marine space during this period does not only relate to national and international conflict over coastal settlement, trade and sea routes, but also over-exploitation of coastal and marine resources, international rights over coast and high seas, pollution, endangered species, conservation and sustainability. These problems have led to the development of many National, Regional, Intra-national and International actions and institutions such as (UNEP, 2002):

- United Nations Convention on Law of the Sea (UNCLOS) adopted in 1982;
- United Nations policy on environment and sustainable development (Agenda21) adopted in 1992;
- Convention on Fishing and Conservation of the Living Resources of the High Seas (Geneva, 1958);
- African Convention on the Conservation of Nature and Natural Resources (Algiers, 1968);
- Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar, 1971);
- Convention for the Protection of the World Cultural and Natural Heritage (Paris, 1972);
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (Washington, D.C., 1973).
- Convention on Migratory Species of Wild Animals (Bonn, 1979);

- African Convention on the Conservation of Nature and Natural Resources (1968);
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (1973).

It is important to note that institutional arrangements in Africa have gone through three stages of evolution and two transitions as illustrated in Figure 2. The two transitional periods (pre-colonial era to colonial era and colonial era to post-colonial era) were "revolutionary" (based on force) rather than education, collaboration and building of consensus for change. Therefore the new institutional framework in Africa (formal & top-down) met strong opposition. Due to this, the informal institutions operated alongside the new institutions without integration. The formal "top down" institutions also became difficult to enforce since they were not developed on consensus among the population and therefore, lacked general acceptance. This situation, possibly, led to numerous problems and the subsequent ineffective administration of coastal and marine space in Africa.

However, the new international "order of thinking" in respect of environmental resource management, which gives preference to the involved stakeholders (participation) at all levels in the decision-making process, compels African leaders and policy makers to change their institutional arrangements. The pressure comes in the form of African countries accession and ratification of international conventions, resolutions and policies, example Agenda 21, which gives clear guidelines for their implementation.

3. COASTAL AND MARINE RESOURCES

The coast is the area where the land and sea interact. The marine area also refers to the entire ocean and the associated high-energy coastline. Coastal Zone is a dynamic system and is a result of interaction with atmospheric processes, the operation of varied ecosystems and coastal processes, and catchments activities as well as the different degree of development present (OECD 1993).

Coastal and marine resources are numerous. They range from land, forest, coastal waters, (lagoons, estuaries, inland waters, wetlands), reefs, seawater, waves, minerals and hydrocarbons to living marine organisms. The competing demand for these resources often generate conflicts between different users, such as developers, shipping, conservationists, indigenous people, as well as within user groups (OECD 1993).

Figure 3 shows clearly that the Coastal and marine space have multiplicity of uses, which often leads to conflict. OECD, (1993) identified that to avoid conflict, in a multiple use resource there must be rules, hence the importance of institutions frameworks in the administration of coastal and marine space.
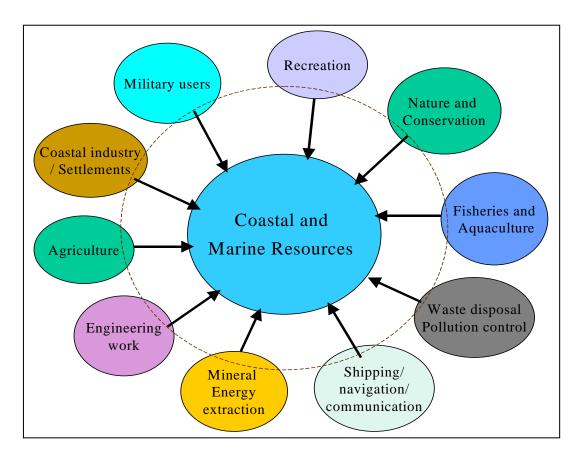
Figure 3: Competing Demand For Coastal And Marine Recourses

Because resources are scarce in relation to the demand for it, the scramble for the usage of resources at the coastal and marine space by man is ubiquitous and from antiquity. This has resulted to different property rights. The property rights in coastal and marine space range from open access (no specific right), common access (access by membership), common pool (access by identified group) and private property (clearly defined access) to public or state property (access right for public held in trust by the state) (McKean, (1992). Using nautical distance, UNCLOS sets out clearly coastal and marine areas that nations can apply these rights (http://www.globelaw.com/LawSea/lsconts.htm).

The resource types on the continuum in Figure 4 differ in terms of rights over the resource. According to Steins and Edwards, (1996) any open access resource does not become a common property until the users have agreed on the establishment of a set of working rules determining decision-making structures, resource allocation, excludability and pay-offs. However, the agents of institutional transformation in Africa, possibly, did not follow this change process.
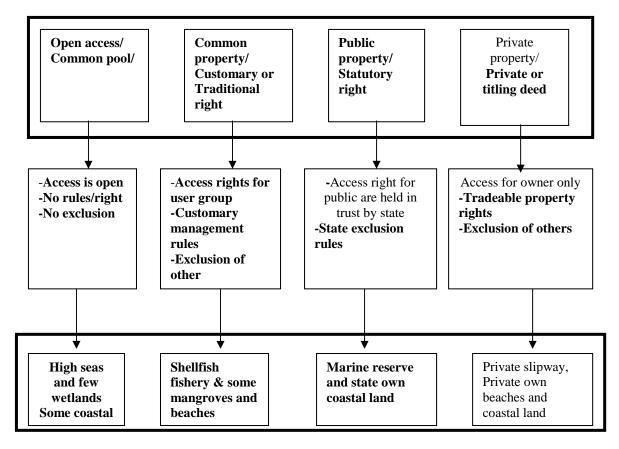
Open access/ Common pool/	Common property/ Customary or Traditional right	Public property/ Statutory right	Private property/ Private or titling deed
-Access is open -No rules/right -No exclusion	-Access rights for user group -Customary management rules -Exclusion of other	-Access right for public are held in trust by state -State exclusion rules	Access for owner only -Tradeable property rights -Exclusion of others
High seas and few wetlands Some coastal	Shellfish fishery & some mangroves and beaches	Marine reserve and state own coastal land	Private slipway, Private own beaches and coastal land

Figure 4: Continuum of Coastal and Marine Right
(Source: After McKean (1992))

4. ADMINISTRATION OF COASTAL AND MARINE SPACE

Mather and Chapman (1995) reported that there are side effects of resource use, which impinge on persons other than the user. They call these side effects 'external costs'. External costs are passed on to society as whole or even future generations. The use of coastal and marine space is not without "external cost". Institutions are therefore, needed to make the use of coastal and marine space equitable and sustainable.

Bryson and Crosby (1992) argued that no one alone could reverse environmental damage (external cost). Instead, in order to marshal the legitimacy, power, authority, and knowledge required to tackle any major public issue, organisations and institutions must join forces in a "shared-power" world. This implies that administration of coastal and marine space requires the involvement of all stakeholders.
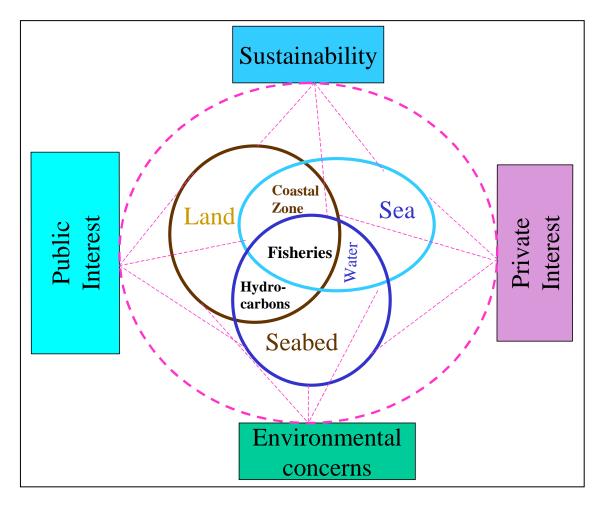
**Figure 5: Relationships, Interest and Concerns in the Administration
of Coastal and Marine Space**

Figure 6 illustrate the complexities of issues and interest in the administration of coastal and marine space. The interactions between land, sea and seabed give out fisheries. Land and seabed provide hydrocarbons, seabed and sea also leads to seawater while interaction between land and sea gives coast zone and its ecology. Exploitation of all these sets either by public or by private investors raises environmental concerns and the issue of sustainability. These concerns are difficult to resolve due to related problems, which are many.

Four problems are related to the administration of coastal and marine space:
- It has no clearly defined boundaries;
- International in nature (because water travels);
- It is dynamic, due to the interaction of physical and human processes;
- It is characterised by multiple users.

These problems have enormous impact on the management of coastal and marine space. Surveyors and all stakeholders involve in its administration need to have knowledge of the nature coastal and marine resource and the associated management problems outlined above. In addition, they need to be aware of the type of formal and informal institutional

arrangements available and how it impact on the current management. This knowledge will help in the appraisal of the current management issues and the development of appropriate institutional framework for sustainable management. It must be noted here, that society is different in terms of culture, values and norms. Therefore, there are different interaction processes between peoples and a resource. This implies that different institutional frameworks may work for different contexts in the administration of coastal and marine space.

Chapter 17 of the UN Conference on Environment and Development (Agenda 21) in 1992 was devoted to the marine environment and stresses the need to reach integration, to apply preventive and precautionary approaches and aim at full participation of public (Cicin-Sain and Knecht, 1993).

Agenda 21 advocates for the move away from the "top-down" institutional framework to a more "lateral" and "bottom-up" approach in the management of coastal and marine space. This is because it has been identified that users' participation is an essential part in the management of a pressured resource. This is because any institutional arrangement, which attempts to change or undermine the "status quo" of resource access without the participation of the users, can be futile (Islam, 1998). This implies that the former "top-down" approach was a recipe for failure. There is, therefore, a ring of truth to the rationale that local communities are likely to be the best caretakers of the environment, as it is primarily in their own interest to manage their resources sustainably.
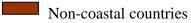
In Africa institutions and policies regarding management and access to coastal and marine space are not effectively developed to ensure participation and equity. Against this background is rapid population growth, urbanisation, rural to urban migration, increased tourism and industrialisation. These have increased pressures on the coastal and marine space, which is the 'cradle' of development, economic activities. Agenda 21 was to have a significant impact on development of internationally acceptable institutional framework for sustainable management of environmental resources in Africa.

However, only South Africa has formally adopted a national Agenda 21 strategy. Although Cameroon, Cote d'Ivoire, and Ghana have not formalized national plans, they have implemented national policies and laws that address issues related to sustainable development. For example, laws have been promulgated on environmental impact assessment; sustainable use of water, forests, and biodiversity; and management of solid wastes. It is important to note that as at 2002, ten year down the inception of Agenda 21, only 28 out of the 53 countries in Africa has implemented activities that are related to Agenda 21. It is worth noting here that 6 of the 28 countries that have implemented Agenda 21 related programmes are landlocked and have no coast or marine related issues.

Table 1: African Countries with Local Agenda 21 Activities

Country	Number of Local Agenda 21 Initiatives
Algeria	3
Benin	1
Burundi	**2**
Cameroon	1
Congo, Democratic Republic of	2
Egypt	7
Gabon	1
Ghana	3
Kenya	11
Libya	2
Madagascar	5
Mali	**2**
Malawi	**4**
Mauritania	1
Morocco	5
Mozambique	2
Namibia	5
Nigeria	5
Rwanda	1
Senegal	3
South Africa	20
Sudan	1
Tanzania	13
Togo	2
Tunisia	1
Uganda	**5**
Zambia	**4**
Zimbabwe	**39**

Source: National Academic Press (NAP)(2002)

▬ Non-coastal countries

The challenges of implementing Agenda 21 were discussed at three regional consultations by African leaders in 2002. The challenges, identified, include the following (NAP 2002):

- Inappropriate institutional frameworks in most countries, particularly a lack of co-ordination among ministries and across sectors;
- Inadequate co-ordination between governments, NGOs, and the private sector;
- Lack of appropriate legal frameworks;
- Lack of national consultation prior to signing international agreements and the proliferation of those agreements, which results in signing conventions without full

knowledge of the implications to the countries and without having the capacity to translate these agreements into action;

- Poverty, illiteracy, and lack of awareness create problems in the development and implementation of sustainable development programmes.

The challenges outlined above illustrate the inadequate experience and poor legal framework to adapt to a more participatory and democratic institutional arrangement for managing resources in Africa. The reason could be that previous institutional transitions were not based on participation and democratic principles. Hence African governments perceive the current participatory approach as a new phenomenon, which is time-consuming and difficult to implement given the available institutional structures. There is therefore the need for policy-makers, surveyors and other social scientists to get involved in the dialogue and discussion to develop appropriate mechanisms that will ensure the realisation and sustainability of participatory institutional approach to the management of environmental resources in Africa.

5. SUCCESS STORIES IN AFRICA

It is very important to indicate that in spite of the numerous setbacks encountered in the development of institutional frameworks for managing coastal and marine space in Africa, some successes have been achieved in many African countries. These occur where either government agencies or NGO acknowledge the importance of local institutions and resource users and therefore adopt participatory, integrated and collaborative approach to manage coastal and marine resource(s) in a specific area within a country. Below are three of such success management stories in Africa.

5.1 Collaborative Mangrove Management of Tanga: Tanzania (Nurse and Kabamba, 1999)

Tanga is one of the Northern regions of Tanzania. It coastline covers approximately 130km from the Kenyan border in the North, to Sadani Game Reserve in the South. About 150,000 people live in coastal villages and rely on a number of activities to maintain the household economy. Artisinal fishing and farming are the most important of these activities.

In Tanga, the larger fragments of coastal forest (mangrove) are under some form of reserve status (traditional sanctuary sites). Following a period of one party rule under a socialist model, indigenous management system for common pool resources broke down with the formalisation of power in the villages. This led to resource management problem. The key issues related to coastal forest management in Tanga are:
- Increase pressure on the coastal forest from local and various commercials;
- Ineffective protection and policing by the forestry field staff;
- Lack of habitat restoration and development;
- Deprivation of communities' subsistence by local and commercial users;
- Degradation of the coastal forest; and
- Growing conflict over resources between local community and the government.

5.1.1 Change Process

A recent move towards multi-party democracy offered opportunity to build partnerships for conservation and development with institutions other than government at the village level. With technical assistance from IUCN and funding from Irish Aid, an integrated programme aimed at building capacity in local communities and in government was developed and implemented to ensure that coastal resources can be protected, utilised and managed for the benefit of present and future generations of residence.

The programme planners adopted a collaborative management approach because of the strong desire by the villages to maintain the mangrove as a common pool resource, rather than retain it as state controlled resource or private land. Following a community led planning process with programme staff, the villages established a number of committees (local institutions) to deal with management of Tanga natural resources.

These local institutions come together to form the 'village government'. Other institution involve were: Ministry of Land and Environment (MOLE), responsible for the management of natural resources in the country; Ministry of Agriculture (MOA), responsible for the management of agriculture; and Forestry Department (FD), responsible for protection and policing of forest resources. Figure 7 shows institutional arrangements and interactions of Tanga mangrove management.
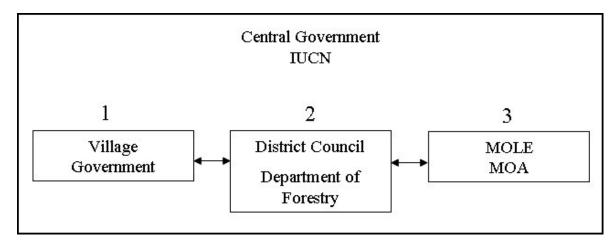

Figure 6. Institutional Arrangements of Tanga Mangrove Management

The rectangle numbered 1, 2, and 3 indicate operational, collective-choice and constitutional rules respectively the position of the arrows show the level of interaction, while the big rectangle stands for the Physical and technical attributes of Tanga and the socio-economic characteristics of the user group. The criteria for decision-making or rules as shown in figure 5 are collaborative. Thus all the stakeholders come together as partners to make rules. The Village Government (village committees), District council and Department of Forestry (district interest) and MOLE and MOA (national interest) come together as partners and collaborate to make rules. The Central government and IUCN above the rectangles were not part of the decision-making process; however, they provide advice and assistance on Demand.

5.1.2 Outcomes

The outcomes of the programme were as follows:
▪ Improved resource base to satisfy the livelihood need;
▪ Helped the communities to re-gain their sense of ownership thereby reducing the conflict;
▪ Define clearly boundaries of access, reserve and use;
▪ Increased awareness among user on sustainable management of the mangrove;
▪ Increased habitat restoration; and
▪ Reduced the cost of protection of the mangrove.

5.2 Integrated coastal zone management in Madagascar (Wildlife Conservation Society)

In Madagascar, the Antongil Bay region is known for its rich biodiversity. Half of all currently known floral species in Madagascar occur in the area. Overall, the strong impacts of several anthropogenic pressures threaten the integrity of the terrestrial and marine ecosystems in and around the bay. Wildlife Conservation Society (WCS) a non-governmental organisation (NGO) is not only concerned with the conservation of the environment, but with the well being of the local population. WCS has initiated ICZM procedures that ensure all concerned parties are included in the creations of a strategy and an action plan for the management of resources, and will work together to implement it.
Key marine threats faced by Madagascar, many of which are common to countries around the region, are:
▪ Uncontrolled industrial fishing, especially by illegal unlicensed unregulated vessels;
▪ Industrial trawling, especially on shallow continental shelf seas and sea mounts;
▪ Degradation of coral reefs through over-fishing, climate change effects and sedimentation;
▪ Hunting or incidental capture of large marine fauna (dugong, dolphins, sea turtles, sharks and sawfish);
▪ Local extirpation of high-value species such as sea cucumbers;
▪ Conflicts between resource users over access to resources;
▪ Insufficient protection for marine environment;
▪ Insufficient capacity and information management.

WCS activities that have contributed greatly to sustainable management of coastal zone of Madagascar and Antongil Bay in particular include:
▪ Promotion of the collaboration with potential partners (international, national, regional et local)
▪ Implementing ICZM procedures listed below:
▪ The preparation of a consultation process, to deal with the identification of concerned parties and their problems in relation to their interests concerning resource management.
▪ The consultation: bring together the environmental managers (authorities, users, technicians and researchers) at one table to find a common management approach.
▪ Activities following consultation: finalize and implement the integrated management plan
▪ Put together an Information, Education and Communication (IEC) program

5.3 Community Participation for Conservation of Marine Turtle in Ghana (Olesu and Baidu, 1998)

In Ghana, the Wildlife Conservation Regulation, L.I 680, 1971, protects marine turtles and the hunting, capturing or destruction is absolutely prohibited. These wildlife regulations notwithstanding, marine turtles continue to face various forms of threat, which are responsible for the increased mortality rate on the Ghanaian beaches. Past studies reported the occurrence of five species of marine turtles on the Ghana coast. These were: the Leatherback, the Green, Olive Ridley, Hawksbill and the Loggerhead. But a more recent study carried out in 1994 by the Coastal Wetlands Management Project did not record the hawksbill and the loggerhead. The major threats to marine turtle population in Ghana were;
- Predation on eggs and juveniles by domestic animals especially pigs and dogs,
- Human exploitation also contributes to the decline in turtle population in Ghana.
- Coastal erosion and beach development, which destroy some good turtle nesting habitats
- Dumping of rubbish on the beaches has also contributed to the mortality of turtles.

5.3.1 The Change Process

The initiative by the Ghana Wildlife Society to adopt a strategy, which actively involves the local coastal communities in the conservation of marine turtles, emerged from the fact that the past policies which excluded local communities in the management of wildlife resources were ineffective. The community participation process in the conservation of marine turtles started with a national workshop in, 1995. The workshop brought together chiefs, representatives of communities living along the coast, scientists and conservationists from the universities and relevant government departments. Some of the important recommendations from this workshop, among others were that:
- The District assemblies should be encouraged to formulate byelaws to regulate the rearing of domestic animals, which prey on turtles.
- Animal owners should be assisted to construct structures to ensure better husbandry.
- Community task forces should be formed to be responsible for education and turtle conservation activities.
- Alternative economic activities to be promoted to reduce pressure on turtles as a means of livelihood.
- Fishermen whose nets are destroyed by turtles should be compensated as an incentive to release them back into the sea.

Immediately after the workshop, the Ghana Wildlife Society started consulting and working with the communities to form the Turtle Conservation Task Force. The communities, through the chiefs, District assemblymen and other opinion leaders nominated two members from each of the 17 main communities in the project area (Volta estuary and Prampram near Accra; 80km stretch) for inclusion in the Task Force. The 34-member task force was formally inaugurated in June 1996. The role of the community turtle task forces include:
- Educate the communities about the status of marine turtles in the country and the need to stop the killing and egg collection.
- Report killing and egg collection to the chief in the first instance

- Identify important nesting sites and protect any nests found from predators and natural hazards such as erosion to ensure successful hatching of the eggs.
- Liaise with fishermen to release any turtles caught accidentally in fishing nets.
- Assist in the collection of scientific data needed for the management of turtles
- Serve as a link between the coastal communities and the Ghana Wildlife Society.
- Play a lead role in mobilising the people in community projects initiated by the Society aimed to enhance marine resources conservation.

A series of training programmes were organised by the Society for the task force members to enable them to perform the above functions effectively. The turtle conservation strategy advocated is grounded in partnership between the local communities, the Ghana Wildlife Society as an NGO and relevant Governmental agencies such as the Wildlife Department. In this partnership the coastal communities are recognised as the key stakeholders who play a central role in the turtle conservation efforts with assistance from the external agencies.

5.3.2 Outcomes

The most important achievement of the turtle conservation project has been a dramatic change in people's attitude and behaviour towards marine turtles. This may be attributed to an increased awareness of the turtle problem due to the activities of the Society and the community turtle task forces. Task force members have reported that fishermen often invite them to come and witness the release of turtles accidentally caught back into the sea. Hitherto, accidentally caught turtles were killed. The formation of the turtle task forces also provides an immediate point of contact for community people who want to report egg collection or killing of turtles.

The Task Force members assist in collecting data on nesting turtles, which are required for long term monitoring of marine turtle populations on the Ghana Coast. This information will also be used to evaluate the turtle conservation project as a whole.

In the long term it is planned that the communities will be involved in the promotion of community-based eco-tourism in the turtle concentration zone. Revenue from this enterprise will be used for the development of the communities. Community-based eco-tourism will also provide an employment avenue for some of the unemployed youth in these communities.

6. CONCLUSIONS

Institutional arrangements have been developed which now adequately protect the values of nature-based systems and deliver improved socio-economic conditions for people in communities. However, institutional arrangements can be unpopular and possibly, make resource management ineffective if the arrangements are changed without due recognition of informal institution. Knowledge in the available formal and informal institutions and their effects in enhancing or detracting resource management help in designing and implementing integrated institutional framework for current and future resource management in a sustainable way.

Participation of the stakeholders (resource users) is very important in the administration of coastal and marine space. Any institutional arrangement or management plan, which does not involve the resource users, is likely to conflict with users' interests as well as the informal institutions of the users. Such conflict normally brings ill feeling among users and may possibly cause more resource degradation and depletion rather than resource management. Surveyors and other coastal and marine space administrators need to be aware of this.

The process of developing institutional frameworks for the management of coastal and marine resources in Africa encountered some setbacks; hence there have been gaps that need to be bridged.

African leaders and policy makers should recognise the indigenous institutions and the need to integrate the formal institutional frameworks to the informal (indigenous) institutional frameworks. This can be achieved through education and research, strong community participatory and collaborative decision-making approach. If this is done, it will broaden the ownership of the laws and policies, empower their people and also increase their commitment to implementation, which could likely lead to sustainable management of coastal and marine space.

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