Consultancy Report

PRESENT INSTITUTIONAL STRUCTURE FOR CONSERVATION OF BIODIVERSITY REVIEWED AS TO FUNCTIONALITY"

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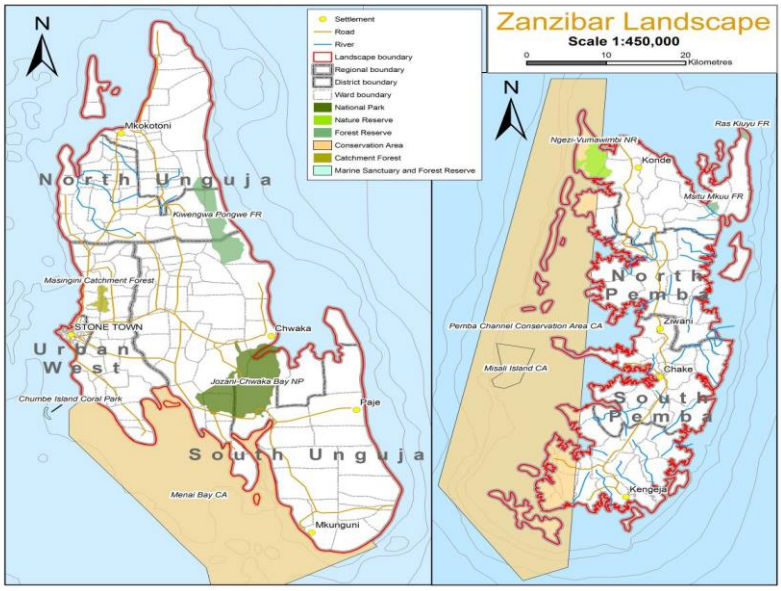

The Zanzibar Landscape showing Protected Areas

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I would like to express my sincere gratitude to Department of Forestry and Non Renewable resources Zanzibar (DFNRNR) and World wildlife Fund for supporting me financially to carry out this study. Many thanks should Mr. Ali Ali Mwinyi for tire less support since the beginning of the study until its completion, his advice and technical support are of most valuable. I would also like to thanks staffs of the Department of Forestry and Non-Renewable Resources- Zanzibar In particular Mr Mussa Said Bakar, Salim Ali Khamis and Ms. Fatma Mbarouk Saleh for their assistance during data collection.

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EXECUTIVE SUMMARY

This study deals with the Review of Present Institutional Structure for Conservation section of Zanzibar so as to function more effectively. The study mainly focuses on addressing six objectives provided in the terms of references which are:

- Drafting recommendations on conservation biodiversity policies for the DFNRR:
- Formulating strategies based on the National forest resources management plan 2010-2020
- Developing and harmonizing approaches, methodologies, and criteria for identification and setting priorities for hot stops" and sensitive areas
- Promoting the environment related practices, measures for control and management of FPAS
- Promoting full range of available management tools so as to ensure the sustainability of the conservation of biodiversity Unit/division
- Elaborating and suggesting cooperative and collaborative actions and partnerships among various stakeholders

Different methods of data collection were used are purposive and include the use of questionnaire, discussions and observations. The data were analyzed using Microsoft Excel. The results of the study have been analyzed categorical and three categories of stakeholders have bee involved which are Government Institutions, Non governmental organization and other stakeholders (Timber and poles sellers). In the first category of governmental Institutions, five institutions having 21 respondents were interviewed. These Departments are Forestry and Non Renewable Resources (14 respondents), Department of Environment (3) respondents, Department of Irrigation (one respondent), Department of Fisheries (one respondent) and Zanzibar Water Authority (one respondents). Out of 21 respondents 18 were males and three respondents were females.

The second categories of respondents involved in this study are Non Governmental Organization. Seven respondents representing five organizations have been interviewed. These NGOs are Ngezi- Vumawimbi Natural Resources Conservation Organization (NGENARECO, one member), SEDCA two members, JECA two members, Vitongoji Environmental Conservation Association (VECA one member) and Jumumi one member.

Out seven members from NGOs, six were males and one female.

In third groups of other stakeholders involves seven respondents, out of which six were males and one female. Four are saw mill managers, two are pole sellers and one is timber seller.

The study have reviewed the legal status Protected areas and found that Ngezi-Vumawimbi Nature Reserve, Masingini Forest Reserve and Jozani Chwaka Bay National Park have status which satisfy the conservation of the forest resources within the PAs, how ever the status of Kiwengwa Forest Reserve needs the completion of the process since it was initiated and not completed. In addition Kiwengwa should upgraded to Nature reserve in order to overcome major threats since the areas have a lot of biodiversity such Adders duiker, and other potential resources such as water catchments and tourism attraction sites which needs more conservation attention.

The status of Ras kiuyu Forest Reserve and Msitu mkuu Forest Reserves are some how contradictory (not complete probably) as they are only mentioned as the reserve in the List of forest reserves in the Forest management and conservation Act no 10 of 1996 but their

gazzettment notice are not known. Therefore follow up or completion of the process is needed.
Within the legislation of 1996 the mangrove forest were not given any status. Therefore the mangrove ecosystem should be given legal status in order to have effective and sustainable management of mangrove forest and associated biodiversity.
Further more, the reports suggest that several natural forests patches should be identified, surveyed and given legal status such as special management areas.

There is a need of refining the policy framework for protected areas management in the National Forest Policy to capture the question of REDD including carbon trading and Climate changes matters, mechanism for ensuring equal cost/benefit sharing in participatory conservation, setting environmental guidelines and control in and around protected areas as most of our PAs are in Potential areas for other investments, thus if no guidelines for investments in and around protected areas, it is likely to threaten PAs in near future from investments. Furthermore, the study suggests that, there are many different actors taking an interest in conservation and development issues. Therefore, conflict management becomes real and a very important issue to deal with and the forest policy should set a mechanism for conflict resolution.

In addition the SWOT, of conservation section, Roles of different stakeholders, Best practice for conservation sections, Criteria for identification of hotspots and the proposed organization structure have been clearly mentioned in the report. A detailed action plan showing main activities to be implemented to fulfill effective conservation of biodiversity have been presented.

LIST OF ABREVIATIONS

ADB	African Development bank
BSAP	Bangladesh Strategic Action Plan
CBD	Convention on Biological Diversity
CBFM	Community Based Forest Management
CBNRM	Community Based Natural Resources Management
CBOs	Community Based Organizations
CITES	Convention for International Trade of Endangered Species
CoFMAs	Community Forest Management Agreement
CPR	Common Property Resources
DFNRNR	Department of Forestry and Non Renewable Natural Resources
DoE	Department of Environment
FBD	Forestry and Beekeeping Department
FD	Forest Department
FPAs	Forest Protected Areas
FRs	Forest Reserves
GEF	Global Environmental Facility
GHG	Green House Gases
IBAs	Important Bird Areas
ICDP	Integrated Conservation and Development Programs
ICZP	Integrated Coastal Zone Management
IRDP	Integrated Rural Development Project
IUCN	International Union for Conservation of Nature
JECA	Jozani Environmental Conservation Association
JFM	Joint Forest Management
JUMUMI	Jumuia ya Uhifadhi Mikandaa Micheweni
LAMP	Land Management Programme
MDGs	Millennium Development Goals
MKUZA	Mpango wa Kupunguza Umasikini Zanzibar
MNRP	Management of Natural Resources Program
MNRT	Ministry of Natural Resources and Tourism
NBSAP	National Biodiversity Strategy and Action Plan
NEAP	National Environmental Action Plan
NGENARECO	Ngezi Natural Resources Conservation Organization
NGOs	Non Governmental organization
PAs	Protected areas
PES	Payment for Environmental Services
PFM	Participatory Forest Management
REDD	Reduced Emission from Degradation and Deforestation
RSCN	Royal Society for the Conservation of Nature
SADC	Southern African Development Community
SARs	Species–Area Relationships
SEDCA	South Environmental Development and Conservation Association
SPSS	Special Package for Social Science
UNDP	United Nations Development Program
UNFCCC	United Nations Framework Convention on Climate Change
UNFF	United Nations Forum on Forest

VCCs	Village Conservation Committees
VECA	Vitongoji Environmental Conservation Association
WWF	World wildlife Fund
ZAWA	Zanzibar Water Authority
ZEP	Zanzibar Environmental Policy
ZIPA	Zanzibar Investment Promotion Agency
ZNFP	Zanzibar National Forest Policy

1. INTRODUCTION

The Department of Forestry and Non Renewable Natural Resources (DFNRNR) and World wildlife Fund (WWF) are implementing the Coastal Forests Protected Areas Project in Zanzibar. According to DFNRNR, the National Forest Policy-1995 articulates and gives the due priority on conservation of protected areas but the current structure set up of the DFNRNR conservation unit does not augment (enhance) the policy.

The DFNRNR now seeks a functional and sustainable institutional structure for terrestrial Protected Areas Conservation Unit/division. Thus, this report have reviewed and defined the best organization structure for the conservation section and then recommend the ideal structure with regards to **building training** and **infrastructure capacity**.

Protected areas are the cornerstone of virtually all national and international conservation policies. They play a critical role in conservation of biodiversity, maintaining genetic resources, protecting important ecosystem functions and helping to protect many fragile human communities and cultural landscapes. Around 11.5 per cent of the earth's land surface is in protected areas, 10 percent of the world's forests are to be found in protected areas, and Forest Protected Areas make a critical contribution to conservation (IUCN, 2006).

The biodiversity values of Zanzibar (both of flora and Fauna) existing in Protected areas and outsides protected areas are playing great roles in implementing the national development strategies such as Vision 2020 and MKUZA through payment of environment services (e.g. tourism, etc) and regulation of climate and hence favorable condition for agriculture. Currently, protected areas are faced with a number of problems that hinders their effective management and needs immediate interventions. Among these include:

- In adequate institutional set up ie the section appear segregated into sections which are not interlinked (mangrove, Wildlife and Terrestrials Forests). Furthermore, wetlands other then mangroves and sacred forests are have no been involved in official conservation management.
- Approaches, methodologies, and criteria for identification and setting priorities for hot stops" and sensitive areas are not well understood.
- Management tools that can ensure the sustainability of the conservation of biodiversity Unit/division are not developed in some PAs and even in the areas existing are well implemented.
- There is a gap in defining a conservation unit (what should be included), identification of proper stakeholder to be involved in PAs conservation as well as the level of involvement in conservation.
- The conservation section structure is not well organized ie it is in sub unit unity which stand alone and even some of sensitive areas for biodiversity such as wet lends, rivers, ponds and botanical garden are not considered in their management.

1.1 OBJECTIVES

The main objective of this assignment is to review present Institutional Structure for Conservation of Biodiversity so as to come up with structure of conservation section /unit that will act effectively.

1.12 Specific objectives

1. To draft recommendations on conservation biodiversity policies for the DFNRNR:
2. To formulate strategies for conservation of biodiversity based on the National forest resources
   management plan 2010-2020
3. To develop and harmonize approaches, methodologies, and criteria for identification and setting priorities for hot stops" and sensitive areas
4. To promote the environment related practices, measures for control and management of FPAs
5. To promote full range of available management tools so as to ensure the sustainability of the
   conservation of biodiversity Unit/division
6.To elaborate and suggest cooperative and collaborative actions and partnerships among various
   stakeholders

1.2 Biodiversity Values

The Islands of Unguja and Pemba have natural forests with quality and unique ecosystems of high biodiversity values. These generally categorized as high forests, coral rag thickets and mangrove forests patches representing the last refuge for wildlife species. As other coastal forests they habour high number of endemics forming an important part of the global biodiversity 'hotspots' and the Eastern Africa Coastal Forests Eco-region. (Pereira, 2010)

The most significant biodiversity within the Zanzibar forests includes endemic plant species and subspecies such as *Aloe pembana, Erica mafiensis* and *Dypis pembana,* endemic mammal species such as *Procolobus kirkii, Pteropus voeltzikowi, Cephalophus monticola pembae* and *Cephalophus adersi.* Endemic bird species on Pemba Island include Pemba green pigeon *Treron pembaensis*, Pemba scops owl *Otus pembaensis*, Pemba white-eye *Zosterops vaughani*, Pemba sunbird *Nectarinia pembae.* Zanzibar Island has some endemic bird sub-species – for example *Tauraco fischcheri zanzibaricus. Phelsuma abbotti, Lygosoma pembanus* and *Leptotyphlops pembae* represent the endemic reptiles and *Cassina jozani* represents the endemic amphibian species. (Pereira, 2010)

2.0 METHODOLOGY

2.1 Scope of work

The assignment had reviewed international and regional best practice, developed a cooperative governance model for conservation of biodiversity, identifies alternative institutional models, reviewed the cost effectiveness of different institutional models, assessed the feasibility of the preferred institutional model and developed an implementation plan to guide the restructuring processes. specifically the consultant have reviewed the strengths, weaknesses, opportunities and threats of the current institutional setup , Reviewed of best practice in the governance of FPAs; Reviewed the legal status and institutional structure, Reviewed the governance model for conservation Unit/Division, Reviewed of international and regional best practice in the institutional structuring of government protected area agencies, roles and responsibilities of the different institutions and partners in planning, management and monitoring; Cost-benefit analysis of the different institutional options and Action plan, with explicit timelines, for the restructuring of the government protected area agency/ies; describing the institutional and governance arrangements

2.3 Data Collection Methods

The study methodology involved both Secondary and primary data collection. The study carried out using both descriptively and quantitative and involved both government and non governmental institutions responsible for conservation in obtaining the required information from the key informants. The study used purposive non probability method in data collection

2.4 Secondary Data Collection

Secondary data were collected from various documents and records from several relevant institutions and organizations including local, national and international organizations. These include both published and un-published working documents at all levels. Most of the secondary data were based on what had been done or known in relation to conservation of biodiversity and their respective institutional structure reform in the study area or other similar places in the world. Information from secondary sources will help the creation of the state of knowledge on the subject.

2.4.1 Primary Data Collection

2.4.2 Questionnaire

In this study structured questionnaire were used to collect data on Institutional Structure for Conservation of Biodiversity. It also revealed information on people feelings on how the conservation of biodiversity should look like in order to meet the interest of all stake holders from the public to the privates sectors including the non governmental organization. This technique enabled the study to collect primary data. Also, this method gave the chance to all respondents to respond regardless their level of education. Furthermore, it provided an opportunity to observe the validity of respondent response on

the issue concerned. Lastly, it was useful for revealing information which is complex, sensitive and more ambiguous. The questions were translated in Swahili to give understanding of the theme in detail in order to allow them participate in giving their views.

2.4.3 Observation, Visits, Interviews and Consultations

Field visits tied with interviews of key informants and consultative meetings with relevant state and non state actors and stakeholder institutions formed a major source of primary data. Visits to , departments, CBOs, NGOs, households and meetings with government officials were conducted aiming in providing stakeholders with an opportunity to elicit their views on the set up of conservation of biodiversity Unit/Division and their respective strategies.

2.5 Data analysis

Collected information's were edited, coded, categorized, tabulated and some fed into Excel computer programs for analysis. Irrelevant information were discarded while missing gaps were filled through personnel contact in the field.

3. 0 NATIONAL AND INTERNATIONAL REVIEW OF CONSERVATION SCTIONS SET UP.

3.1 PROTECTED AREAS.

Protected area is an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means (IUCN, 1994).
Forest Protected Area a subset of all protected areas (as defined in 1 above), that includes a substantial amount of forest. This may be the whole or a part of a protected area (IUCN, 2006). A clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values".
The following six management categories fit within the IUCN definition of a protected area.

3.1.1 CATEGORY 1A STRICT NATURE RESERVE

This category refers to those areas that receive the least amount of human impact. They are defined by IUCN as " *strictly protected areas set aside to protect biodiversity and also possibly geological/geomorphological features, where human visitation, use and impacts are strictly controlled and limited to ensure protection of the conservation values* " The primary objective of protected areas in this category is to conserve regionally, nationally or globally outstanding ecosystems, species (occurrences or aggregations) and/or geodiversity features: these attributes will have been formed mostly or entirely by non-human forces and will be degraded or destroyed when subjected to all but very light human impact.

The area should generally:

- Have a largely complete set of expected native species in ecologically significant densities or be capable of returning them to such densities through natural processes or time limited interventions.
- Have a full set of expected native ecosystems, largely intact with intact ecological processes, or processes capable of being restored with minimal management intervention;
- Be free of significant direct intervention by modern humans that would compromise the specified conservation objectives for the area, which usually implies limiting access by people and excluding settlement;
- Be suitable as a baseline monitoring site for monitoring the relative impact of human activities;
- Be managed for relatively low visitation by humans;

3.1.2 WILDERNESS IB

This category refers to those areas that remain largely unchanged by humans. They are defined by IUCN as "large unmodified areas that retain their natural character without permanent or significant human habitation, which are protected and managed so as to preserve their natural condition". The primary objective of protected areas in this category is to protect the long-term ecological integrity of natural areas that are undisturbed by significant human activity, free of modern infrastructure and where natural forces and processes predominate, so that current and future generations have the opportunity.

The area should generally:

- Be free of modern infrastructure, development and industrial extractive activity, including but not limited to roads, pipelines, power lines, cell phone towers, oil and gas platforms, offshore liquefied natural gas terminals, other permanent structures, mining, hydropower development, oil and gas extraction, agriculture including intensive livestock grazing, commercial fishing, low-flying aircraft etc., preferably with highly restricted or no motorized access.
- Be characterized by a high degree of intactness: containing a large percentage of the original extent of the ecosystem, complete or near-complete native faunal and floral assemblages, retaining intact predator-prey systems, and including large mammals.
- Be of sufficient size to protect biodiversity; to maintain ecological processes and ecosystem services; to maintain ecological refugia; to buffer against the impacts of climate change; and to maintain evolutionary processes.

3.1.3 CATEGORY II NATIONAL PARK: Area managed mainly for ecosystem protection and recreation

This category refers to the large protected areas that play a role in the connectivity of the landscape/seascape. They are defined by IUCN as "large *natural or near natural areas set aside to protect large-scale ecological processes, along with the complement of species and ecosystems characteristic of the area, which also provide a foundation for environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor*

opportunities". The primary objective of protected areas in this category is to protect natural biodiversity, its underlying ecological structure and supporting environmental processes, and to promote education and recreation.

- The area should contain representative examples of major natural regions, and biological and environmental features or scenery, where native plant and animal species, habitats and biodiversity sites are of special spiritual, scientific, educational, and recreational or tourist significance.
- The composition, structure and function of biodiversity should be to a great degree in a "natural" state or have the potential to be restored to such a state, with relatively low risk of successful invasions by non-native species.

3.1.4 CATEGORY III NATURAL MONUMENTS

This category refers to small-sites that focus on one or more prominent natural features and the associated ecology, rather than on a broader ecosystem. They are defined by IUCN as "areas *set aside to protect a specific natural monument, which can be a landform, sea mount, and submarine cavern, geological feature such as a cave or even a living feature such as an ancient grove*". They are generally quite small protected areas and often have high visitor value. The primary objective of protected areas in this category is to protect specific outstanding natural features and their associated biodiversity and habitats.

Category III protected areas could include:

- Natural geological and geomorphological features: such as waterfalls, cliffs, craters, caves, fossil beds, sand dunes, rock forms, valleys and marine features such as sea mounts or coral formations;
- Culturally-influenced natural features: such as cave dwellings and ancient tracks;
- Natural-cultural sites: such as the many forms of sacred natural sites (sacred groves, springs, waterfalls, mountains, sea coves etc.) of importance to one or more faith groups;
- Cultural sites with associated ecology: where protection of a cultural site also protects significant and important biodiversity, such as archaeological/historical sites that are inextricably linked to a natural area.

3.1.5 CATEGORY IV Area Managed mainly for Conservation through Management Intervention

This category refers to areas that are managed to protect particular species or habitats. Many will need regular, active interventions to address the requirements of particular species or to maintain habitats, but this is not a requirement of the category. The primary objective of protected areas in this category is to maintain, conserve and restore species and habitats.

Category IV protected areas usually help to protect, or restore flora and fauna species of international, national or local importance; including resident or migratory fauna; and/or habitats. The size of the area varies but can often be relatively small; this is however not a distinguishing feature. As these protected areas often include fragments of an ecosystem, they may not be self-sustaining and will require regular and active management interventions to ensure the survival of specific habitats and/or to meet the requirements of particular species. A number of approaches are suitable.

- *Protection of particular species* : to protect particular target species, which will usually be under threat (e.g., one of the last remaining populations);
- *Protection of habitats* : to maintain or restore habitats, which will often be fragments of ecosystems;
- *Active management to maintain target species* : to maintain viable populations of particular species, which might include for example artificial habitat creation or maintenance (such as artificial reef creation), supplementary feeding or other active management systems;
- *Active management of natural or semi-natural ecosystems* : to maintain natural or semi-natural habitats that are either too small or too profoundly altered to be self-sustaining, e.g., if natural herbivores are absent they may need to be replaced by livestock or manual cutting; or if hydrology has been altered this may necessitate artificial drainage or irrigation.
- *Active management of culturally-defined ecosystems*: to maintain cultural management systems where these have a unique associated biodiversity. Continual intervention is needed because the ecosystem has been created or at least substantially modified by management. The *primary aim* of management is maintenance of associated biodiversity.

3.1.6 CATEGORY V Area Managed mainly for Landscape/Seascape Conservation or Recreation

These are defined by IUCN as "areas *where the interaction of people and nature over time has produced an area of distinct character with significant ecological, biological, cultural and scenic value and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values*". The primary objective of protected areas in this category is to protect and sustain important landscapes/seascapes and the associated nature conservation and other values created by interactions with humans through traditional management practices.

The following are *desirable* characteristics:

- Opportunities for recreation and tourism consistent with life style and economic activities;
- Unique or traditional social organizations, as evidenced in local customs, livelihoods and beliefs;
- Recognition by artists of all kinds and in cultural traditions (now and in the past);
- Potential for ecological and/or landscape restoration.

3.1.7 CATEGORY VI: Area Managed mainly for the Sustainable use of Natural Resources

Managed Resource Protected Area. Protected area managed mainly for the sustainable use of natural ecosystems. Area containing predominantly unmodified natural systems, managed to ensure long term protection and maintenance of biological diversity, while providing at the same time a sustainable flow of natural products and services to meet community needs

Furthermore, according to Wikipedia, the free encyclopedia the **protected areas in Tanzania** are extremely varied, ranging from sea habitats over grasslands to the top of the Kilimanjaro, the tallest mountain in Africa. About a third of the country's total area is protected to a certain degree as National Park, Game Reserve, Marine Park, Forest Reserve and the like. Most of the forest reserve mentioned fall under IUCN category VI or are not fit among these categories but fall under protected areas.

3.2 Hotspots Definition

A hotspot is a terrestrial area with at least 0.5%, or 1500 of the world's 300,000 species of vascular plants, and that has lost at least 70% of its primary vegetation. 34 hotspots have been identified globally (Coastal Forest project document 2011-2014)

3.3 Criteria for Identification and Setting priorities for Hotspots" and Sensitive Areas

The identification of ecological hotspots, regions with extraordinary high species diversities, has become an important task in conservation biology (Ulrich and Jarosła 2004). The majority of schemes to the identification of hotspots focused either on total species numbers or on numbers of endemic or threatened species (ibid). Additionally 'flagship' species, taxa like large cats, butterflies, parrots or humming birds, with high touristic or emotional value that might attract public attention were taken as surrogates for total diversity. A common tool for the identification of ecological hotspots is the use **of species–area relationships** (SARs) where species numbers are regressed against area. The conservation of such defined hotspots does not necessarily conserve total species diversity best (Ulrich and Jarosła 2004). These techniques to be of value demand good quality data sets of spatial distribution patterns. Such data are for most animal groups, in particular arthropods, still unavailable (Ulrich and Jarosła, 2004).

In particular, it is largely unknown to what extent networks of hotspots that were identified by SARs are able to preserve global or Continental biodiversity (Ulrich and Jarosła, 2004).

In the 1999 Hotspots analysis carried out by Conservation International, the Coastal Forest Mosaic, together with the adjacent Eastern Arc Mountains of Tanzania was recognized as one of the 25 Global Biodiversity "Hotspots" characterized by exceptional levels of **biological diversity and species endemism**. This Hotspot ranked first among the Global Hotspots in terms of the **number of endemic plant** and **vertebrate species per unit area** and eighth (globally) in terms of **levels of threat**. The revised (2004) version of that analysis identifies the Coastal Forests as a Hotspot in its own right. The Coastal Forest habitat mosaic is also recognized as globally important in analyses of endemic bird species

(Birdlife International) and overall animal and plant species values (WWF). Twelve Important Bird Areas (IBAs) are recognized in the Coastal Forests of Tanzania (Coastal forests project document 2011-2014**)**

3.4 Approaches and Methodologies for Protected areas Conservation

3.4.1 Bioregional Movement" and Integrated Conservation and Development Program (ICDP) approaches

Arthur *et al*, (2004) has compared a variety of approaches to protected area management, including the "Bioregional Movement" and Integrated Conservation and Development Program (ICDP) approaches. The bioregional movement grew out of a geographic focus on conservation, where it revolved around three themes.

• "***Bioregions*****:** People and ecological communities are arranged in geographically localized units. Culturally, these are defined by personal attachments to a place or a homeland, which extends to the area where the customs of others are strange and unfamiliar. Physically, they are often defined by watersheds and other landscape features."

• "***Governance***: People should be self-sufficient, organized around local markets and political control. Bioregions should be export-limited, exchanging only industrial goods unavailable in a local region. Often, this exchange takes the form of 'development poles' based on comparative advantage - specialization of different bioregions in the production of particular industrial goods. Generally, economic systems should be compatible with local resource availability."

• "***Ecosystem Preservation and Restoration***: Bioregionalists emphasize the need for preserving and restoring regional ecosystems. Decisions are made after systematic and detailed information gathering, and an evaluation of interdependent processes key to the functioning of the ecosystem."

The bioregional approach is characterized by devolution of power to local and regional institutions, constructing governance around restricted places (e.g., Parks and wildlife sanctuaries), and detailed information gathering and evaluation.
" Alternatively, the ICDP planning approach is a policy tool focusing on developing goals to provide improved livelihoods for local people as a means towards biodiversity conservation. It has been typically characterized by the following principles:

• "Conservation is a by product of social and economic benefits of people living near to a conservation area.

• Goods and services provided by natural areas are closely tied to the present and future of PAs.

• Rich tenure regimes, which make distinctions among access rights, stewardship responsibilities, and ownership rights, are established.

• Development goals are integrated into conservation planning." (Arthur *et al*, 2004).
The Integrated Conservation and Development Program (ICDP) approach is typically driven by government development needs. Furthermore, the ICDP approach originated with international NGOs that focused on biodiversity conservation. To enable them to tap into considerable funding from multilateral donors in particular (e.g., World Bank, ADB), proposals were required to show strong linkages to rural development and poverty alleviation that included economic incentives for rural communities. Hence the ICDP concept was born and funded, but with the primary objective on biodiversity conservation through economic development
According to Arthur *et al*, 2004 these two methods have several features in common, but they differ in their emphasis on planning as well as "the rigor of the definitions, measurement, and analytical methods used in their application". Some of the common characteristics are quoted here:

• *Protected Areas/Human Use Matrix*: "Planning for sustainable livelihoods and biodiversity protection require integrated planning that includes a large-scale matrix of protected areas and connected elements (e.g., corridors), transition zones with limits on human use, and intensive use zones. The intensive use zones should be made an integral part of an overall biodiversity conservation strategy, because these zones have a great potential for providing wildlife habitats in addition to protected areas both for conservation and human use."

• *Monitoring and Extension*: "Biodiversity conservation requires an intensive process of acquiring high-quality and current information on the state of natural resources. The involvement of local communities implies responsibilities to extend technical and managerial support for biodiversity monitoring and for co-management of resource use. Management plans should provide details of how this process will be maintained, to enable the collection of consistent long-term data necessary for sustainable management, and for on-going extension and collaboration needed to manage resource harvesting."

• *Economic and Social Sustainability*: "Planning should involve local communities in determining the mix of values that will be used for development decisions. Minority and majority interests should be balanced, and a diversity of values included that are biocentric (e.g., ecosystem processes) and anthropocentric (e.g., spiritual, economic, cultural values)."

• *Institutions*: "Institutions for community involvement should be strengthened and extended to enable them to co-manage and participate in development. Institutions for creating partnerships among local community, private, and public (or government) interests should also be included. These institutions should be made democratic and involve a balance of powers at all levels in order to circumvent political and/or economic domination by any particular set of interests. They should develop a mix of incentives, and particularly reward cooperative approaches (for example, through co-financing cooperative projects). Intermediary organizations (NGOs) should be given an expanded role in coordinating integrated planning and management, from conflict management and arbitration, information exchange, and coordination, to project management."
Furthermore, Arthur *et al*, 2004 mentioned that, in 2000, UNDP organized a workshop on "Integrated Conservation and Development Projects: Lessons Leaned", in Hanoi, Vietnam. The ICDP lessons learned workshop (UNDP 2000) noted several important Points:

• *Policy/Legislation*. "We need to figure out how we can work if the policies are inconsistent or not right. Also, ICDP projects have several dimensions crossing many sectors. Again, we need the bigger picture."
• *Conflict Management*. "We have to recognize that there are many different actors taking an interest in conservation and development issues. Therefore, conflict management becomes real and a very important issue to deal with."

• *Larger Vested Interests*. "We cannot oversee this important aspect. All the different vested interests need to be brought to the negotiation table when designing and implementing ICDP projects."

• *Trade-offs.* This is a "very important issue. We need to find the right balance. What does one actor want? What do other people want? One has to find an agreement and one has to give and take in the process."

• *Timeframes.* **"**There is no quick way to ICDP success. It takes a long time, and too often an ICDP project has too short a time frame."

• *Institutional Development.* This is "currently a weak point. For example, one may have ten years of project implementation. But after the project closes down, the activities collapse. Institutional development is a very big and important issue.

3.4.2 Joint Forest Management (JFM)

JFM is where local people and forest sector or District Natural Resources offices have formed an agreement over the management of a particular Forest Reserve, or a part of it. The roles and responsibilities of the community and the government authorities should be clear and there is some evidence from the Coastal Forests (and other forest types in Tanzania) that the condition of the forest within Forest Reserves under JFM agreements is better than in reserves where there is no community involvement. Within the relevant regions of Tanzania well over 100 villages are involved with JFM, covering at least 200,000 ha of reserved land.

3.4.3 Community Based Forest Management (CBFM)

CBFM is where communities manage the forest resource within their village lands, with advice and assistance from the District Forest Officer as requested. Within the relevant regions of Tanzania there are over 70 villages participating in CBFM schemes, covering over 250,000 ha of forested land. In many cases the boundaries of these CBFM forest areas are not well known, and may not be mapped.

3.5 GOVERNANCE MODEL FOR CONSERVATION UNIT/DIVISION

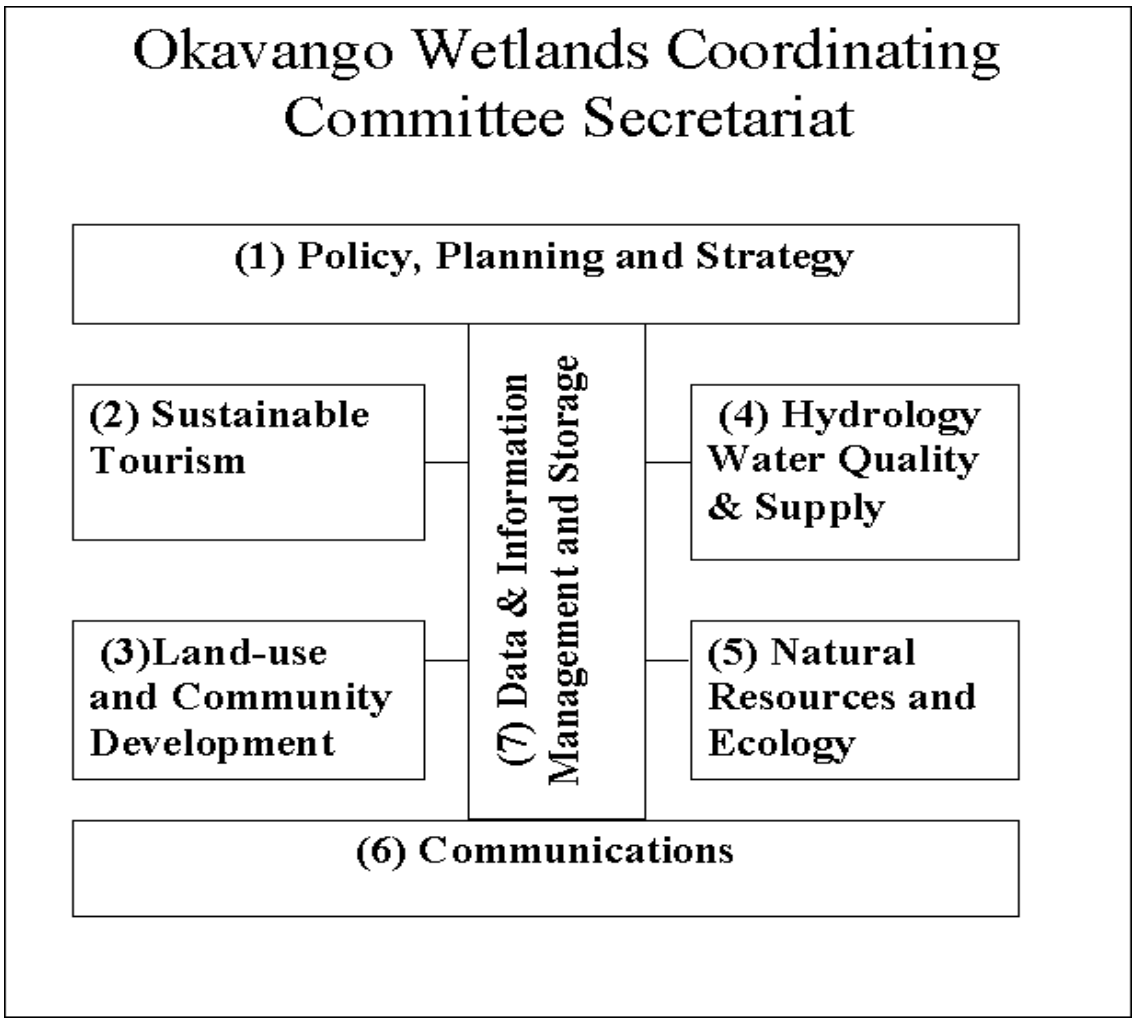
Different country have different governance model for management of protected areas depending on nature of the biodiversity of an area, community surroundings protected area and nature of the land scape and size. Thus different organization structures from different country were reviewed below:

3.5.1 Okavango Delta Ramsar Wetlands in Botswana where One of the important considerations regarding planning and management of the natural resources in the Okavango Delta is the fact that, there are already a large number of site-specific land use and management plans in place. However, what is still lacking is an overarching plan for the whole area. One fundamental aspect that is lacking for the development of such a strategic ecosystem management plan is a comprehensive biodiversity assessment of the area, including flora and other forms of life, and research on the resilience of biota to changes in water availability and quality. Related to this is the need for more specific research about key and indicator species, including the threat of introduction of alien and invasive species

Another key issue that has been identified as a requirement for developing the overall plan is a reliable model of the flow distribution pattern in the Okavango Delta. Although models have been developed in the past, a more detailed assessment is needed, and models have to be tested to determine the flow pattern under different climatic and seasonal conditions.

As tourism is the key economic driver for the area, and a major source of income for both the District and the Nation, it is important to have clear and comprehensive management prescriptions for the development of this sector. The tourism and hunting concessions within the core Ramsar area are well managed and, considered to be at optimal rates of use leaving little scope for further expansion. However, there are areas that do not yet have a proper site management plan, and there is need for overall clearer environmental guidelines and control.

There is a need to enhance existing processes, institutional arrangements and procedures according to **local needs, priorities and resources**. Therefore, sector strategies should be developed and implemented through a coordinated set of participatory and continuously improving processes of policy analysis, debate, planning, implementation, monitoring and evaluation. This is a critical element in securing a sustainable socio-economic development. Therefore, organization structure with seven sections have been developed (Ulrich and Jarosław, 2004)

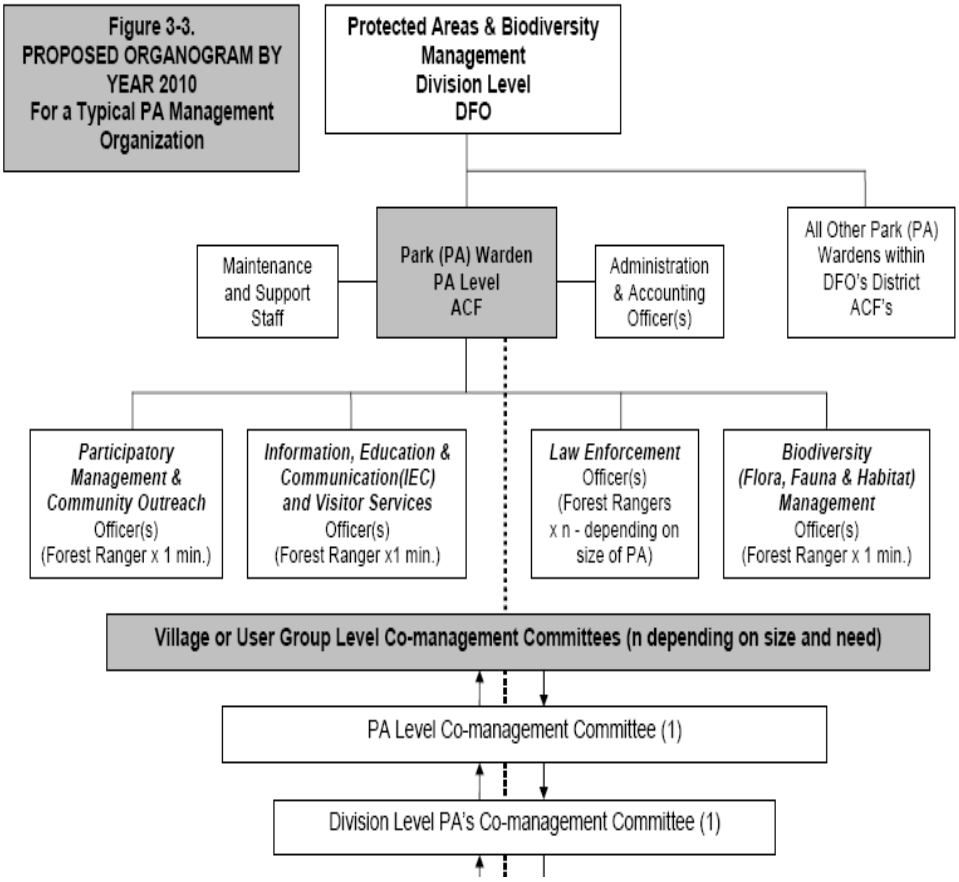


Institutional strengthening requires wide support to fill institutional capacity gaps, including redefinition of existing institutions and processes to support multi-stakeholder involvement. Sustainable development requires new skills, innovative approaches, and support for institutional restructuring.

• If counterparts and PA stakeholders are to be provided with the skills necessary to implement innovations, access to training must be more flexible. Increasing the provision of informal training, such as applied research programs, cross-visits and study tours should be stressed (Arthur *et al*, 2004)

This experience has provided practical tools and lessons learned for PA management. In some cases, it has involved enabling private institutions to become more involved in biodiversity issues. Nonetheless, as habitats and wildlife ranges extend beyond the PA boundaries, and therefore involve more people, further experience in applying specific mechanisms (e.g., conflict resolution) must also be developed.

3.5.2 ORGANIZATION STRUCTURE PAs IN BANGALA DESH



3.6 Strategies for Conservation of Biodiversity

3.6.1 **Bangladesh**

Several issues on management of the PAs have been addressed in the NBSAP. The draft NBSAP has identified not fewer than sixteen (16) Strategies for improving the country's biodiversity conservation and sustainable management. A specific strategy has been identified under *Strategy 9*; namely, "**Enhance Protected Area Management, Recognizing the Benefits of Collaboration with Local Communities in their Management**. Under this *Strategy 9* there is a recommendation to reorganize the structural organization of the Forest Department and to strengthen the capacity of the Forest Department for PA management. The NBSAP has also stressed the essential role of development partners in implementing this Strategy. Development partners have opportunities to contribute in many priority action areas (e.g., **capacity building, co-management of PAs, communication and awareness raising, developing an information base, and networking**). The NBSAP emphasizes that partnerships should be strengthened between FD and NGOs to secure livelihoods improvement and poverty

alleviation through integrating biodiversity and environmental conservation for communities living within and adjacent to the PAs (Arthur *et al*, 2004).

3.6.2 Tanzania

Government of Tanzania and WWF in the region have prioritized the Coastal Forest Eco-Region, developed an approved Conservation Strategy at national levels. Coastal closed forest patches are surrounded by a matrix of different woodland, wooded grassland and cultivation areas. Woodlands (eastern dry miombo / coastal savanna) have valuable timber trees which led to massive external logging pressure earlier this decade. This problem led to strengthening forest management, and especially local community involvement through Participatory Forest Management (PFM).

Protected Areas provide the principal method for protecting areas of significant biodiversity in Tanzania, and this is the key strategy laid out in the BSAP and National Environmental Action Plan (NEAP) documentation, and explicitly stated in recent National Forest Policy (1998) and law – such as the Tanzania Forest Act (2002). Forests in Tanzania, including Coastal Forests, have been protected through a network of Forest Reserves. The Tanzanian mainland is considering four areas as potential Forest Nature Reserves, and some 78 patches are administered by district authorities as Forest Reserves (FRs) (Coastal forest Project document 2011-2014**).**

3.6.3 National Biodiversity Strategy of Bosnia and Herzegovina

A highly complex document of *Strategy of Bosnia and Herzegovina and Action Plan for Biodiversity and Landscape's Protection (*2008-2015*)* contains up to date and complete assessment of state and level of biodiversity, geographic distribution of bioresources, as well as the identified both current and potential negative tendencies. The document integrates all sectors at local level and enables development of functional connections with international bodies. Hence, in the document are recognizable attributes of national strategy and those of document which is important on regional and global scale. It is also a component in the process of strengthening and democratization of both public and ecologic awareness.
NBSAP of Bosnia and Herzegovina identified three strategic mainstreams in the field of nature management:

A. Decrease of biodiversity loss in Bosnia and Herzegovina
B. Set up of conservation system and sustainable use of biodiversity in Bosnia and Herzegovina
C. Decrease of pressures on biodiversity in Bosnia and Herzegovina (Sulejman and Goran, 2009).
Furthermore, Ervin *et al*, 2010 mentioned the below strategies for the conservation of biodiversity and protected areas as whole.
Changing protection levels: Strategies to change protection levels may mean creating new protected areas, fostering the creation of other conserved areas, and/or creating new corridors and buffer zones. Strategies in this category therefore include expanding existing protected areas and other conserved areas, reconfiguring them to better protect key habitats and linkages, and changing the designation to a stricter form of protection.

Changing management practices: Strategies to change management practices include managing species within protected areas to improve connectivity, improving habitat, and/or improving ecological functions and processes. Examples of strategies that use management practices to improve connectivity include improving forest management (through voluntary best practices, certification, logger education) to avoiding areas of critical importance for species connectivity; improving river functioning through improved flow management; and improving grassland health through prescribed burning techniques and improved grazing practices.

Change laws and policies: Strategies to change laws and policies include, for example, changes to policies relating to any of the natural resource sectors (e.g., land use planning, invasive species), as well as specific protected area laws and policies. This set of strategies may also entail the creation of new laws and policies (e.g., a new land tenure law), and the elimination of inappropriate laws and policies, such as perverse incentives and conflicting land tenure laws.

Change market incentives, distortions and externalities: Strategies to change market incentives include the creation of market-based incentives to improve management, such as promoting green taxes and subsidies (and removing subsidies on fishing and agriculture that promote environmentally destructive practices); internalizing externalities; payments for ecosystem services schemes whereby ecosystem managers are rewarded for sustainable management; carbon trading and REDD and voluntary incentives such as the creation of biodiversity offsets.

Changing sectoral practices: Strategies to change sectoral practices are as varied as the relevant sectors themselves. These may include, for example, strategies to foster appropriate site and configuration of infrastructure (e.g., mining operations, roads, intensive forest plantations), as well as strategies to discourage negative policies and practices within natural resource sectors (e.g., discourage heavy pesticide use near key freshwater areas).

Changing the enabling environment: Strategies to change the enabling environment include improving national leadership, improving coordination and communication among sectors, improving the legal and judiciary environment, especially enforcement, and promoting public awareness. Specific actions could include public campaigns, lobbying, advocacy and capacity building.

Changing the physical environment: Strategies to change the physical environment primarily include strategies to restore species and habitats within new or existing protected areas, corridors of buffer zones. Specific actions could include river restoration through stream bed modification, forest restoration through reforestation efforts, artificial habitat creation such as coral reef beds, and removal of invasive species (Ervin, *et al* 2010)

3.7 Roles and Responsibilities of the Different Institutions and Partners in Planning, Management and Monitoring;

One of the primary objectives of the ICDP approach is to identify how local communities, on the one hand, and staff from the PA protection and development agencies, on the other,

can cooperatively clarify and manage the boundary and zones of a PAs. Co-management thus, requires sharing of power among PA staff, local governments and affected communities. In this case the sharing of power and responsibilities lies primarily between PA protection staff and villagers adjacent to and utilizing land and forest resources within the PA zones.

Community empowerment involves multi-stakeholder participation. Involvement of the public, local communities or "stakeholders" in decision-making is called participation.

An important lesson to be learned from this process is that not all systems of participation are the same. Consequently, this requires proponents of participation to be very specific about what will be required of participants. The correct process for participation is situation and context specific; there is no one right or wrong way for all situations. In some circumstances, participation approaches based exclusively on information gathering will be appropriate, while in other instances, multi-stakeholder processes may be required. To date, most public participation processes for many protected area ICDP projects have been applied in the form of stage 2 or 3 consultative participation (Arthur *et al*, 2004).

From the Zanzibar long term forest plan several roles have been mentioned to be carried out by department responsible for forestry and other stakeholders in relation to protected areas as presented below:

- **Formulation of Policy, Legislation and Regulation**

The central government is the key agent in the formulation of forestry related policies, legislation and regulations. Ministers responsible for the forestry and local authorities are also responsible for setting regulations, bylaws and agreements to manage local forest resources sustainably. International communities such as United Nation agencies are responsible for setting out conventions, treaties, and protocols to guide countries in the management of national and regional forestry related resources. Individual countries are then obliged to ratify and internalize these international agendas.

- **Laws Enforcement**

The department of forestry, police force, judiciary, Director of public prosecution, civil societies, local authorities and communities are responsible for enforcement and general execution of the forest laws.

- **Sectoral Planning and Budgeting**

The Ministry of Finance and Economic Affairs, and the Ministry of Agriculture, and natural resources are responsible for planning and budgeting for forest sector development including PAs. The international community supports the government in development issues related to forestry management. Furthermore, there is community support in participatory planning and management of forest resources.

- **Information System**

Dissemination and sharing of information relating to forest resources management is an obligation of all stakeholders. However, Central Government particularly national media holds primary responsibilities to ensure proper flow of reliable news and information to all parties.

3.8 International and Regional Best Practice in the Institutional Structuring of Government Protected Area Agencies

This section provides international experiences or lessons learned from implementing Community development and livelihood improvement initiatives *vis-à-vis* protected area Management and biodiversity conservation from different areas of the world. These include:

3.8.1 Relevant international lessons from Bangladesh protected area system which focuses on stakeholder participation and collaborative management or "co-management". In Bangladesh effort were made on establishment of Integrated Rural Development Projects (IRDP), Integrated Conservation and Development Projects (ICDP), Integrated Coastal Zone Management Projects (ICZP) and other protected area management (Arthur *.et al* ., 2004).The most best practice that can be copied from Bangladesh protected area system include:

• Strengthening PA protection through law enforcement only is not sufficient without addressing the underlying socio-economic reasons for encroachment.
• It is important to identify all stakeholders, particularly at the local level, and they must be involved in the planning and implementation process from project inception. Creating awareness and interest among the stakeholders is of paramount importance.
• Community participation and empowerment is a time-consuming process. Without the investment of time, local people can only be passive observers and not active collaborators.
• A process must be developed to analyze and describe all laws and regulations relevant to protected area management, wildlife conservation and overall environmental protection.
• Institutional strengthening requires wide support to fill institutional capacity gaps, including redefinition of existing institutions and processes to support multi-stakeholder involvement. There is little theoretical or experiential evidence to demonstrate that current institutions, which were designed to support economic growth based on natural resources exploitation, will support sustainable development. Sustainable development requires new skills, innovative approaches, and support for institutional restructuring (Arthur et al, 2004).

3.8.2. The Royal Society for the Conservation of Nature (RSCN):

Established in 1966, with a mission to protect and manage the natural resources of Jordan. Responsibilities include setting up protected areas to safeguard wildlife and scenic areas, breeding endangered species to save them from extinction, enforcing government laws for the protection of wildlife, controlling of illegal hunting, raising awareness of environmental issues through education programmes, and promoting the sustainable use of natural resources. RSCN established six protected areas and over nine hundred Nature Conservation Clubs in schools. RSCN has pioneered in managing wildlife areas and is in-charge of the protection and management of a RAMSAR site in Jordan

3.8.3. Land and Resource Use Conflicts

The increasing demands of the fast growing district population (3.9% per annum) Botswana, the changes in economic structure and the tremendous expansion of the tourism sector have augmented the pressure on the natural resources of the Okavango Delta and the

sustainable level of off take is often disputed. The consequences of human induced environmental changes like pollution, alteration in the flow regime and destruction of habitat for rare and endangered species are not monitored and fully understood. Research data on the magnitude of the actual resource off-take, sustainability and reproduction level of the natural resources are not available. For planning of the sustainable use of the natural resources of the Okavango Delta the establishment of carrying capacity guidelines, the setting up of user restrictions and the establishment of zoning recommendations are crucial.

A series of constraints have been identified by the different stakeholder groups, which are hampering the effective implementation of the CBNRM strategy. The lack of capacity to implement the new strategy, the lack of mutual understanding between stakeholders and the unclear definition of the roles and functions of new established institutions are some of the examples. As the majority of the communities in Ngamiland have not been empowered under the CBNRM strategy unequal chances have been created resulting in political friction and lack of commitment to the policy by non-beneficiaries **(Swiss Grant for Africa 2001*)***

3.8.4 Forests in the Dana Nature Reserve, Jordan

In situ **management:** The Dana protected area is managed through cooperation with local communities, including particularly Dana village. Projects have helped to develop ecotourism, including production of a range of organic herbs and locally made products for sale to visitors.
Both guest house and campsite facilities are available. A key aspect of the management agreement is reduction in the number of goats grazing in Dana, which has resulted in important woodland regeneration throughout much of the area.

3.8.5. The Development of CBFM in Tanzania

Duru Haitemba Forest

The pioneering development of CBFM in Tanzania is traced to the case of the Duru-Haitemba forest in Babati district that had been earmarked for reservation in 1990/91. The restricted access to forests under state ownership, had led communities of Duru-Haitemba to oppose gazettement of the 9,000 ha forest dominated by *Brachystegia* and *Julbernadia species*. At the time, only 3,000 ha were covered with forests, the rest of the area was degraded through non-sustainable use. The people resented gazettement of the forest as a state forest reserve preferring to gazette it themselves. After protracted negotiations with the government, gazettement was abandoned in favour of assisting each of the eight villages namely Duru, Riroda, Endagwe, Hoshan, Endanachan, Gidas, Bubu and Ayasanda to reserve its forest under the District Council. Encouraged by the handing over of forests into their hands, the eight villages around Duru-Haitemba mobilized themselves into an assembly of members. Each village constituted a management institution of the part of the forest reserve adjacent to it, surveyed and reset the forest boundaries with the assistance of FBD and a Sida-funded project under its Land Management Programme (LAMP) which provided technical inputs. Each forest was then zoned according to its land use potential, namely a crop use zone, grazing zone and a core protected area excluded from use. A manual was later prepared to assist local forest officials and the community to draw up

maps, develop work plans and initiate forest operations. The eight villages have obtained title deeds and prior to handing over the Duru-Haitemba forest to the community; the villagers were overexploiting the forest as fast as possible, ahead of its gazettement. It is noteworthy that by establishing secure ownership rights and providing the community with authority and management responsibility, the then prevailing trend of forest degradation was reversed and villagers soon began implementing the management plans and enforcing rules prohibiting uncontrolled use.(**Ministry of Natural Resources and Tourism Forestry and Beekeeping 1993 – 2009)**

3.8.6. The Development of JFM in Tanzania

JFM was conceived largely as a means to secure local support for forest conservation and followed similar strategies in other parts of the world such as India and Nepal. Gologolo and Kipumbwi Forest Reserves in Tanga Region and Udzungwa Forest Reserve in Iringa Region were some of the early initiatives of JFM development. These initiatives were extended to catchment forests in Tanga, Arusha, Morogoro and Kilimamjaro regions and mangroves along Tanzania"s coast from Tanga to Mtwara as part of implementation of the Management of Natural Resources Programme (MNRP). The goal of MNRP was: Natural resources contributed on sustainable basis towards reduced income poverty, vulnerability amongst the poorest groups and improved quality of life and social well-being in Tanzania." The objective was: to increased benefits to rural communities based on sustainable natural resource management in Tanzania (**Ministry of Natural Resources and Tourism Forestry and Beekeeping1993 – 2009).**

3.9 Arrangements for Conservation Unit/Division in Management, and their Efficacy in the FPAS context;

According to Arther et al., (2004) PA system is presented according to: (i.) institutional organization with a focus on management support systems, and (ii.) training and capacity building or human resource development. The elements of a well-functioning PA Management System include the following, divided between two main categories:
Arther et al., (2004) mentioned that, the elements of a well-functioning PA Management System include the following, divided between two main categories:

Institutional Organization: Management Support Systems

- Organizational Management
- Information Management Technology
- Spatial Data Management
- Financial Organizational Systems
- Management Planning and Implementation
- Institutional Orientation to Co-management
- Legal Support
- Law Enforcement
- Information, Education and Communication and Visitor Services
- Research
- Monitoring and Evaluation
- Collaborative Conservation Planning
- Public-Private Partnerships

• Sustainable Financing

Training and Capacity Building : Human Resource Development

• Staffing
• Training Facilities and Capacity
• Training for Professional Specialist Skills
• Integrated Training for On-site Protected Area Field Staff
• Integrated Training for Local Communities and other Stakeholders

3.10 Policy and Legislative Context for the Management of Biodiversity.

One of the most critical steps in preserving biological communities is the establishment of legally designated protected areas. Protected areas can be established in variety of ways, but the two most common mechanisms are government actions and land purchase by private individuals and conservation organizations. Government can set land for protected areas and enact laws that allow varying degrees of commercial resource use, traditional use by local people and recreational use in those areas. Protected areas can also established by traditional society seeking to maintain their culture. (Primark, 2000)

On Zanzibar there are two relevant laws that relate to the implementation of the management of protected areas: The Environmental Management for Sustainable Development Act, 1996. The Forest Resources Management and Conservation Act No 10 of 1996. These laws provide the basis for developing a network of protected areas, and in recent years there have been important additions to the protected area network of Zanzibar, including the Jozani National Park (2004) on Unguja.

3.10.1 The Zanzibar National Forest Policy

The 1996 Forestry Policy is the first formal forest policy declaration in Zanzibar. The general goal of the Zanzibar's Forest Policy, is derived from the principles of sustainability and welfare of the people. Its goal is to "**Protect, conserve and develop forest resources for social, economic and environmental benefit of the present and future generations of the people of Zanzibar".**

The Specific Goals of Zanzibar's Forest Policy shall be as follows;

- **Social goal**: Strengthen the role of forestry in alleviating poverty and increasing equity in resource management and utilization.
- **Economic goal**: Strengthen the role of forest resources in promoting economic development, in meeting demand for forest product, in creating income and increasing national revenues and efficiency.
- **Environmental goal**: Protect and conserve forest resources including wildlife and flora, and enhance the role of forest resources in maintaining soil and water conservation and other environmental benefits.

ZNFP encouraging community forestry through increase the supply of needed forest – products and improve rural incomes, by promoting and supporting, at community level, sustainable and participatory forest activities. Review shows that both ZNFP recognizing and put more efforts in promoting forest development initiatives towards sustainable livelihood through community rather individuals basis (Pereira, 2019).

3.10.2 The National Environmental Policy

The policy recognizes that, environmental management is not the responsibility of a single government department but places the role of coordination of environmental matters to the Department of Environment (DoE). The Department of the Environment is governed by the Environmental Policy of 1992, which is currently under review. The aim of the policy is stated as to ensure that the economic development is accompanied by proper environmental management, so that Zanzibar's natural heritage is passed on undiminished to future generations. In particular, the policy seeks to:

- Ensure the maintenance of basic ecological processes upon which all productivity and regeneration, on land and in the sea, depend.
- Promote the sustainable use of renewable resources and rational use of non-renewable resources, and to minimize irrational use, contamination or destruction of resources.
- Preserve the biological diversity, cultural richness and natural beauty of Zanzibar's lands and seas.
- Ensure that the quality of life of the people of Zanzibar, present and future, is not harmed by destruction, degradation or pollution of their environment.

The environment policy also recognizes the essential link between sustainable development and sound environmental management. Likewise, the policy rightfully recognizes the special limitations and vulnerability of island ecosystems, which stresses the need for cooperation between all sectors of Government and civil society and for the commitment by all sectors to the agreed environmental policy. In order to show the oversight powers of the department of environment, the policy articulates that all sectoral policies should be fully compatible with the Environmental Policy. The policy further discusses the coastal forests and biodiversity management issues and set forth statements and strategies for implementation. Nonetheless, this policy is under review (Pereira 2010).

3.10.3 The Fisheries Policy

The policy sets out the mechanism for which it would work with partners for a common goal. The policy vows to establish harmony between institutions involved in using coastal zone areas noting that coastal resources cannot be managed in isolation and that institutional linkages are important to the diversity and ecological interdependencies of coastal resources.

The policy asserts that the most promising way to contain social and environmental impacts is to adopt an integrated approach to coastal resource management. In order to have integrated approach in coastal resources management, the Government undertakes to facilitate co-management of coastal zone areas to ensure sound management practices and sustainable coastal environment and sets under the Fisheries policy the following strategies:

- Impart environmental knowledge to the local communities.
- Adopt practical linkages and co-ordination in an integrated approach to coastal management by institutions involved in coastal zone areas.
- Institute management plans, which will cater for the multiple use of the coastal zone ecosystems.
- Adopt contingency planning to arrest disastrous incidences.

- Respect zoning on co-existing disciplines operating on the coastal zone areas (Pereira 2010)

3.10.4 The Tourism Policy

Tourism policy greatly emphasizes on the environmental conservation and protection and, rational and efficient utilization of the natural resources. The policy also envisions that sustainable tourism development shall be reached if proper environmental management will accompany the business so that Zanzibar natural resources and heritage are passed on to the future generations. Ecotourism is depicted as the way forward, in which case natural resources are the base (Pereira, 2010).

The policy strategies on environment include:-

- Enforcing and implementing Environmental Impact Assessment, Environmental Statement where development takes place.
- Protect and conserve fragile ecological systems.

3.10.5 Land Use

The Zanzibar National Land-use Plan provides background information on population, human settlement and community resources, and provides planning recommendations for the different sectors; agriculture, livestock, forestry, industry, tourism and coastal and marine resources management. The plan identifies areas for afforestation and forest conservation purposes (Pereira 2010).

3.10.6 Energy Policy

The main objective of the Energy Policy is to meet the energy needs of the Zanzibar population for social and economical development in an environmentally sustainable manner. The overall objectives entail:

- Increase the energy efficiency within the energy sector of Zanzibar;
- Increase the supply of energy from indigenous renewable energy sources;
- Increase the reliability, affordability and independence of modern energy supply in Zanzibar;
- Implement a regulatory regime for the energy sector in Zanzibar to act as a coherent and coordinated framework for all development efforts within the sector
- Achieve free market principles within the energy sector, with only well founded transparent regulatory interventions
- Involve all main stakeholders in coordinated actions while considering related documents regarding the future social and economic development and poverty reduction in Zanzibar.

The policy Specific Objective aims to **s**upport the energy demand within the growth sectors of the economy in Zanzibar in particular, as specified in the Zanzibar Strategy for Growth and Reduction of Poverty (Pereira, 2010).

3.10.7 The National Water Policy (2004)

The new policy on Water Development emphasizes the protection of catchment and watershed areas all over Zanzibar. The policy advocates for the adequate supply of quality and safe water and its rational use. The policy exhorts ensuring that development planning takes proper account on the availability of water resources and encourages rainwater harvesting; recycling and artificial recharge practices (Pereira, 2010).

3.10.8 The Agricultural sector Policy

The Agricultural Sectoral Policy and Strategic Plan recognize the importance of forests in agricultural productivity. The policy acknowledges further that the major limitation facing the agricultural sector in achieving enhanced agricultural productivities in Zanzibar is the erosion of natural resources base. Subsequently, the Strategic Plan emphasizes on sustainable approach to increase forest plantation production and preserving natural forests and biodiversity.

3.10.9 International Commitments

A number of National polices and laws have been introduced to change forestry and governance practices. Zanzibar through the United Republic of Tanzania is a signatory a number of legally binding international instruments that lay obligations to Forest Policy and Trade. These include:

- East African Community Protocol on Environment and Natural Resources Management,
- Conservation of Biological Diversity (CBD),
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES),
- Ramsar Convention, United Nations Framework Convention on Climatic Changes(UNFCCC) and the Kyoto Protocol,
- The Lusaka Agreement on Co-operative Enforcement Operations Directed at Illegal Trade in Wildlife Fauna and Fauna
  Moreover, Tanzania is also a party to several legally non binding international instruments related to forestry including:
- United Nations Forum on Forest (UNFF)
- The Millennium Development Goals (MDGs) especially 1 and 7 on reducing absolute poverty. SADC Policy and Strategy for Environment and Sustainable Development (Pereira, 2010).

3.11 Management Tools

Protected areas, such as national parks and nature reserves, are essential for biodiversity conservation. But they are only one instrument among several for the responsible management of the forest resource. They need to be supplemented and complemented with other types of forest management, including other kinds of protection that fall outside the IUCN definition of a protected area, for example safeguarding environmental services such

as watershed protection, or creating temporary protection through time-limited conservation payments (Primark, 2000).
One of the main reasons for developing the IUCN category system was to help clarify the intentions of governments and others in designating land (or water) for protection. The categories therefore, provide an international framework, which interprets and classifies national protected areas in a consistent manner – thereby providing a "common language" for all involved in protected area planning and management. IUCN's advice is that national protected area agencies should first decide how a particular area should be managed, if necessary using their own national system of protected area types, and only then assign each type to one of the IUCN categories. In that sense, the category system as devised in 1994 was intended to be more indicative rather than prescriptive.
This means that candidate protected areas are assigned an IUCN category according to the purposes set out in legislation, management plans or other means (Nigel and Adrian, 2006).

3.11.1 Developing Implementation Guidelines, Tools and Models

Strong technical capacity and the injection of ideas from other areas meant that many projects were able to develop strong field implementation models and tools. Following successful field implementation and the revision of the forest policy, the LAMP project was able to support the FBD to develop officially sanctioned CBFM Guidelines in Tanzania.

3.11.2 Building a Cadre of Qualified and Experienced Tanzanian Facilitators

Focused project support through area based projects and concentrated investment in capacity building in a given area has over the past decade produced a cadre of middle level field staff with an understanding and knowledge of PFM. Many of these staff were field facilitators and worked very much at the interface of projects with local communities. These staff has played a crucial role in facilitating PFM processes following the completion of their respective projects, and increasingly have been involved in national discussions around PFM models, guidelines and regulations. (Ministry of Natural Resources and Tourism Forestry and Beekeeping 1993 – 2009)

3.11.3 Forest Protected for Spiritual reasons: Sacred Groves in Ghana

Despite high levels of deforestation, Ghana contains many areas of forest set aside by traditional communities – variously called sacred groves, or community forests – that remain well preserved although outside the official system of protected areas. Local people still consider them to have important spiritual values. Some of these forests are designated burial grounds for tribal chiefs but in other cases they have been conserved also to maintain watershed values or wild species that are valuable to the community.
Most of Ghana's remaining sacred forests are not protected areas, although many could in theory become so if their traditional owners and managers so wished. Although there is a general recognition that spiritual sites can benefit from also being protected areas and perhaps a feeling that IUCN should encourage these links, not all sacred forests meet the criteria of a Forest Protected Area. Furthermore, even where sacred forests meet all the criteria necessary to be declared a protected area, not all communities wish to have any associated formal designations and restrictions on their land. (IUCN, 2006).

3.12 Strength, Opportunities, Threats and Weakness

Ulrich and Jaroslaw (2004) mentioned several strengths, weaknesses, opportunities and threats that existing in management of protected areas as well as conservation of biodiversity as mentioned below

Strengths

- Favorable level of existing scientific knowledge and experience
- Willingness to accept the new scientific trends
- Easy communication

Weaknesses

- Limited awareness of stakeholders and population on climate change adaptation;
- Insufficient and limited funding for adaptation study;
- Incoherence and lack of harmonization of strategic and development-related documents (in the sector of forestry, agriculture and water management, irrigation and electricity cable lines) with the field of managing the biodiversity;
- Lack of defined social-related researches, with the aim to resolving current problems in the field of biodiversity and implementation of relevant international conventions and directives;
- Very low public awareness of the importance of biological diversity for the purpose of preserving fundamental values of the environment, and especially in regulating climate changes;
- Extremely low number of scientists and experts, as well as of institutions dealing with biodiversity and its maintenance;
- Lack of financial means and funds for scientific research in the field of climate change and biodiversity, as well as the environment as a whole;

Opportunities

- Creation of the national inventory system and estimates of changes of environmental components;
- Development and implementation of methods for assessment of impacts, sensitivity and vulnerability on biodiversity with respects to climate change;
- Financial assistance for staff to take advantage international institutions training opportunities related to: biodiversity, climate change impacts studies and projections, vulnerability, adaptations and mitigation assessment; national GHG emission inventory preparation and reporting;
- Support participation of stakeholders - Strengthen relevant and key research institutions and NGOs in conservation of biodiversity
- Improvement of knowledge about global climate changes, especially about the anthropogenic impacts on global changes, and their potential impact on the biodiversity
- Develop and conduct a sensitivity and vulnerability analysis of ecosystems (including
- Evaluate existing ambient monitoring program to determinate whether additional biodiversity monitoring will be needed as new climate change information emerges;

- Provide outreach and update the stakeholders and national adaption teams with relevant information through appropriate seminars and workshops and various media sources about the impact of climate change to forest health and forest;

Threats:

- Habitats conversion and destruction of ecosystems
- Unsustainable use of resources
- Logging, hunting and poaching
- Degradation and fragmentation of ecosystems
- Disturbance in wilderness
- Unsustainable (Un researched) gathering of economically important species
- Uncontrolled use of pesticides and fertilizers
- Uncontrolled introduction of alien species
- Construction of full infrastructure:
- Uncontrolled urbanization and ruralisition;
- Increasing risk of climate extreme, erosions, loosing a swamp soil, and also dryness and land degradation;

4.0 RESULTS

The respondents were mainly divided into three main categories for easy analysis of the information, these are:

4 Government Institutions

The first categories of respondents involved in this study were governmental Institutions. Five institutions having 21 respondents were interviewed. These Departments are Forestry and Non Renewable Resources (14 respondents), Department of Environment (3) respondents, Department of Irrigation (one respondent), Department of Fisheries (one respondent) and Zanzibar Water Authority (one respondents).

Out of 21 respondents from government instructions 18 respondents were males while three respondents were females. Out of 21 respondents from this group only eight respondents said they knows the structure of the existing conservation section within the department of Forestry and Non renewable resources and the large number of thirteen respondents said they do not knows the structure.

Four respondents out of 21 said that, the existing structural organization satisfy the needs of management of protected areas, 12 respondents said that, the structure do not satisfy the needs of protecting the PAs, while five respondents said that they are not sure if it satisfy the needs. This justifies the needs of participatory management from early stages even during the formulation of the conservation section.

How does the new Organization structure should look like?

Mainly the general opinion of respondents from government institutions mentioned that:

- The conservation structure should include all sub sections dealing with conservation i.e. terrestrial PAs, Mangroves Forests and other wetlands and wildlife. In addition ecotourism and conservation education should be taken into account in this section

- The structure should includes community aspects in all stages from planning to the implantation of relevant management plans
- Involve all stakeholders in management of PAs with their roles clearly stipulated
- The structure should have a conservation section heads with two assistants one in Unguja and the second one in Pemba
- Inter and intra sectoral communication is necessary.

Roles of stake holders

Concerning their roles as stakeholders of the conservation section, the members of from Governmental Institutions group mentions 14 roles that they have to perform as mentioned in the table 1 below:

Roles	**Responsible institutions**
Follow up and monitoring	All five institutions depending on where is carried out.
Provision of conservation education	All five institutions depending on where is carried out.
Conducts biodiversity surveys	DFNRNR, DoE
Conducts research in PAs,	DFNRNR, DoE and ZAWA
Mapping and zonation of biodiversity areas	DFNRNR
Planting and conserving trees in catchments areas	DFNRNR and ZAWA
Establishment of Management plans	DFNRNR with involvement of other institutions
Management of PAs	DFNRNR
Policy and laws formulation and review and implementation	DFNRNR with involvement of other institutions
Create alternative income generation for people around PAs	All five institutions depending on where is carried out
Involve community around PAs	DFNRNR
Fund raising	All five institutions depending on where is carried out
Finding new areas with biodiversity values and include in PAs	DFNRNR

Procedure for Creation of new Protected Area

Four criteria have been mentioned by respondents in this group as criteria to be taken into accounts when an area is to be included in protected areas.

- Carry out procedure as stipulated out in the conservation and management Act no. 10 of 1996 (mapping of the areas, public notice, meetings radio announcement etc.)
- All stakeholders should be involved and their opinions be considered
- Public awareness should be carried out to the general public to on the importance of the areas to be gazzetted
- Biodiversity and Socio-economic surveys should be carried out

Criteria for the Selection of Areas in Protected Areas inclusion

According to respondents from government institution four criteria have to be followed as criteria in establishing protected areas

- Presence of endemic and rare plants species
- Areas with high forest
- The importance of the areas including biodiversity, economic and cultural values

Weaknesses of Conservation Section of DFNRNR of Zanzibar

Several weaknesses have been mentioned in this group of respondents, these include:

- Staff do not knows their duties well
- Few staff within the conservation units both technical and supporting staff
- The conservation section have been splited into sub units such as mangroves, Wildlife and terrestrial Protected areas which weakens the performance
- Low level of follow up and monitoring
- Low level of enforcement for illegal matters within protected areas
- Lack of proper participatory mechanisms in planning, implementation and setting of priorities within the conservation sections
- Few alternatives for community needs from the protected areas.
- Lack of sustainability of most of projects initiated earlier
- Benefit from PAs are not well distributed in all of PAs
- Illegally harvesting of valuable species of both flora and fauna
- Low level of collaboration with conservation units out side country
- Few income generating activity diversification to support the community around protected areas
- Financial problems
- Low payment and lack of incentives for staff working in the section

Corrective Measure for the Weaknesses

The respondents mentioned that the weaknesses of the conservation section can be resolved by carrying out the following measures**:**

- Provision of conservation education to the community around PAs and other stakeholders
- New employment (recruitment) with skills on conservation and ne emerging issues like climate change should be undertaken
- Improve villages conservation committees or patrolling of PAs
- Commitment of all stakeholders
- Promotion of IGAs around PAs
- Incentive should be provided for staff who do good job in PAs management
- Fund raising should be given priority for running PAs more effectives

Opportunities of Zanzibar Protected Areas

From Government institution group of respondents, here under are the opportunities which were mentioned and can be utilized within the protected areas of Zanzibar

- Tourism improvement (including cultural and community tourism) and increase foreign exchange
- Benefit sharing from revenues collected from protected areas
- Conducting research in Protected areas
- Climate regulation
- Act as cultural and spiritual monuments
- Rehabilitation of PAs
- Collaboration and building partnerships with international and external bodies with the same interests
- Sick fund from partners in development to improve capacity of Zanzibar PAs
- Use of PAs for education purposes
- Initiate and practice payment for environmental services (PES)
- Initiate more community organizations and use them for effective management of PAs
- Promotion of existing staff and recruiting new ones

Threats facing Zanzibar protected areas

In this group, several threats have been mentioned facing the PAs as mentioned here under:

- Policy contradiction between PA and other development policies
- Population increase
- Poverty to majority of community members around the protected areas
- Climate changes (extremes temperature and prolonged drought periods, sea water intrusion)
- Forests fire
- Emerging of large number of power saws
- Illegally harvesting of forests resources from PAs
- Use of protected areas land for other investments and development activities like hotels and roads constructions
- Having no buffer zones in some of PAs
- Encroachments of PAs for agriculture and others uses

Strength of Zanzibar protected areas

The main strength mentioned in the group of governmental institutions includes:

- Having laws and policies governing protected PAs
- Human resources with knowledge on forestry, surveys research etc
- Willingness of the community in conservation of protected areas
- Having management agreement with communities
- Presence of management and Long term plans
- Presence of VCCs, NGOs, and CBOs dealing with conservation of biodiversity
- Having experienced forest guards in some of PAs like Jozani Ngezi and Kiwengwa
- Support from development partners

Strategies for Management of Zanzibar Protected Areas

The main strategies mentioned for the management of the protected areas from this group are:

- Participatory managements of PAs
- Law enforcement through joint patrolling
- Provision of conservation education and awareness
- Monitoring and evaluation
- Fund raising to support PAs
- Research
- Practicing alternative income generation activities in the protected areas such as ecotourism

Stakeholders of the Zanzibar protected areas

The main stakeholders of the protected areas as per respondents from the group of government institutions include:

- DFNRNR
- Communities around protected areas and other from near by towns
- Department of Environment
- Department of Irrigation
- ZAWA
- ZIPA
- Partners in Development
- NGOs related to conservation and environment.
- Tourism Commission, Tour operators and Tourists
- Conservation clubs
- Local , Districts and regional authorities
- Enforcements bodies

Responsibilities of the Stakeholders towards Protected Areas

Role	Institution responsible
Provision of Conservation education to the public	DFNRNR, DOE, ZAWA, Irrigation, Fisheries, NGOs
Management of PAs	All stakeholders depending on the values of PA and ecosystems
Conducting patrols	DFNRNR, NGOS
Coordinate other stakeholders to have joint team in PAs conservation	DFNRNR
Low enforcement	DFNRNR, DoE
Collaborates with external bodies	DFNRNR, DoE
Activities implementation in PAs	DFNRNR, NGOs
Revenues collection	DFNRNR
Promotion of Ecotourism	DFNRNR , Commission of tourism , Tour operators

Research	All stakeholders depending on the values of PA and ecosystems
Conservation of water sources in PAs	DFNRNR ZAWA DoE
Encourage community participation in conservation	DFNRNR, NGOs

Management Tools for Zanzibar Protected Areas

The main management tools mentioned by the respondents from this group are:

- Having proper and enough working tools such as motor vehicles, motor bikes, bicycles, computer and finance
- Reliable policy and laws
- Plans for PAs (long term and station management plans)
- Timely reporting
- Law enforcement
- Medias
- By laws within the villages
- Use of spirituals and taboos
- Monitoring and evaluation
- COFMAs

Legal status of Protected areas of Zanzibar

Concerning the legal status existing within Zanzibar protected eight respondents said that the status satisfy the needs, five respondents said that, it does not satisfy the needs and some upgrading should be considered while the remaining eight respondents said they are not sure about legal status grades existing within protected areas. What they know is protected areas are government property that are not allowed for cutting and hunting.

4.2 Non Governmental Organizations (NGOs)

The second categories of respondents involved in this study are Non Governmental Organization. Seven respondents representing five organizations have been interviewed. These NGOs are Ngezi- Vumawimbi Natural Resources Conservation Organization (NGENARECO, one member), SEDCA two members, JECA two members, Vitongoji Environmental Conservation Association (VECA one member) and Jumumi one member.
Out seven members from NGOs, six were males and one female. In this group six respondents do not know the structural organization of the conservation section within the department of Forestry and Non renewable Resources while only one member knows it as in the first group. Three out of seven said that, the existing structural organization do not satisfy the needs of management of protected areas, four respondents said they do not know if the structure satisfy the needs of protecting the PAs, while no one said that it satisfy the needs.
This justifies the needs of participatory management from early stages even during the formulation of the conservation section.

How does the new Organization Structure should look like?

Mainly the general opinion of respondents from NGOs mentioned that, NGOs related to conservation should be fully involved in the organization structure of conservation unity within DFNRNR since they are part of the implementers of the conservation programs and activities.

Roles of Stakeholders

Concerning their roles as Stakeholders of the conservation section, the members of from NGOs group mentions eight roles that they have to perform.

- Planning and facilitating forests patrol together with villages conservation committees.
- Mobilizing communities towards conservation of biodiversity and their ecosystems.
- Provision of conservation awareness programs to the communities.
- Create alternative income generation activities
- Act as bridge for information dissemination from the communities to the Government and vise versa.
- Collaborate with institutions responsible for conservation of protected areas for joint implementation of conservation related activities.
- Establishment of conservation strategies.
- Fund raising

Procedure for Creation of new Protected Areas

According to respondents from NGOs group the following should be considered in the creation of any new protected area.

- Awareness provision on the importance of the area to be established as conservation area
- Meeting with communities to introduce the ideas and get opinions
- Involves the local authorities from the beginning of the process
- Identify all stakeholders to get their opinions
- Provisions of announcement using public meetings and radios.

Criteria for the Selection of Areas in Protected Areas inclusion

Five criteria have been mentioned by respondents in this group as criteria to be taken into accounts when an area is to be included in protected areas.

- Carry out research to find what are existing in the areas in question in terms of potentials resources and types of community use.
- Determine the level of threats facing the area
- Find out types and status of potential resources
- If the areas have rare and endemic species
- The areas should have potentials in terms of soil erosion control, water catchment values.

Weaknesses of Conservation Section of DFNRNR of Zanzibar

Several weaknesses have been mentioned in this second group of respondents, these include:

- Low level of transparency, accountability and honest
- Few sources of revenues to carry out large task in conservation matters of PAs
- Low level of cooperation between communities and conservation staff of the department of Forestry and Non renewable resources
- Low level of enforcement for illegal matters within protected areas
- Lack proper participatory mechanisms in planning, implementation and setting of priorities within the conservation sections
- Lack of alternative for community needs from the protected areas.

Corrective Measure for the Weaknesses

The respondents mentioned that the weaknesses of the conservation section can be resolved by carrying out the following measures**:**

- Participatory approach in conservation should be improved
- Alternative sources of products obtained from PAs should be analyzed
- Departments dealing with conservation of PAs should have their own prosecutors to make their cases in courts more effective and properly handled
- PAs should be increased in number by at least each district within Zanzibar to have one PAs

Opportunities of Zanzibar Protected Areas

From NGOs group of respondents, here under are the opportunities which were mentioned to exists in protected areas

- Tourism practice and income generation
- Education and research
- Climate regulation
- Acts cultural and spiritual monuments
- Rehabilitation of PAs

Threats facing Zanzibar Protected Areas

In this group several threats have been seen facing the PAs areas as mentioned here

- Policy contradiction between PAs and other development policies
- Population increase
- Poverty to majority of community members around the protected areas
- High demand of PAs forests resources
- Climate changes (extremes temperature and prolonged drought periods, sea water intrusion)
- Forests fire
- Emerging of power saws

Strength of Zanzibar Protected Areas

The main strength mentioned in the group of NGOs includes:

- PAs are protected by laws
- Human resources with knowledge on forestry
- Willingness of the community in conservation of protected areas
- Having management agreement with communities

Strategies for Management of Zanzibar Protected Areas

The main strategies mentioned for the management of the protected areas from this group are:

- Conservation education provision for management of protected areas
- Law enforcement through joint patrolling
- Initiation of alternative energy sources and energy cooking stoves
- Employment of more forests guards
- Community involvement in management of PAs
- Practicing alternative income generation activities in the protected areas such as ecotourism

Stakeholders of the Zanzibar Protected Areas

The main stakeholders of the protected areas as per respondents from the group of NGOs include:

- Communities around protected areas and other from near by towns
- Department of forestry and Non Renewable Resources and Department of Environment
- NGOs related to conservation and environment.
- Tourists
- Conservation clubs
- Politicians
- Local , Districts and Regional authorities

Responsibilities of the group towards Protected Areas

For non governmental organizations such as NGOs, Villages conservation, conservation clubs etc. their main responsibilities should be;

- Participate in planning and implantation
- Advocate for several issues related community participation benefit sharing and community rights
- Forest or PAs patrolling

While for Government Institutions such as Department of Forestry, Department of Environment and others their main roles should according to NGOs group are:

- Policy and laws formulation ,review and implementation
- Preparation and implementation of Pas plans

Management Tools for Zanzibar Protected Areas

The main management tools mentioned by the respondents from this group are:

- Having proper and enough working tools such as motor vehicles, motor bikes, bicycles, computer and finance
- Reliable policy and laws
- Plans PAs.
- Timely reporting

Legal status of protected areas of Zanzibar

Concerning the legal status existing within Zanzibar protected all respondents said that, they know nothing about legal status grades existing within protected areas. What they know is protected areas are government property that are not allowed for cutting and hunting

4.3 OTHER STAKEHOLDERS (Timber sellers, saw millers and poles sellers)

In this group seven respondents were involved out of which six were males and one female. Four are saw mill managers, two are pole sellers and one is timber seller. In this group six respondents do not know the structural organization of the conservation section within the department of Forestry and Non renewable resources while only one knows the organization structure. Five out of seven said that, the existing structural organization do not satisfy the needs of management of protected areas while the remaining two said it satisfy the needs.
Thus there is a need of formulation of the conservation section with the department that will function properly so as to conserve the protected areas and its biodiversity well enough.

Roles of Stakeholders

Concerning their roles as Stakeholders of the conservation section, the members of this group mentions three roles that they have to perform.

- Follow regulations /laws and guidelines on tree felling, transportation and selling of forest products in order to avoid being suspicious for treated as harvesting illegal from protected areas.
- They are responsible for tree planting for future uses and sustainability
- They are also responsible in conservation of protected areas by providing information to the forest management authority on illegal activities that will happen in the protected areas.

Procedure for Creation of new Protected Area

According to respondents in this group the following should be considered in the creation of any new protected area.

- Firstly the community should be educated in order to make them aware to the situation through radio, meetings and seminars

- The area that needs to be protected should have community (cultural, spiritual) importance as well as having environmental importance
- The community should be involved in the process from the beginning.

Criteria for the Selection of Areas in Protected Areas inclusion

Two criteria have been mentioned by respondents in this group as criteria to be taken into board when an area is to be included in protected areas.

- The community around should be informed and accept idea of the areas being included on the as protected area.
- The areas should have potentials in terms of soil erosion control, water catchment values and or have rare, endemic plants and animals' species.

Weaknesses of Conservation Section of DFNRNR of Zanzibar

Several weaknesses have been mentioned in this group of respondents, these include:

- Low level of community involvement
- Less conservation education provision to the community on the importance of PAs
- Low level of transparence and honest
- Lack of alternative for community needs from the protected areas.

Corrective Measure for the Weaknesses

The respondents mentioned that the weaknesses of the conservation section can be resolved by carrying out the following measures**:**

- Encourage the communities to plants more trees of both hard wood for timber and soft woods of first growing for poles and fuel wood
- Environmental conservation awareness should regularly promoted
- Improve law enforcement by increasing forest guards and increase of responsibilities towards forest protected areas protection
- Fully involvement of local communities around protected areas in management

Opportunities of Zanzibar Protected Areas

From this group of respondents, the below are the opportunities which they think can be utilized within the protected areas

- Creation of more employment
- Education and research
- Tourism promotion
- Harvesting of minor forest products that will have less impacts to the ecosystems such medicinal plants, wild fruits and wild foods
- Rehabilitation of PAs
- Mobilizing the communities groups to participates in conservation of PAs

Threats facing Zanzibar Protected Areas

In this group forest fire and illegally harvesting of forest resources are the main threats

mentioned facing the protected areas of Zanzibar. These threats lead to severe loss of indigenous timber species like *Milicia excelsa* as well as endemics species of both flora and fauna of the Islands

Strength of Zanzibar Protected Areas

The main strength mentioned in this group includes:

- Having grass root conservation management units such as village conservation committees
- Having forests guards in some of Protected areas
- Present of laws i.e. Conservation and management Act No 10. and Environmental Act no 2 both of 1996.
- Having policies that are friendly with protected areas
- Willingness of the community in conservation of protected areas
- Community have knowledge on seedling and woodlots establishment

Strategies for Management of Zanzibar Protected Areas

The main strategies mentioned for the management of the protected areas from this group are:

- Involve the stakeholders in management of protected areas
- Law enforcement
- Participatory patrol of protected areas
- Employment of more forests guards

Stakeholders of the Zanzibar Protected Areas

The main stakeholders of the protected areas as per respondents from the group so called others include:

- Communities around protected areas and other from near by towns
- Department of forestry and Non Renewable Resources
- Tourists
- Department of Environment
- Conservation clubs

Responsibilities of the group towards Protected Areas

- Plants their own trees that will help to meet their demands
- Follow the laid down regulation/guidelines in cutting, transporting and selling forests products
- Participate in conservation of protected areas for sustainable management of plants species and reduce them from extinction
- Acceptance of conservation and sustainable advices provided by technical staff

Management Tools for Zanzibar Protected Areas

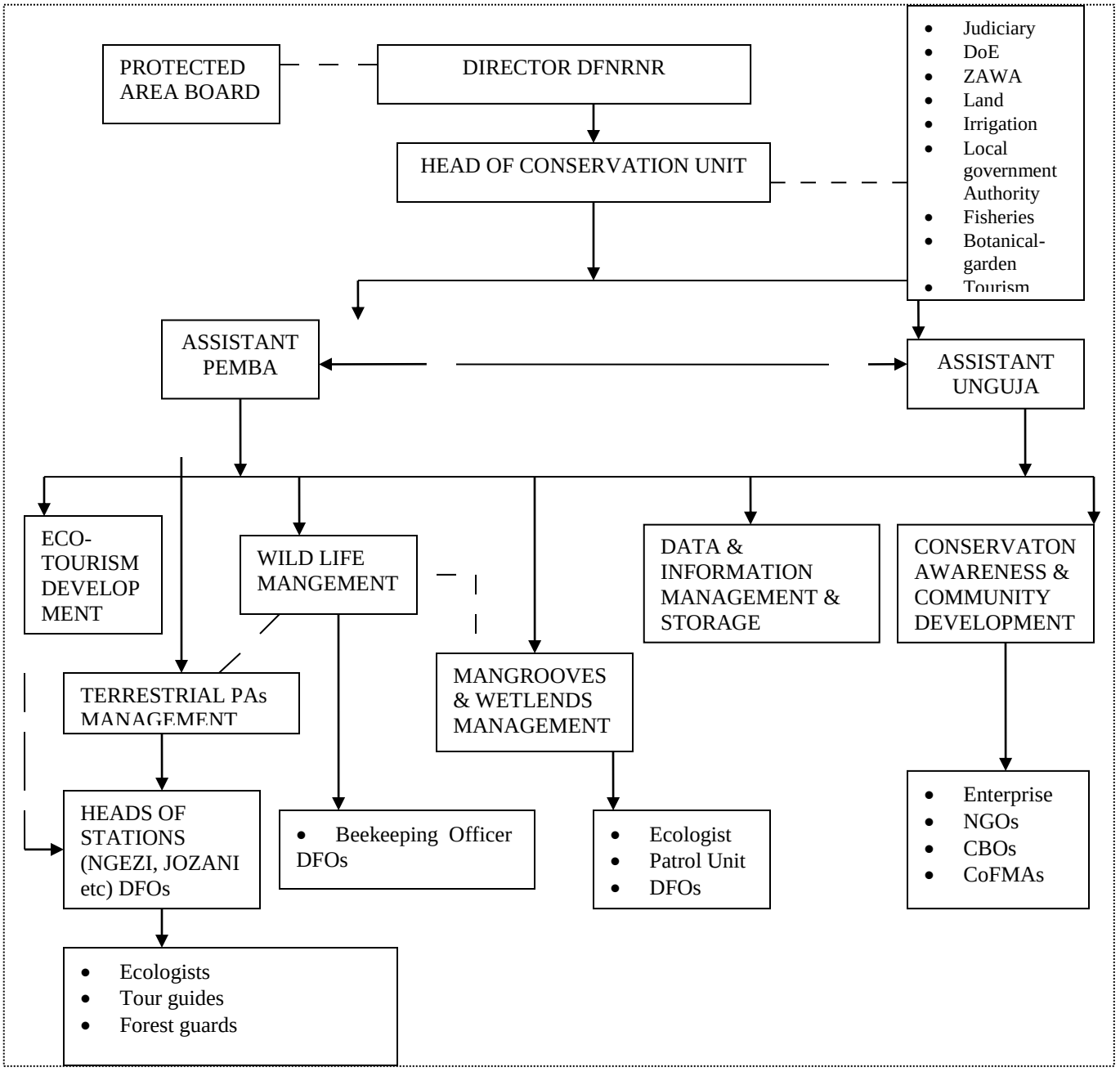
The main management tools mentioned by the respondent from this group are the formulation of village's conservation committees, Education programs and participatory leaderships.

Legal Status of Protected Areas of Zanzibar

Concerning the legal status existing within Zanzibar protected, four respondents out of seven said that, the statuses are quite good but the remaining three respondents said they know nothing about legal status grades existing within protected areas. What they know is protected areas are government property that are not allowed for cutting and hunting.

4.4 Proposed Organ grams for Protected Areas of Zanzibar and their Cost-Benefit Analysis

From the results and lesson learned from literature, organization structure that is expected to work more efficiently for Zanzibar conservation section is represented below:
This structure is selected because it is more relevant to our situation and it encompasses all units that are dealing with conservation of biodiversity as well as involving the stakeholders from the grass root communities, CBOs, NGOs, Government institution and development partners.



4.5 Administration and Manpower

Administratively, conservation section is under the department of Forestry and Non Renewable Resources Zanzibar. The general responsibilities for the management of PAs and biodiversity values lies with the coordination of the head of conservation section who will be assisted by two assistants, one in Unguja and the other one in Pemba**.**

Effective implementation of the plans to address the conservation of biodiversity and improving of livelihood of the surrounding community necessitates the level of education of the present staffs to be raised and more staff to be recruited**.** Fund raising, Management Planning and Implementation, Law Enforcement, Information management, Education and Communication, Visitor Services improvement, Research and Collaborative Conservation

Planning are among the responsibilities that should be performed by the head of conservation section with her/his two assistants. Furthermore, the strength and opportunities existing within the conservation section should be effectively utilized while threats and weaknesses should be changed to be in positive way.

Other staffs that should be allocated in conservation section as proposed in the organogram above are**:**

1. **Ecotourism Development Officer**

The position should have two staff, one basing in Pemba and the other basing in unguja and should be responsible for coordinating all PAs in tourism development including development of infrastructures**.**

Other responsibilities include:

- Public-Private Partnerships in ecotourism
- Facilitates the implementation of tourism activities in PAs
- Prepare information materials for visitors use
- Spread Knowledge and information about protected areas to tourism organizer

2. **Wildlife Officer**

The position should have two staff, one in Unguja and the other one in Pemba.
The main responsibilities are to implement the activities related to wildlife management as stipulated in the Long Term Forest Plan. Other responsibilities are:

- Spatial Data Management
- Research and monitoring
- Collaborative Conservation Planning and activities implementation
- Law Enforcement

3. Mangroves and Other Wetland Officer

The position should have two staff, one in Unguja and the other one in Pemba.
The main responsibilities is to implement the activities related to mangrove management as stipulated in the Long term forest plan and Mangrove management plans.

4. Conservation Awareness and Community Development Officer

The key responsibilities include:

- Organizing and conducting conservation education activities to schools and villages around protected areas as well as to the general public
- Prepare conservation education materials for different target groups
- Promote community involvement in conservation
- Promote income generation activities
- Create awareness on roles, rights, responsibilities and accountabilities of different stakeholders in conservation of PAs.

5. Data and Information management and Storage

The key responsibilities include

- Information Management Technology
- Spatial Data Management
- Monitoring and Evaluation.

6. Ecologists

All PAs together with mangroves ecosystems needs to have one ecologist each.

- Organize, supervise, and conducts research and monitoring of activities
- Coordinate restoration activities
- Promote conservation of flora and fauna
- Conduct monitoring of endemics, endangered, and rare species
- Setting levels of allowable harvesting in mangroves areas and for non wood products in PAs.

7. Other staff and institution needed to fulfillment of the conservation section are as shown in the organization structure above including DFOs, NGO, CBOs and village conservation committees.

4.6 Staff and Training

In general the number of Staff working in protected areas including mangrove ecosystem is not sufficiently enough and appropriate in comparison to the nature and size of the conservation areas. In some cases for instance in other mangroves ecosystems zone and some protected areas, there are no staff allocated at all. There is great need of recruiting more staffs with appropriate experience and skills in matters concerning mangroves such as Ecology, Participatory or co-management, REDD, Climate change, CITES and other international convention, Captive breeding, Research ,GIS for staff working in PAs, mangroves ecology, management, extension work and sustainable harvesting of resources.

4.7 Infrastructures and Equipment for Conservation

In order to carry out the duties and responsibilities of conservation section effectively the Department of Forestry and Non Renewable Resources, there is a great need of establishing new and improving the existing infrastructure. These include office buildings, information centers, staff house, nature trails and other attraction sites. These infrastructures also should be equipped with facilities such as computers printers, photocopies, sign boards etc. on the side of transport at least two cars one in Unguja and the other in Pemba. all stations heads and NGOs dealing with conservation should have motorbike while all tourist guards and forests guards should have bicycles.

4.8 Ministry of Agriculture and DFNRNR Responsibilities

Ministry of Agriculture and natural resources and Department of Forestry and Non Renewable Resources are responsible in Protecting, conserving and developing forest resources as well as in promoting sustainable development of the agricultural sector for the social, economic and environmental benefit of present and future generations of the people

of Zanzibar. Also are responsible for setting regulations, bylaws and agreements to manage forest resources sustainably.

Furthermore, these institutions are responsible in planning and budgeting for forest sector development. In addition the Ministry of Agriculture and Natural Resources and Department of Forestry and Non Renewable Resources are responsible for allocating land for forest development programmes through gazettment procedures; participate in fire prevention and fighting, illegal activities of forest resources in the natural forests, responsible for setting guidelines and funding for the protection and conservation of ecosystems and species, facilitation, coordination, recruitment, training and improvement of workers' welfare in forestry resources management.

Other responsibilities of the Ministry of Agriculture and Natural Resources together with the Department of Forestry and Non Renewable Resources are public awareness raising and promotion of forest activities and publication of educational materials.

4.9 ACTION PLAN

ACTIVITY	TIME				
	Y 1	**Y2**	**Y3**	**Y4**	**Y5**
Nomination of head of conservation section and two assistant	x				
Prepare and provide job description to all staff of conservation section	x				
Discuss with stakeholders to inform their roles	x				
Implementation of Long term Plan	x	x	x	X	X
Establish/improve Specific management Plans For protected areas and implement.	x	x	x	X	X
Infrastructure development and improvement (offices, and office equipment ie chairs ,tables , computers printers, photocopies	x	x			
Nature trail , boards walks, long hiking trails etc, establishment and maintenance	x	x	x	X	X
Training (long courses) on Participatory management, PES, REDD, Climate Change, Wildlife, Forestry, Ecotourism, Conservation and ICT	x	x	x	X	
Increase number of workers in Protected Areas (recruit new technical staff, employ new forest guards) and facilitates establishment of CoFMAs	x	x	x	X	X
Purchase of two cars , ten motorbikes, 50 bicycles, radio call handsets, GPS etc	x	x			
Facilitate putting legal status of PAs including initiating new conservation areas	x	x	x		
Short courses on CITES and other international convention, Captive breeding, Research , mangroves ecology, management, extension work and sustainable harvesting	x	x	x	X	X
Fund raising for PAs	x	x	x	X	X
Improve cooperation between stakeholders	x	x	x	X	X

Improve low enforcement	x	x	x	X	X
Initiate and implement Participatory mechanism for stakeholders in planning, and setting priorities within conservation section	x	x	x	X	X
Provision of conservation education and awareness	x	x	x	X	x
Research, Monitoring and Evaluation		x	x	X	x
Promoting alternative income generation activities in the protected areas such as ecotourism	x	x	x	X	x

5. DISCUSSIONS

- **Strategies**

The results through literature review and field survey reveals that in order for the conservation section /unit to function effectively, different strategies should be formulated and practiced. No single strategy can stand alone and work properly and the ideas of holistic approach are of paramount important. The main strategies found from primary and secondary data involve Stakeholders involvement, Conservation education outreach, Capacity building, Adopting appropriate technologies, networking, benefits sharing, Developing and promoting PES, Legal enforcement, proper planning etc**.**

- **Approaches**

Approaches are keys towards successful implantation of strategies for conservation of PAs. The ways on which different components of approaches are organized implies the success. Different approaches have been mentioned to be used in different parts of the world for conservation of Biodiversity. Among them are JFM, CBFM, and ICDP etc. Many approaches have been mentioned from the field data as well as from secondary data. The best approach should be well participatory and integrating different environmental aspects of conservation.

- **Best practice**

Many approaches have been explained as best practice applied in different parts of the world. Almost many of these approaches are applicable to our environment; however, some of these approaches need to be amended so as to cope exactly within our environment. Among these best practices Relevant international lessons from Bangladesh in protected area system which focuses on stakeholder participation and collaborative management or "co-management" and Land and Resource Use conflict from Botswana are of first priority. Capacity building to stakeholders, mutual understanding between stakeholders, clear definitions of roles and responsibilities are insisted to avoid conflicts. These practices need to be well studied for adoption, since co- management conservation approaches is now initiated in many parts of Zanzibar and conflicts happens and are likely to happen in future.

- **Criteria**

In order to have more effective management of protected areas proper categorization and inclusion of new areas in PAs systems is of potentials needs. In selecting PAs to

appropriate legal status several criteria have to be analyzed and discussed. From this study several criteria have been mentioned from both literature and field survey. The most common ones are:

The majority of schemes to the identification of hotspots focused either on total numbers of species or on numbers of endemic or threatened species occurring in an area. Additionally 'flagship' species, taxa like large cats, butterflies, parrots or humming birds, with high touristic or emotional value that might attract public attention were taken as surrogates for total diversity.

A common tool for the identification of ecological hotspots is the use **of species–area relationships. Biological diversity and species endemism**. Further more the l**evels of threats existing in areas are used as criteria for Identification of hotspots**. The species –area relation ship despite of being very common is not a good for Zanzibar since most of PAs are of small size and the most appropriate ones are Level of threats, Biological diversity and species endemism and use of flag ship species.

- **Management Tools**

The tools that have mentioned by different respondent groups from the field and literature review are good enough to enhance sustainability of biodiversity if will be implemented

- **Roles**

The purpose of this part is to promote cross-sectoral co-ordination on the forest related issues in environment and natural resources management and conservation. This is due to the fact that, the long term forest plan calls for a joint effort from local communities, regional authorities, district authorities, other government institutions, international organizations, NGOs, researchers and students. The kind of co-operation required has been elaborated in the Organization structure proposed and from the field of different respondents groups.
Specifically, what is needed is to maintain and promote co-operation and good relation with all stakeholders, governmental organizations, NGOs and International agencies.

- **SWOT**

If the mentioned strength and opportunities from the field data and literature reviewing should be considered and practiced in implementation of roles of Protected areas, the function of conservation section will be enhanced and improved. On other hand the weakness and threats should be overcome by changing them in the positive manner.

- **LEGAL STATUS**

The legal status of Ngezi-Vumawimbi Nature Reserve, Masingini Forest Reserve and Jozani Chwaka Bay National Park are well enough to conserve the forest resources within the PAs, how ever the status of Kiwengwa Forest Reserve needs the completion of the process since it was initiated and not completed. In addition Kiwengwa should upgraded to Nature reserve in order to overcome major threats since the areas have a lot of biodiversity

such Adders duiker, and other potential resources such as water catchments and tourism attraction sites which needs more conservation attention.

The status of Ras kiuyu Forest Reserve and Msitu mkuu Forest Reserves are some how contradictory (not complete probably) as they are only mentioned as the reserve in the List of forest reserves in the Forest management and conservation Act no 10 of 1996 but their gazzettment notice are not known. Therefore follow up or completion of the process is needed.

According to Silima *et al* (2010)The mangrove forests are government land as stipulated in the wood cutting Decree (No. 18 of 1945), which states that 'Government land for the purpose of this decree shall mean public lands as defined in the public land Decree and shall include the area of the foreshore between high and low water marks'. With respect to the Government Gazette of 1945 mangrove forests are declared as a mangrove forest reserve. The legislation governing mangroves forest reserve is included under Forest ordinance of 1945. However upon the establishment of Forest management and Conservation Act no 10 of 1996, all previous laws who governed the forest conservation were **repealed.** Within this new legislation of the mangrove forest were not given any status. Therefore the mangrove ecosystem should be given legal status in order to have effective and sustainable management of mangrove forest and associated biodiversity.

Further more, several natural forests patches should be identified, surveyed and given legal status such as special management areas.

- **COST BENEFIT ANALYSIS**

The conservation section set up that have been established tries to focus in all sub units existing with respect to conservation of PAs and its biodiversity. If the roles and responsibilities mentioned are well implemented, the conservation of protected areas will be more effective. It involves most of stakeholders in the organization structure, thus wider thinking and more correct decisions which will results to better performance, since many interests such as water conservation, wildlife, plants and their habitas, communities' interests were taken into consideration. The set up also consider and adopt some of the sections mentioned in the Bangladesh as well as Botswana organograms, however it was not possible to adopt the complete organization structure from either Bangladesh nor Botswana because the structure from these country are self sufficient in terms of financial management and administration while the conservation section of Zanzibar biodiversity conservation is just a component within the DFNRNR

6.0 POLICY RECOMMENDATIONS

There is a need of refining the policy framework for protected areas management in the National Forest Policy to capture the following:

- Currently, the question of REDD including carbon trading has a role to play in conservation of biodiversity and income generation. Zanzibar has a number of potentials in its various ecosystems. Individuals have a greater role to play in offsetting carbon emission which warrants for the establishment of clear financial mechanisms

that could provide appropriate options for REDD implementation. up to now the forest laws and Policy remain silent on this. It is necessary therefore, to amend forest policy to include addressing issue of REDD to support the capacity building of the communities and institutions and make them ready for REDD and carbon trading. Also the forest policy should be amended to include the addressing of Climate changes matters as it is also silent on this.

- Currently there is no clear mechanism for ensuring equal cost/benefit sharing in participatory conservation programme such as Joint Forest management programmes between the DFNRR, the local and other stakeholders. Normally many actors can fully participate if benefits are obtained through his/her participation. In the existing policy the issues of participation have been well explained but the question of cost –benefit sharing is not well taken into consideration, because it just and new emerged issue, there fore this intervention should be well presented in the National forest policy and should focus on cost-benefit sharing between government and communities on all matters related to participation in conservation including carbon trading, Community forest management as well as from penalties fund obtained after joint patrols. Therefore, the issue of participatory programs such as PFM, CBFM, and COFM etc need to be clearly defined in the National Forest Policy including how the community will be benefited by being participating in conservation.
- Special attention should be reflected on the forest policy and Conservation and management Act no 10 of 1996 on the mangroves ecosystem conservation since now no legal status described and known to exist. Therefore, the forest policies should be formulated in the sense that it would integrate mangroves resources and its ecosystem. Also the Act should focus on wildlife by putting a separate section describing the governance of wild animals.
- The Forest policy of 1995 and Conservation and Management Act. no. 10 of 1996, should direct the question of setting environmental guidelines and control in and around protected areas as most of our PAs are in Potential areas for other investments, thus if no guidelines for investments in and around protected areas, it is likely to threaten PAs in near future from investments.
- As the policy recognized that, there are many different actors taking an interest in conservation and development issues. Therefore, conflict management becomes real and a very important issue to deal with and the forest policy should set a mechanism for conflict resolution

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8.0 APENDICES AND ANNEXES

ANNEX 1. TERM OF REFERENCE

TERM OF REFERENCE

Consultancy name: "Present Institutional Structure for Conservation of Biodiversity reviewed as to functionality "

Duty Station: Island of Unguja and Pemba (Zanzibar)

Time frame: 45 Working days

Client: Department of Forestry & Non renewable resources .Zanzibar – DFNRNR.

1.0 NTRODUCTION

In Zanzibar, the institutional structure and set up is largely based on a civil structure that includes Ministries, Commission, and Departments/Divisions, etc. The Ministry of Agriculture & Natural Resources-MANR is the major institution with enormous responsibilities on Coastal Forests and biological diversity conservation. The Department of Forestry & Non Renewable Natural Resources, Zanzibar is the Central Department responsible for Coastal Forests and the Forest Protected Areas. Other notable departments that have stakes in Coastal forests management and biodiversity include the Department of Fisheries, IMS Marine Resources and the Department for Environment. The Ministry of Tourism & Trade, Ministry of Land, Settlements and Ministry responsible for Water management have stake in forestry.

Zanzibar government has also partnered with the private bodies on forest conservation activities. Primarily, there are two major small marine protected areas managed by private companies enter agreement with Zanzibar Revolutionary Government. These companies are Chumbe Island Coral Sanctuary/Park and Mnemba Island Marine Reserve , both in Unguja island.

On the other hand, civil society's' organization do exist (NGO and CBO) which have been engaged with realizable interest in biodiversity conservation. Their interventions have complemented by ongoing government conservation and development initiatives around the protected areas. To mention are JECA, SEDCA, NGENARECO, KIDIKE and Advisory . Committee of Kiwengwa-Pongwe Forest Reserve.

There is stake on Local government institutions, Districts Authorities as well as Shehias which collectively interface directly and or indirectly with rural communities and are important partners in protected areas management. The districts are the power house of governance, law enforcement and conflict management.

Further, the current national; wide forest extension support system is encored with respective district level where "the subject matter specialists operate".

Shehias organize community members to form Community conservation committees that operate at the lowest level of resources management and ownership.

The National Forest Policy-1995 articulates and gives the due priority on conservation of protected areas; the current structure set up of the DFNRNR does not augment (enhance) the policy.

The DFNRNR lacks a conservation wing and consequently lacks conservation cadre. Consultation with community committees (VCCs) having forest management agreements (CoFMAs) with DFNRNR have revealed a lack of an oversight support and even follow up. This de-link has been associated with inadequate decentralization of extension support services

The DFNRNR now seeks a functional and sustainable institutional structure for terrestrial Protected Areas Conservation Unit/division. The consultancy is expected to review and define the best structure for the government and then putting these structures in place with regard to building training and infrastructure capacity.

Main responsibilities

- Drafting recommendations on conservation biodiversity policies for the DFNRR:
- Formulating strategies based on the National forest resources management plan 2010-2020
- Developing and harmonizing approaches, methodologies, and criteria for identification and setting priorities for hot stops" and sensitive areas
- Promoting the environment related practices, measures for control and management of FPAS
- Promoting full range of available management tools so as to ensure the sustainability of the conservation of biodiversity Unit/division
- Elaborating and suggesting cooperative and collaborative actions and partnerships among various stakeholders

Scope of Work

The institutional structural consultant will review international and regional best practice, develop a cooperative governance model for conservation of biodiversity, identify alternative institutional models, review the cost effectiveness of different institutional models, assess the feasibility of the preferred institutional model and develop an implementation plan to guide the restructuring processes. The specific task will include, but are not limited as the following:-

- Review of the strengths, weaknesses, opportunities and threats of the current institutional setup
- Review of best practice in the governance of FPAS;
- Review of legal status and institutional structure
- Review of governance model for conservation Unit/Division
- Review of international and regional best practice in the institutional structuring of government protected area agencies, roles and responsibilities of the different institutions and partners in planning, management and monitoring;
- Arrangements for conservation Unit/Division in management, and their efficacy in the FPAS context;
- Identification and review of alternative options for institutional responsibilities for the FPAS
- Cost-benefit analysis of the different institutional options

- Specification of the preferred institutional option for the planning and management of the FPAS;
- Structural requirements for implementing the preferred institutional option resource requirements (infrastructure, funding, staffing), management functions, structural considerations, etc.);
- Action plan, with explicit timelines, for the restructuring of the government protected area agency/ies; describing the institutional and governance arrangements (i.e. roles, responsibilities, co-operative governance structures) for FPAS consolidation and expansion.
- Defining the roles and responsibilities of the MA & NR and DFNRNR and different public institutions; in the defining the institutional roles and responsibilities of FPAS authority.