

**Department of Commercial Crops
Fruits & Forestry (DCCFF)**



MINISTRY OF AGRICULTURE,
LIVESTOCK & ENVIRONMENT
REVOLUTIONARY GOVERNMENT OF ZANZIBAR
TANZANIA

FORESTRY TECHNICAL PAPER
NUMBER 96

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MINISTRY OF AGRICULTURE
LIVESTOCK AND NATURAL RESOURCES
ZANZIBAR

JOZANI – CHWAKA BAY PROPOSED NATIONAL PARK

MANAGEMENT PLAN

MAIN DOCUMENT

MANAGEMENT GUIDELINES
Objectives, Actions and Indicators

Forestry Technical Paper No. 96

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July 1997

Edited by
Amour B. Omar

(Reprinted June 2001)



ACKNOWLEDGEMENTS.

The help and contributions of many Officers are key factors that caused the success of JCBNP Management Plan preparation. We are deeply appreciating their efforts. We are also deeply indebted to the villagers of Bwejuu, Charawe, Chwaka, Cheju, .lozani/Pete, Unguja Ukuu, Ukongoroni for providing us the necessary co-operation during village meetings.

Mr. Hilal I. Mwene (Commissioner for Natural Resources - Zanzibar) and Mr. Yussuf Kombo (Chief Forestry Officer) are highly thanked for creating conducive situation that led to success this Plan.

The special thanks are delivered to Mr. Abdullah S. Shah for his constructive contributions JCBNP Management Plan before he joined CARE. His was specifically on problem analysis objectives formulation.

The authors are also appreciating the contributions and corrections of Mr. Robert Wild (Conservation Advisor), for his advice during the preparation of Management Plan. Mr Thabit Masoud (Head of Conservation Section), Mr. Amour O. Bakar (Head of Planning and Section) provide valuable contributions, corrections and constructive criticisms that helped formulating this JCBNP Management Plan and for editing the final draft. We give them immeasurable thanks. The Technical Assistant - Mr. Andrew William (CMA) is specially thanked for helpful contributions and constructive criticisms. He prepared the Zoning map some description of management zones. The Conservation Section Officers - Mr. Ali U. Basha (Jozani Officer), Mr. Khamis Mussa (Jozani in-charge and Community Service Officer) Mtumwa Ame (Mangrove Officer), Mr. Mgeni R. Mgeni (Tourism Services Officer), Khamis Abdi (Jozani Ecologist), Madam Samira Makame (Conservation Education Officer, Madam Waliira Othman (Wildlife Officer) and others for valuable contributions, assistance co-operation during the exercise of formulating the JCBNP Management Plan.

Other Officers of CNR - Mr. Rajab Toufik (Forest Production), Tamrin, Rahika Suleiman, Soud Mtumwa (District Forestry), Mr. Nassor Mkarafuu (Village Forestry), Mkubwa (District Forestry). Mr. Mi Thani (Training Officer). Maulid Kheri (Manpower Officer), Juma Hamad (Central Administration and Acting EDG Project Manager) and Officers from Government Institutions - Mr. Suleiman Nasser (Department of Environment), Mr. Mlenge Use Planning), Mr. Said Abraham (Commission for Tourism), Mr. Omar Shaame (FE Sector) and the Village Representatives. They are gratified for their contributions during JCBNP Management Plan Workshops.

We also appreciate the help of Mr. Bashir Mohommed (Project Administrator) for facilitating logic support and Mr. Shaaban Haji Vuai for helping the field visit.

Special thanks go to the participants of the workshop conducted at Mwanyanya recommended the re-structuring of this plan.

Lastly we thank all other people who through various ways contributed at all stages of the process to the final production of this document.

Zanzibar, 30 July 1997.
Hamoud S. Abdullah
Makame Kitwana Makame.

LIST OF ABBREVIATIONS AND ACRONYMS.

AC	- Advisory Committee of JCBNP
AWF	- African Wildlife Foundation
CAL	- Commission of Agriculture and Livestock
CARE	- Co-operative Assistance for Relief Everywhere
CMA	- Community Management Assistant
CNR	- Commission for Natural Resources
COLE	- Commission for Lands and Environment
CoRE	- Commission for Research and Extension
CoT	- Commission of Tourism
CPW	- Chief Park Warden
DoC	- Department of Co-operatives
DoE	- Department of Environment
EIA(s)	- Environmental Impact Assessment
GoZ	- Government of Zanzibar
IMS	- Institute of Marine Science
IMSDZC	- Integrated Management and Sustainable Development of Zanzibar's Coast.
IUCN	- International Union of Conservation of Nature and Natural Resources
JCBCA	- Jozani - Chwaka Bay Conservation Area
JCBCP	- Jozani - Chwaka Bay Conservation Project
JCBNP	- Jozani Chwaka Bay National Park
JCBNPMP	- Jozani Chwaka Bay National Park Management Plan
MALNR	- Ministry of Agriculture, Livestock and Natural Resources
MFSC	- Management and Follow up Sub-committee of Advisory Committee
MWC	- Ministry of Women and Children
NCA	- Nature Conservation Area/Authority
NGO(s)	- Non Governmental Organisation (s)
PRA	- Participatory Rural Appraisal
RSS	- Revenue Sharing Scheme of JCBNP
SUA	- Sokoine University of Agriculture
TAFORI	- Tanzania Forestry Research Institute
TBA	- Tropical Biology Association
TPRI	- Tropical Pest Research Institute
TVZ	- Television Zanzibar
VCC	- Village Conservation Committee
WWF	- World Wide Fund for Nature
ZCC	- Zanzibar Chamber of Commerce
ZFDP	- Zanzibar Forestry Development Project

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1. Staff Requirement for JCBNP.
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1. Job descriptions for JCBNP.
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INTRODUCTION

Jozani Chwaka Bay is the largest conservation area in Zanzibar and the first proposed National Park, Composed of Jozani forest, the Chwaka Bay forest and other areas. It was created a conservation area in 1995 for the purpose of fostering the long-term survival of the area and its surrounding habitats. This will encourage a new approach towards conservation with an emphasis on community involvement. Jozani is a most unique area on Unguja, representing the vegetation types and habitats that were once common throughout the island, it also hosts natural ecosystems with various fauna and flora species that were once abundant in Unguja Island, and the population of indigenous and endemic fauna and flora species that are endangered. Chwaka Bay mangrove forest is the largest mangrove stand in Unguja and essential to the productivity of Chwaka Bay. The forests attained the status of forest reserve in 1960 and 1965 respectively.

History

Between 1920s and 1940s, the Jozani forest was used for commercial exploitation (Zanzibar archive). Its significance as a protected area has been recognised since late 1940s when the colonial Government purchased 194 ha of Jozani forest and make them forest reserve. The area was originally owned by the Jozani forest estate and sawmill company (Swai, 1983). The Government managed the forest by stopping commercial exploitation and initiating the reforestation in areas harvested before being purchased. The Chwaka Bay mangrove forest has also been recognised as significant area since 1946 when its harvesting began to be managed by the Local Council formed by eight villages. The villages were Chwaka, Pongwe, Uroa, Marumbi, Mapopwe Charawe, Ukongoroni and Michamvi. The local council also established the Bylaws for controlling the exploitation (Khamis *et al* 1997).

The formulation of this Management Plan fulfils the goal of the Jozani Chwaka Bay Conservation project funded the CARE Osterreich and the aim of upgrading it into a protected area. The plan defines the objectives of JCBNP Management as well as the means to achieve them. It also gives the guidelines for Management activities for the period 1998 - 2002

The management of the National Park aims at sustainable conservation for ecosystems including the species of flora and fauna residing in the area. Linking of Jozani forest and Chwaka Bay mangrove forest and treat them under one umbrella of Management is important because it is very likely that there is some vital ecological interaction between faun~ resident in Jozani and the fauna and flora of the mangrove (Shunula, 1990).

The inhabitants of the eight villages use the JCBNP for their everyday life. Therefore it is necessary to consider sustainable use of natural resources side by side with the conservation. For that reason, a participatory approach was used in order to involve the local communities and stakeholders in the planning process and decision-making.

At the beginning of the planning process, meetings with the Village Conservation Committees were held in eight villages involved in managing the JCBNP. The aim of the meetings was to inform the villagers about the formulation of JCBNP Management Plan and hear their ideas. The Government Institutions that have interest in JCBNP and the adjacent areas were also consulted. The consultation was done for the purpose of making them aware about the exercise, and at the same time, give to the planning

team the description of development plans they have, for JCBNP and their neighbouring villages.

The Plan is comprised of five major management programmes and 9 sub-programmes:

I. Natural resource management programme which deals with overall management of the Park resources. Sub-programmes under this include:

- Zoning of JCBNP
- Wildlife Conservation
- Forest Conservation and Protection
- Mangrove Conservation and Protection
- Marine Protection
- Archaeological Sites Management
- Tourism Management
- JCBNP Research and Monitoring
- Infrastructure Development and Maintenance

2. Institutional Capacity Building and Human Resources Programme which deals with improving the capacity building of the Park and promote the ability of the staff.

3. Community Participation and Development Programme which deals with improving of community capacity in conserving the Shehia forests and the Park as well as promoting the socio-economic capacity of the community. The sub-programmes under this include:

- Building of Community Management Capacity
- Community Socio-economic Development
- Community Research and Monitoring

4. Conservation Education and Extension Programme which deals with the raising of community awareness on the importance natural resources to their life and environment.

5. Co-operation Development Strategy which indicates the institutions/ organisations that the Park is to collaborate with and their fields of co-operations.

1.0 PRIMARY OBJECTIVE OF JCBNP MANAGEMENT PLAN

The problem analysis exercise which was carried out during the planning process, discovered that the core problem facing JCBNP and its adjacent areas is the 'Degradation of Biodiversity'. The establishment of the overall objective of the plan is therefore the outcome of the problem analysis, which identified the primary objective as:

Through community participation, conserve, protect and develop the Jozani Chwaka Bay National Park. The goal is to restore and sustain the park Biodiversity and to improve economical, social, cultural and environmental benefits for the present and future generations.

The overall objective provides a general long-term direction that if achieved shall ensure the decrease negative impact of the core problem. The result should be to provide the benefits and enjoyment of the resources to local community, national and international society.

2.0 Management Programmes

2.1 NATURAL RESOURCES MANAGEMENT PROGRAMME.

The formulation of this programme takes into account the ecological importance of the area including its living museum of flora and fauna. The degradation of these resource~ ha~ been identified as the core problem that threatens their survival, and the existence of the general ecological systems within Jozani Forest and the Chwaka Bay Mangrove Forest. Jozani is a refuge of many wild animals and birds that were once common in many areas of Unguja island. Therefore the management of the area is essentially' controlling human activities within the area through community participation. The management practices can only succeed if the communities are benefiting from the resources residing within the JCBNP. In his regard the Park Management aims to promote the local communities understanding and awareness and involve them ii sustainable management of the National Park through protecting the integrity of forest resources while enjoying the benefits from the park.

This programme is comprised of nine sub-programmes which cover the sensitive issue of the Park i.e. Conservation of remaining limited natural resources. The sub programmes are:

- Zoning of JCBNP
- Wildlife conservation
- Forest conservation ~and protection
- Mangrove conservation and protection
- Marine protection
- Archaeological sites management
- Tourism Management
- Research and Monitoring
- infrastructure Development and Maintenance

General Objective of the programme:

Promote Conservation and Protection of Park natural resources by involving local communities and at the same time make them enjoy social, environmental and economic benefits.

2.1.1 Zoning of the JCBNP.

2.1.1.1 Rationale: Increasing the viability and benefits of biodiversity protection.

All the areas which are to constitute the Jozani-Chwaka Bay National Park have been traditionally used by people to varying degrees. Some areas have been subjected to higher impact uses - such as clearing for permanent agriculture - while others have only been lightly utilised and remain close natural state. Additionally, Some of these areas is of special conservation importance and require a high level of protection while other areas can be managed and conserved on a more flexible basis. Therefore, in order to meet all three management objectives of:

- biodiversity conservation.
- Low impact resource use
- Improve livelihood

a flexible and zoned land and natural resource conservation plan is required.

2.1.1.2 Management Zones.

For the purpose of simplifying the management, JCBNP is divided into four zones; these are High protection zone, Low impact use areas and Joint community~ management zone. The description of each zone is as follows.

1. High Protection Zone.

This is a Core Protected Area, which occupies four important habitat types, namely Ground water forest (commonly known as Jozani Tovu), Salty marsh area (commonly known as Wangwani), Coral rag forest bordered by Charawe road and Cheju-Mapopwe Mangroves (Map

The purposes of a High Protection Zone are to:

- Provide the maximum protection possible for ecosystems, habitats, genetic material and species.
- Provide Opportunities for recreational use of the JCBNP.
- Provide Opportunities for basic scientific research and monitoring.
- Provide U natural state comparison area for environmental monitoring.
- Conserve the culturally sites of JCBNP and provide cultural low impact uses.
- Provide Opportunities for educating the conservation issues to communities especially School pupils/students.

The zone shall be given maximum protection to ensure minimal disturbance to flora an fauna for better maintenance of physical and ecological processes. Within this zone human activities/interference shall be strictly controlled. The zone is designated such that it incorporates the features that contribute to JCBNP's high conservation importance.

Within this zone, the only activities to be allowed are:

- Scientific research and monitoring that does not significantly affect the

ecosystems.

- Controlled recreational use.
- Environmental education.
- Activities necessary for forest protection and management.
- Controlled collection of medicinal plants and basketry materials (*Phoenix* young thatches) only.

The plantation forest found in this zone is also to remain unexploited. It is enriched with tree species (*Callophyllum inophyllum* and *Vitex doniana*), which are palatable to red colobus monkeys. These tree species are not invading and believed to have naturalised, hence not dangerous to conservation status of JCBNP. However, it is important to examine the possibility of gradual replacement of exotic species/vegetations.

2. Low impact use zone.

These are areas where a designated low impact use is agreed with the community contingent on strict and policed conditions. This zone engulfed the High Protection Zone. It covers Park areas east of the groundwater forest, Mapopwe forest and grassland as well as Kenge, Tuunguni, Ufufuma and Mlalagaoni forest.

The purposes of Low impact use Zone are to:

- Provide the protection for ecosystems, habitats, species and genetic material.
- Provide the refuge for wildlife, which are harassed in other areas.
- Conserve biologically and culturally valuable sites.
- Provide the opportunities for educating the conservation issues to communities especially the school pupils/students.
- Provide opportunities for environmental research and monitoring especially on the methods of conservation sustainable use of forest products.
- Allow sustainable, low impact use of some minor forest products by local communities.
- Provide forest protection and management.

The zone demands protection to ensure its sustainability as it harbours many wildlife. Therefore, any kind of minor utilisation should be properly controlled to ensure that no distortion to ecosystems or habitats is occurred.

Within this zone, the only activities to be allowed are:

- Controlled collection of basketry materials, dry naturally fallen firewood (i.e. for domestic uses only), specified size classes of poles, medicinal plants and fruits.
- Scientific research and monitoring that does not distort the ecosystems and habitat.
- Controlled recreational use.
- Educational activities for school students/pupils.
- Controlled beekeeping activities and seasonal grazing.

3. Joint community management zone.

These are areas which are to be jointly managed by a particular community and the Commission for Natural Resources under a governing agreement. Greater power of

management of the forest block are divested to the community with joint monitoring. The forest block may only be managed on a low impact use basis.

It is proposed that Kijibani Forest be divided between Cheju and Unguja Ukuu villages on the basis of the traditional boundary between the two villages and then each block put under a separate joint management agreement for management by the respective communities on a low impact basis.

The purposes of the zone:

- Strengthen partnership with community.
- Provide opportunities for scientific research and environmental monitoring.
- Provide opportunities for recreational uses.
- Provide chances for educating the conservation issues to communities especially school pupils/students.
- Provide basic forest resources requirement for local consumption.
- Conserve culturally valuable sites.

Within this zone, the only activities to be allowed are:

- Collection of dry naturally fallen firewood, limited subsistence (i.e. for domestic use only) and harvesting specified size classes of poles.
- Controlled tourist uses.
- Carry out the scientific studies/researches and monitoring.
- Carry out the training of the conservation/environmental issues to communities.
- Develop the beekeeping activities.
- Hunt under certain specific conditions.

4. Special Management zone

This is an area that has been badly degraded and requires restoration through active re-planting and natural regeneration. This forest restoration area is proposed to cover Mapopwe-Kijibani corridor, Chwaka thickets bordering the Chwaka Mangroves and several illegal forest clearings in Ufufuma Forest.

The purpose of the zone is to allow restoration through active re-planting and natural regeneration. When the area has regenerated sufficiently, it may be re-designated under a different zoning - such as a Low Impact Use Zone and thence be subject to the corresponding land and resources use conditions.

Within this zone, the only activities to be done are minimal ultra-low impact use for scientific research and environmental education.

2.1.2 Wildlife Conservation Sub-programme

Due to extensive destruction of their original habitats, wildlife in large numbers are dwelling within Jozani forest. It is therefore very important to promote the existing conservation measures so that the wildlife populations are maintained and developed. This will result in improved environment and provision of social and economic benefits

to mankind.

Specific Objective of Sub-programme:

To manage and regenerate the remaining wildlife for the benefits of satisfying social consumption demand, conservation advantages and ecological processes.

Management actions

1. Day and night patrolling by forest guards will be a regular operation to checkout illegal hunting within the Park. At least two night patrols to be done in a week. The areas commonly used by poachers should be identified and marked for night patrol. Equipment such as torches, pangas, boots, overalls should be made available for this operation. Villagers should be involved in conserving and protecting the wildlife in their Shehia and in JCBNP. The *Shehia hunter association* to be established under the Conservation Committee. It shall have the responsibility of controlling the hunting activities in their Shehia and assist to protect the wildlife in the Park. The hunters outside their Shehia will be required to ask for hunting permit from the association one week before, and do hunting only when given the permit. Depending upon the population of target animals, the number to be hunted will be decided by the association guiding rules. Bylaws for utilisation of wildlife and hunting fees shall also be prepared by the association under the facilitation of CNR.
2. Jozani forest harbours the mammal species that have been listed in the ICUN red list of endangered species and provides habitat to a number of endemic species including butterflies and birds. Sustainable management of the forest and its habitats is the only way to guarantee for survival of these species. The conservation Plan for endangered, threatened and endemic species needs to be prepared with the main objective of conserving, protecting and monitoring them.
3. Captive breeding shall also be promoted for threatened and endangered species with manageable behaviour. This can be done by the Park management if financially capable or as independent project by other organizations and any other interested individuals. But the purpose should remain the same, to increase the population of these animals.
4. Censuses for wildlife species, particularly, endangered and threatened species of social and economic importance shall be done annually or after every two year depending on financial position. This will enable understanding of the population status of such species and the information will assist in formulating monitoring and evaluation plans.
5. Hunting within the Park should be totally prohibited. The Park should be a place to provide sufficient peaceful range for animals to reproduce and foster their lambs conveniently. Hunting should only be exercised in the areas around the Park. Communities should be encouraged to respect Closing Hunting Season, an exercise that enhances an increase of animals' population. The Park should be able to establish hunting licences for spots and for proteins. Permanent hunting quotas should be established outside the National Park boundaries, preferably in community managed areas adjacent to JCBNP. Cropping of excess animals will

be done in hunting quotas only and on particular period in a year.

6. The decreasing rate of wildlife population especially the threatened species is constantly increasing as the community demand for protein is steadily increasing. The law enforcement through community participation should be strongly conducted together with the village hunting bylaws for the purpose of reducing illegal hunting in villages. There is also a need to establish wildlife corridor to link the Park and nearby forest patches. The negotiation with surrounding communities should be initiated and reach compromise. If they agree as proposed, the areas shall then be identified and studied to know their ecological characteristics.

Actions Implementation Schedule and indicators

Management Actions Indicator	Indicator	Time Frame				
		1998	1999	2000	2001	2002
Control illegal hunting	All hunters issued hunting permit	x	x	x	x	x
Protection of threatened and endemic species	No threatened species by the year 2002	x	x	x		
Regular conduct of animal censuses	Animal census reports available	x		x		x
Establishment of hunting licences and quotas	Licences exists and quotas demarcated	x				
Identify areas mostly used by poachers for hunting	Areas demarcated and mapped	x				
Establish hunter association and their bylaws	Association registered and bylaw book in place	x	x			
Monitor and evaluate the effectiveness and efficiency of night patrols to be done by Forest Guards	Evaluation reports available		x		x	
Initiate and monitor captive breeding	Several breeding animals in captivity	x	x	x	x	x
Plan and conduct the animal censuses in every specified period and evaluate the results and recommend the action	Census reports available	x		x		x
Monitoring the hunting system in surrounding villages	Hunting reports filed	x				
Preparation of conservation plan for threatened, endangered and endemic wildlife species	A conservation plan adopted	x	x			
Evaluate wildlife	Status report available			x		

conservation status of endangered species						
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2.1.3 Forest Conservation and Protection Sub-programme.

Protection of the JCBNP is necessary for the purpose of preserving the structure and extent of the forest and the population of flora and fauna. Both carrot and stick motivated means of protection are to be applied in order to sustain the environments.

Management actions

1. Two legislations, forestry and environmental legislations will be enforced to ensure the conservation of forest resources. Environmental legislation can be effectively used by CNR for the protection of the Park natural resources where forestry legislation is not applicable. The Shehia bylaws shall also be used to protect the JCBNP resources. Specific bylaws for the Park should be developed to complement the main laws and the Shehia bylaws. It is necessary for these bylaws to focus on protecting and conserving the Park resources.
2. Patrolling shall be done regularly through out the year to reduce the frequent encroachment and other destructive activities in the forest. Two categories of patrols shall be undertaken within the Park and in the adjacent areas. The first category-daily patrol by the forest guards - employees of CNR. The second one is the joint patrol between the staff of CNR and the members of communities. Forty eight patrols per annum are planned to be done as a joint effort between the CNR and the communities. Patrols are important as they guarantee proper use of the zones and implementation of the conditions concerning the utilisation of agreed forest products.

Guarding principle for patrolling:

Each Forest Guard (FG) will be assigned with specific area for patrolling. Patrolling has to be constant but on varied days and time of the week. This can be achieved by employing local villagers as guards as well as involving whole community through Shehia Management Plan.

The Park should review the existing patrolling system from time to time. More modification of the system may be done whenever deemed necessary or as people are getting used to the prevailing system.

3. Forest fire is a serious threat and normally cause severe damage to the forest and ecosystems. Jozani forest is characterised by having combustible materials which make the forest vulnerable to fire. The JCBNP is surrounded by the peasants that use fire as the means of clearing their farming plots. The question of fire prevention and control should therefore be tackled through community participation.

Guiding rules for fire prevention and control:

- Local communities shall be educated on the impact of forest fires as well as the importance of fire prevention and fire fighting. Communities should also utilise this technology for fighting fire, which occur in their Shehia forests.
- Local communities shall be trained on necessary precautions to consider when using fire as means of clearing their farming plots.
- Local communities shall, through their conservation committees, be mobilised and encouraged to play a great role in fire fighting when it occurs in the Park.
- During dry seasons, additional forest guards should be employed to patrol the areas, which are frequently affected by fire.
- A Fire Fighting Plan shall be prepared to define strategies in case of fire. The Plan shall include e.g. evaluation of the need for fighting equipment, identification of permanent water sources, a plan for making passable routes for fire-vulnerable areas and an effective fire-crew organisation.
- Honey collecting activities should be controlled by the Conservation Committees. Honey collectors should put off the fire during honey collection.

The fire fighting equipment suitable for JCBNP environment shall be identified and purchased and stored at Jozani office. Other forest stations such as Unguja Ukuu, Kibele and Dunga can also have access to this equipment. The communities around Jozani shall also be allowed to use the equipment if the fires happen to occur in their areas. Seminar on fire fighting for all staff of JCBNP together with some villagers shall be organised and conducted annually before dry season.

4. It is evident that the existing boundaries of JCBNP are contradicting. Some Park areas e.g. old sugar factory, are inhabited by local communities. Preliminary groundwork has been carried out by CNR staff and representatives of the communities, to rectify the boundaries and recommendations for new boundaries have been made. These need to be processed in the government system so that the boundaries are legally changed to minimise the conflicts with the local people and ensure that they support and respect them. The boundaries will be marked by the concrete beacons at a space of 150 metres apart. Tree species that have longer life span and a narrow crown cover will be planted in the boundaries to make permanent demarcation.
5. Exploitation in JCBNP and the adjacent areas has been carried out by the communities for many years sustain their livelihood. The utilisation rate of the resources has been steadily increasing, thus causing the high degradation of the resources in the areas around Jozani. It is therefore important to have controlled harvesting in agreed zones. This kind of harvesting aims to avoid damage to habitats and ecological systems.

Guidelines for utilisation

Communities shall be allowed to collect some forest products from Park for household consumption only. The products include basketry material, medicinal plants and fruits. Wood products from mangroves (excluding Cheju-Mapopwe mangroves) shall be collected for household use and for selling. Utilisation of wild animals from the Park should be strictly forbidden.

Co-ordination and supervision of these activities are to be undertaken jointly between

the Shehias and CNR. At Shehia level, Conservation Committees will have the responsibility of checking and monitoring the utilisation of natural resources within the boundaries of their Shehia.

A prerequisite for sustainable utilisation of forest products is the knowledge of the amount and annual growth of plants of interest as well as of the amount collected annually by local communities should be recorded. Therefore, the distribution of Phoenix trees and the amount of basketry materials they can produce annually as well as the communities demand need to be studied regularly. The result of this study shall provide the basis for understanding sustainable utilisation. If demand is higher than supply, the collection should be regulated by establishing the collecting quotas.

Permanent sample plots should be established in Phoenix tree areas for long term monitoring of the effects of utilisation on plant population. The plots shall be measured annually and data analysed for impact assessment purpose. In case an overuse is realised, the joint meeting between the CNR and the Conservation Committee shall be held to discuss and set new regulations for collection.

Mapopwe Mangrove Forest Management Plan provides guidelines for the utilisation of Mangrove forests, annex....

Conditions of utilisation

Communities (Users) will be required to respect the utilisation conditions laid down in this plan which are technical instructions focusing on increasing the survival of the trees. These are:

1. Permitted products shall be collected for household consumption only.
2. Collecting to be done during day time and upon given permit.
3. When passing the forest, no damage is caused to forest.
4. Records shall be kept by the Conservation Committee on the amount collected and present them to JCBNP office monthly.
5. Only villagers surrounding the JCBNP shall be allowed to collect the permitted products

The specific conditions to be respected by the users are:

Basketry materials:

Palms (Phoenix trees) are should not be damaged or killed during collection of basketry materials.

Only big, young terminal leaves of the palms to be collected and smaller leaves should be left to grow.

Medicinal plants:

Collection of leaves, barks, stem and roots to be done carefully to avoid killing of plants. People should be educated on proper methods of collecting medicinal parts of the plants without causing severe damages to plants.

The Park management and the Conservation committees shall be responsible for ensuring the implementation of the conditions. The conditions should also be evaluated for amendment, as it seems necessary.

Actions Implementation Schedule and indicators

Action	Indicator	Time Frame				
		1998	1999	2000	2001	2002
Educate local communities on the effects of fire and the precautions to consider when applying fire as a means of clearing a plot	Amount of fire damage caused by local communities reduced by 60%	x	x			
Prepare fire plan for JCBCA	Fire plan in place	X				
Purchase fire fighting equipment	Several sets of fire fighting equipment are in store	X				
Finalise ground work for the new boundaries and forward the proposal to MALNR for consideration and gazettelement	Boundary map with beacon numbers prepared	X				
Produce a new boundary map and publicise it at village, district and national level	At least 50% of the villagers recognise boundary map	X	X			
Educate and encourage staff and local communities to adhere and enforce the Forestry and Environmental legislation	Number of offences by villagers reduce by 60%	X	X	X		
Develop the JCBCA specific bylaws	Bylaw document available	X	X			
Conduct negotiations with the villagers about establishing wildlife corridors	Wildlife corridors declared	X	X	X		
Enforcement of existing legislation and bylaws	Number of offences from illegal wood cutting reduced by 60%	X	X	X		
Organise joint patrolling between CNR staff and communities. At least 4 patrols per month	Patrol reports written once a week	X	X	X	X	X
Assigning the patrolling tasks to forest guards	Each guard has specific area for patrolling	X				
Organise and conduct fire fighting seminars	One seminar conducted annually	X	X	X	X	X
Study of Phoenix tree and distribution in Jozani Forest and the production of basketry materials and its demand to communities around JCBCA.	The study report available	X				
Establishment of sample plots on the areas largely dominated by Phoenix trees	Sample plot demarcation report and map prepared		X	X		
Monitor and evaluate the guidelines for allowed forest products	Monitoring and evaluation reports available	X	X	X	X	X
Conduct the follow up of	Follow up reports available	X	X	X	X	X

utilisation conditions for allowed forest products						
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2.1.4 Mangrove Conservation and Protection Sub-programme.

The mangroves situated within the Park boundaries shall be managed like other mangrove forests outside the Park. However, special conservation emphasis will be given to the park mangroves.

Specific Objectives of Sub-programme:

To sustain utilisation of the mangrove forest stands by controlling illegal cutting so as to conserve the biodiversity and the natural ecosystems of the mangroves for enhancing the environment and socio-economic conditions.

Management actions

The management actions for mangrove forest are detailed in Mangrove “Management Plan”. However, the following actions are to be undertaken with great emphasis in addition to those in the Mapopwe Plan.

1. All mangroves within the Park area will be divided into smaller manageable blocks which will be surveyed, numbered and the whole area be mapped.
2. Create the Mangrove sub-committee under the JCBCA Advisory committee to control and monitor the utilisation of the mangrove resources. The areas of block i.e. Mapopwe and Kinani should be equal. This means some part of Kinani should be added to Mapopwe. The decision may necessitate the remarking of the boundaries. The activity can minimise the over exploitation of Mapopwe which is currently smaller in area than Kinani

Actions Implementation Schedule and indicators

Action	Indicator	Time frame				
		1998	1999	2000	2001	2002
Creating mangrove sub-committee	5 sub-committees created	X				
Remarking of the boundaries	Maps for boundaries in place		X			
Creating management blocks	Block map prepared	X				

2.1.5 Marine Protection Sub-programme.

Part of the proposed Park is occupied by coastal and marine habitats, rich in marine resources, including coral reefs, mangrove forests, seagrass beds and sand beaches. Coral reefs provide protection from the erosive force of waves. Mangroves stabilize shorelines and decrease coastal erosion by reducing the energy of incoming waves and currents. The real value of seabeds is not known but it is an important fishing nursery and habitats. There is an increasing pressure on these resources coming from over-utilisation caused by increasing population needs. As exploitation becomes more intensive, the rate of resource degradation and environmental destruction increases. To

arrest the situation, some form and of management and protection is definitely needed to enhance both conservation. The challenge for the Park management is to improve both, the economic productivity and the biodiversity value of the marine environment by undertaking appropriate management actions.

Specific Objectives of Sub-programme:

To sustain the marine resource base to ensure improvement of biodiversity that will enhance tourism and promote socio-economic benefits to local villagers.

To foster sustainable environmental sound management of the marine ecosystems by encouraging environmental sound activities or no-consumptive use of the resource base through enhancing local participation in planning and management activities.

Management actions

1. *Identifying useful resources and attractive feature.* Useful marine resources and attractive features should be studied and their management status be determined. Specific guidelines to be developed to define appropriate management of the resources and to address potential tourism attractions such as canoeing along the Chwaka Bay channel and rivers into the mangrove. Local villagers living close to these areas should be considered as stakeholders of the marine resources as they are important sources of actions and development at the local level. Therefore, for effective participation, they should have a strong say in planning and implementation of the actions. However, efforts should be placed to develop the areas for tourism rather consumptive use by local people. As the tourism industry expanding these sites, villagers should directly benefit from economic growth. At least two patrolling boats are needed for protection purposes and three small dhows are needed for tourists. Basic tourism facilities should be identified and installed.

2. *Protection and monitoring ecological changes.* Marine ecosystems especially the Chwaka Bay should be totally protected to allow restoration of the degraded parts. Only the non-consumptive uses should be allowed such as scientific research to monitor ecological changes, tourism but without any collection shells, crabs etc. The park should collaborate with IMS, for regular collection of data on the marine ecosystem and use that, together with community information, to guide management planning of the area. This has to be done repeatedly and from which changes can be easily monitored for future management decisions.

3. *Creating public awareness to reduce environmental degradation.* Villagers who were extensively using the resources of these areas must be aware on the importance and fragility of the marine resources. Intensive extension work is needed to make local people and other resource users to understand the importance of intensive care of the resources residing in these areas and their role in promoting proposed protection and utilisation.

Actions Implementation Schedule and indicators

Action	Indicator	Time Frame				
		1998	1999	2000	2001	2002
Identifying useful resources and attractive features	Report concerning available resources and attractive features to tourists available	X		X		
Protection and monitoring ecological changes	Regular patrolling done and monitoring system and records available. Research reports in place	X	X	X	X	X
Creating public awareness to reduce environmental degradation	At least 70% of villagers and resources are aware of the new management approaches	X	X	X	X	X

2.1.6 Archaeological Sites management Sub-programme.

Within JCBNP there are several sites of archaeological, historical and cultural importance. These sites are normally respected by the local communities for traditional activities. These are old “bigili” walls, old sugar factory and sacred sites. These sites need to be taken care of so that they continue to add into the JCBNP diversity and retain evidence of cultural history of Jozani and the people that surround the conservation area.

Specific Objective of Sub-programme:

To conserve and develop the cultural and historical values of the national park.

Management actions

1. The sacred sites will be maintained and looked after by local communities especially the users. The Park should ensure that there is no damage or disturbance caused to the sacred sites.
2. More studies on the location and status of archaeological and cultural sites should be carried out to improve their records. The management authorities concerned may be consulted and encouraged to co-operate with the Park management to study the history of these sites. It is for sure they among the most attractive feature to tourists.

Actions Implementation Schedule indicators.

Action	Indicator	Time Frame				
		1998	1999	2000	2001	2002
Identify and mark the archaeological and cultural sites within the park	A map to show their locations is drawn	X	X			
Consult Department of Old Events to plan a study of the history of archaeological and cultural sites in JCBNP	A study report is available for reference	X	X			
Develop management plan	Management plan and		X	X		

for the sites and publicise them as tourist attraction in Jozani	publications available at Jozani station					
Protection and maintenance of the sites	Sites tended once a year		X	X	X	X

2.1.7 Tourism Management Sub-programme

Tourism Management will be taken care of in the Tourism Management Plan for Jozani (Helle, 1997). The plan has been developed to upgrade the ecotourism in the Park to sustain the environment and provide benefit to local communities. It should also be economically viable in the national context such that it serves to ultimately support conservation of the Park biodiversity. Implementation of the tourism plan shall start in 1998 by developing and maintaining tourism services and activities as proposed therein.

Specific Objective of Sub-programme:

To manage the ecotourism sustainably, with minimum environmental impact and promote its facilities and at the same time provide economical benefits to CNR, be communities and the nation. The benefits should finally support the Biodiversity Conservation

Management actions

Management actions for this programme are more detailed in the Jozani Tourism Management Plan, which is considered as the annex to this plan. These actions several, but are described under four major groups of actions. They are basic related to visitors' services, revenues collection, manpower development and colobus welfare.

Actions Implementation Schedule and indicators

Actions	Indicator	Time Frame				
		1998	1999	2000	2001	2002
Improve visitors' services	Necessary visitors services developed		X	X	X	X
Improve revenues collection and recording	Amount of revenues collected annually increased by 70%	X	X	X		
Improve staff efficiency and working standards	All staff have training on respective field of work	X	X	X	X	X
Manpower development	Manpower development guiding rules prepared		X			

2.1.8 JCBNP Research and Monitoring Sub-programme.

Research is very important for it ensures the availability of information from which sound management decisions. Research and monitoring of ecological, social and economical development within and around the Park are tools towards building scientific information database. However, this is a major task for the Park to effectively

do it alone. It needs some external support and assistance, technical and financial. Some research institutions are to be consulted for help and advice.

Specific Objective Sub-programme:

To Initiate and encourage the use of JCBNP for scientific research and monitoring of ecosystems and species

Management actions

Although some studies and researches have been done in JCBNP, the basic knowledge available on the flora and fauna is still insufficient. This necessitates the need of carrying out further researches and studies to gain more knowledge of forest resources. The knowledge is important for preparing conservation plans and sustainable management of JCBNP. The research also is necessary in setting the conservation and management strategies as well as monitoring and evaluating the effects of their implementation. The results of research and monitoring act as a feedback mechanism on the effectiveness of management activities.

Researches and studies shall be done by the JCBNP personnel assisted by the research institutes or individual researchers. The consultants can also be hired to carry out some important studies. The external research institutes/organisations can also be requested to conduct researches provided that they are in line with the conservation objective. Alternatively, they can conduct researches in collaboration with CNR or other research institutes in Zanzibar. The researches should however, be permitted by the Zanzibar Agriculture Research Council. CNR should therefore take the responsibility of requesting the institutes and make them aware in advance concerning the procedures to follow before carrying out any research work. Relevant research institutes including IMS, SUA, ITFC, TBA, TPRI, TFRI and other institutions and individuals. There are several areas and topics to be studied but the following should be given priority

Basic Inventories of biological resources (Biodiversity studies)

- A botanical survey.
- The censuses for wildlife - estimate of population sizes and distribution.
- The bird species inventory. . -
- Species inventories on invertebrates, reptiles and amphibians.
- The forest resources inventory of coral rag areas within Jozani.
- Identify plant rare species.
- Ethnobotanical survey.

Human relationships

- Indigenous knowledge.
- Tourism impact.

Ecological studies

- An inventory of the amount and distribution of endemic species and subspecies of mammals birds and plants. This inventory needs to be repeated after every specified time e.g. 5 years for population monitoring purposes.
- Phenological research of indigenous tree species.
- The status of exotic tree species - distribution and amount.

- Propagation of indigenous tree species and other plants that are of interest to villagers.

Monitoring.

- The level and impact of encroachment by the community.
- Endangered mammal and plant species.
- The level of utilisation of basketry materials and its effect (*Phoenix reclinata*).
- Climate - rainfall and temperature should be recorded regularly and the data analysed and presented accordingly.

In any conservation project, ecological information is necessary to be studied, documented and be in a special upkeep because they form the basis for sound decision making. Therefore, it is important that adequate and suitable ecological information to be collected and manipulated to formulate an ecological Information database that will assist the JCBNP management in decision-making.

The consultant shall be ~hired to establish the Ecological Information Database to be stationed in Jozani office. The professional staff well trained in Forest Ecology shall be assigned with this activity. The unit can also cater for other forest areas in Unguja Island.

Actions Implementation Schedule and Indicators

Actions	Indicators	Time Frame				
		1998	1999	2000	2001	2002
Identify and communicate with the potential institutions and individuals to carry out research	Several institutions identified and contacted	X	X	X	X	X
Monitoring of the ongoing research	Monitoring system and reports prepared	X	X	X	X	X
Develop and review ecological information collection system	The system is functioning and reviewed version in place	X		X		X
Review the research priority and proposals	New version of research priority prepared			X		
Conducting research work	Research reports available	X	X	X	X	X
Hire consultant to establish information database	Ecological Information database established at Jozani Station			X		

2.1.9 Infrastructure Development Maintenance Sub-programme

The area is currently lacking facilities necessary for the Park and tourism management. Facilities such as communication, housing, electricity and even offices are either not present or inadequate.

Specific Objective of Sub-programme:

To provide adequate and suitable infrastructure facilities and ensure their timely subsequent maintenance for smooth implementation of the overall Park management objective.

Management actions

The development of infrastructures at Jozani Station is necessary to correspond with the growing number of visitors. A new staff house, a camp site, store, a new visitors' centre (information centre with the training room) should be developed together with the extension of the office space. The quarter site plan is in process and the construction should start soon after receiving the plan. The new staff quarter to be constructed plus the existing two are still insufficient for the Park officers. Other two houses need to be built during the period of this Management Plan. At least five officers are to reside in the station all the time. These are Chief Park Warden, Tourism Warden, Ecologist, Community Service Warden, Conservation and Protection Warden and Conservation Education and Extension Warden. The expansion of an office needs to be done and at least three rooms are to be added.

The upgrading of existing infrastructures is important to meet the growing touristic status. All buildings in the station look shabby to visitors. They need to be repaired and improved to a good standard. All houses should then be furnished. The toilets should be renovated to a worthy standard and their internal surfaces be decorated with water proof tiles. Furnishing it with upto date furnitures should follow the office building expansion. All the Park buildings should be maintained regularly to make them good. The well at Jozani station should be improved by making it safe from being contaminated by unwanted materials. The wall of the well needs to be raised higher so that to stop animals e.g. dogs, rats from entering it. The floor around the wall needs to be concretised by cement and chipping.

Currently the Park is planning to purchase several equipment such as a slide projector, an overhead projector, a TV set and a video, VHF radio calls and 3 motorcycles. The equipment are aimed to improve the training activities, communication and transport. In order to make the equipment live longer, there should be routine maintenance according to manufacturer's instructions.

The fire fighting equipment are also necessary for the safety of the area. The study on the appropriate equipment needs to be done before they are purchased. These equipment are normally used during the dry season, therefore there should be a routine of servicing by greasing them so as to avoid them from getting rust.

Office equipment such as computers, printer, furniture and stationeries should also be purchased to meet demand. Three laptop computers and a printer are currently functioning well while the desktop is not functioning. As these are depreciating there is a need to replace them. Therefore during the plan period three computers - two laptops and one desktop and a printer shall be purchased. Furniture and stationeries shall be purchased according to the office demand.

According to present plan, the Park shall have three cars and eight motorbikes by 1998. These can be enough at the starting but with time some of them will be depreciated and thus should be replaced with new ones. Two cars – Toyota Land cruiser pickup, a double cabin and 5 motorbikes shall be purchased. These vehicles and motorbikes shall improve the Park transport service. To make the vehicles and motorbikes run, spare parts should be purchased accordingly to facilitate repairing and normal services.

Actions Implementation Schedule and indicators

Action	Indicator	Time frame				
		1998	1999	2000	2001	2002
Carry out servicing and maintenance of vehicles, motorbikes and all other tools and equipment	All vehicles are in order all the time	X	X	X	X	X
Purchase of furniture and stationeries	All required furniture are on use	X	X	X	X	X
Construct more office buildings at Jozani	Two or more office buildings constructed	X	X			
Renovation of the Jozani old buildings	All old buildings are in good condition		X	X		
Purchase of fire fighting equipment	Fire fighting equipment are in store	X				X
Construction of two staff houses	Two staff houses are complete	X	X	X		
Purchase of 3 computers: 2 laptops and 1 desktop and a printer	Three computers bought				X	X
Purchase of 2 cars: Toyota land cruiser pick up and a double cabin and 5 motorbikes	Two cars and five motorbikes available			X	X	X

2.2 INSTITUTIONAL CAPACITY BUILDING AND HUMAN RESOURCES PROGRAMME

It was observed that inadequacy conservation education among the communities and the staff members is one of the primary problem which leads to low management capabilities and inefficiencies. Lack of adequate financial resources for the Park management is as well the major cause of the core problems.

General Objective of Programme:

To improve the management capacity and associated human resource so as to efficiently and effectively implement the management plan of JCBNP.

Management actions

1. *Human Resources Requirements.* More staff are required to man the important sections of the park. The estimate of the required staff during the plan period is presented in table 1. This estimate based on the growth of the management and conservation activities. The activities of the community participation, conservation issues, conservation education and tourism management have shown significant advancement during the last two years. This situation is evidence that well educated and trained staff are needed to make more changes. Description of duties and responsibilities (job descriptions) should be given to each new staff so that to be able to hasten and evaluate their capability. The job descriptions are indicated in appendix

Table 1: Staff Requirement for ,JCBNP

POST 2002	STAFF 1998	STAFF
Head of Conservation Section.	1	1
Chief Park Warden	1	1
Conservation Education and Extension Warden	-	1
Conservation Conservation and Protection Warden	-	1
Community Service Warden	-	1
Tourism Warden	1	1
Ecologist	1	1
Assistant Community Service Warden	-	1
Assistant Conserv. and Protection Warden - East Coast	1	1
Assistant Conserv.. and Protection Warden - Mangrove	1	1
Head Park Ranger	-	1
Park Rangers	-	16
Park Guides	-	8
Administrator/Accountant	-	1
Cleaner	1	1
Driver	-	1
Secretary	-	1
TOTAL	9	14

2. Training Requirement. For effective implementation of the plan the level of education of the existing staff should be raised and more staff to be recruited. The efficiency and effectiveness of the staff are necessary to enhance implementation of the plan. The staff shall therefore need a more diverse knowledge, to include, specialisation in forest ecology, forest conservation, wildlife management, ecotourism management. Some posts are still held by under qualified staff. The holders of such posts should be given the opportunities for further higher studies. Alternatively, employment of qualified candidates needs to be done. In addition to this, staff who are unable to undertake higher education, should be given opportunities to take short courses or on-job training so that to able to improve their efficiency and effectiveness.

Various fields shall need to be trained to Staff including law enforcement, (e.g. legal procedures), ecology and resource management, community conservation, communication skills, tourism management, general administration, financial administration etc. The training officer of CNR in collaboration with the Head of Conservation Section and the Chief Park Warden shall organise appropriate training for the staff.

The long courses are to be administered by the training officer under the directive of senior officers of Conservation Section and CNR. The training plan shall need to be prepared and reviewed annually to suit the existing demand of the staff. The proposal for long-term training requirements for the staff is indicated in table

Table 2: Training Requirement for JCBNP Staff

POSITION	QUALIFICATION
Head of Conservation Section	M.Sc. Natural Resource management/Conservation
Chief Park Warden	BSc Forestry
Conservation and Protection Warden	BSc Forestry
Community Service Warden	Diploma in Community Forestry
Tourism Management Warden	Diploma in Tourism Management
Conservation and Education Extension Warden	Diploma in Forestry or Forestry Conservation Education
Assistant Community Service Warden	Diploma in Forestry
Assistant COPW – East Coast	Diploma in Forestry
Assistant COPW – Chwaka bay Mangrove	Diploma in Forestry
Ecologist	MSc. In Forestry Ecology or Wildlife
Administrator/Accountant	Diploma in Public Administration/Accountancy
Head Park Ranger	Certificate in Forestry
Park Ranger	O-Level and experience
Park Guide	Preliminary course in languages
Secretary	Secretarial and Office management course
Driver	Good licensed Driver, capable in writing and reading Swahili
Cleaner	Capable in writing and reading Swahili

Some villagers also need to be educated so that their skills in managing resources become updated. The community participation shall be more effective if members of communities are educated on law enforcement, community conservation for their surroundings. This knowledge to local communities shall however be conveyed to them through the conservation education and extension programme. The workshops, seminars and cross visits should as well be used to educate communities.

2. Welfare of the Park staff is in low profile and still has not received a priority especially staff at the stations, Jozani, Chwaka and others. They need to be provided with necessary social services such as dispensary, shops, and reliable transport for emergency illness. Lack of these important facilities, plus poor accommodation greatly contribute in lowering their morale and may decelerates their performance. The situation needs to be improved and make the condition conducive for living. When the living quarters and their condition are adequate it should be compulsory for the staff to

stay overnight at the stations. This shall make them to use their time efficiently and effectively for conservation and management activities. The development of necessary infrastructures is further described in section...

3. The staff is currently not well motivated. The monthly salaries they receive plus other benefits do not even suffice the purchasing of food in a month. As a result, their performance declines with time and the situation encourages malpractices such as accepting bribes. Efforts should be made so that the Revenue Retention Scheme should be established and the funds be raised and revolved for the Jozani management. From this fund the “Revolving Staff Motivation Fund” shall be established. The motivation fund shall assist the staff in solving their living problems. At least between 2 to 5% of the Park monthly revenue is to go to this pocket. The utilisation of the fund is to be defined by the staff themselves but the basis should be through loans. This can at least raise the morale and performance of the staff.

Other possible incentives for staff and villagers are *study tours* outside Unguja. This can give two advantages, namely training and motivation. The JCBCP should organise the trips through the CNR Training Officer. At least every staff should have one study tour per year. Representatives of the villages should also have a chance to participate every year. The staff should also be provided with working gears (uniforms and boots). It is necessary to have an effective motivation scheme for the staff.

Actions Implementation Schedule and Indicators

Action	Indicator	Time Frame				
		1998	1999	2000	2001	2002
Improved knowledge of law enforcement among the staff and villagers	Number of offences in forest resources among the staff and villagers	X	X	X		
Ensure retention scheme comes into forces	CNR operate retention scheme	X	X			
Ensure that revolving Staff Motivation Fund is prepared and presented to MALNR for approval	RSMF paper available and adopted	X				
Review training requirements for all levels of employees	New version of training plan adopted			X		
Training plan is annually reviewed and staff training conducted regularly	Reviewed training plan available	X	X	X	X	X
CPW/training officer seek for sponsorship for long courses from Zanzibar and outside	At least five staff sponsored for long courses	X	X	X	X	X
Park management organise seminars, study tours, cross visits and short courses for staff and villagers	Efficiency, effectiveness and awareness increase	X	X	X	X	X

2.3 COMMUNITY PARTICIPATION AND DEVELOPMENT PROGRAMME.

The main focus of programmer is to involve the local communities in managing and conserving the JCBNP in sustainable basis. It describes the sub-programmes with their actions that targets towards incorporating the communities' views in management of JCBNP. The actions that aim at reducing the dependence of the communities upon the remaining forest resources have also been explained in this programme. The means of eliminating or reducing the long time conflicts between CNR/JCBNP and communities for purpose of creating a good relation have too been narrated.

Development Objective of Programme:

Promote people's understanding and awareness and incorporate their views in the resource management to complement other conservation measures for long term conservation sustainability of the resources, while providing social, economic, cultural and environmental benefits to local communities.

2.3.1 Building of Community Management Capacity Sub-programme.

In the context of JCBNP management, seven villages that surround the area are the main focus. These villages are to be involved in sustainable management so as to meet the Conservation objectives of JCBNP. The villages are Pete/Jozani, Unguja Ukuu, Cheju, Charawe, Ukongoroni, Chwaka and Bwejuu. However, during the second phase of Project, other eight villages are also to be involved for the purpose of widening the community participation. The villages are Kitogani and Paje.

Specific Objective of the Sub-programme:

Mobilise, encourage and facilitate the communities in formulating their administrative organs and plans that will assist and monitor the sustainable utilisation of the remaining natural resources in their villages as well as in JCBNP.

Management actions.

1. *Support and strengthen Village Conservation Committees.* At the moment, each village has its Conservation Committee. Through these committees, the villagers have been involved in different levels of decision-making concerning the JCBNP management and their welfare. The activities of these committees should be sustained so as to achieve the Conservation Aim of the Park and their surroundings. The committees must be provided with the technical advises by the JCBNP Officers who should work very close to Committees all the time. The members of each committee are villagers and one JCBNP Officer.

The responsibilities of the committee are:

1. Supervise the utilisation of the resources according to JCBNP regulations.
2. Under the facilitation of JCBNP, prepare/finalise the Shehia Management Plan
3. Collect the revenues from the natural resources harvested in their Shehia and spend the money for social development of the Shehia.
4. Prepare the bylaws to control the utilisation of the resources in their Shehia.
5. To assist and support the JCBNP in minimising/preventing the illegal activities.

The responsibilities no 3 - 5 will cease to be utilised immediately after the production of Shehia Management Plan and approved by the MALNR.

The technical and administrative capability of the Conservation Committees shall be improved through seminars and study tours.

2. *Strengthen Advisory Committee.* The Advisory Committee composed of members from CNR/JCBNP and Communities will continue to provide advises to CNR/JCBNP and Village Conservation Committees for the purpose of improving the community participation in protecting and conserving the remaining natural resources. The Natural Resource Management Education Sub-committee has been formed under this committee and has already accomplished the Education Programme.

This committee should be strengthened by establishing other two sub-committees and these are Mangrove Sub-committee and Agricultural input Follow up Sub-committee.

3. *Finalise Shehia Management Plans and process their approval.* Fifteen villages are to have Shehia Management Plans. The first seven (see 2.1), which have been involved in conserving JCBNP since 1996, should have their plans ready by 1999. Other eight new villages (see 2.1) are to be involved right from 1998. These villages should have their plans ready by 2002. Preparation of the plans shall be facilitated by JCBNP.

The planning process has already started and some villages have completed or have reached advanced stages. Due to significance and importance of these plans for the development and survival of Shehia forests and JCBNP, any completed plan should immediately be processed for approval. In addition, these locally developed management plans should be implemented and evaluated so that they constantly suit the prevailing circumstances.

The plans are intended to empower the communities around the JCBNP to more sustainable manage their own natural resources base in partnership with the JCBNP. This will in other hand makes the communities support and participate in the management and conservation of the Park and its resources.

The formulation of these plans follows the “Guidelines for the Community Management of Shehia Forests in Zanzibar” by Andrew William, 1996.

4. *Process the Approval of Revenue Sharing Scheme.* The communities around Jozani bear substantial costs and sacrifices for the sake of conservation of JCBNP and its resources. The magnitude of costs bared vary between villages. This range from mere abstinence from utilising the resources to crop raiding by wildlife to the people’s crops. To mitigate the situation and enhance community support in the Resource Conservation and Management, the community should enjoy the financial benefits from the JCBNP revenues.

The proposal for the Scheme has been prepared and presented to MALNR for processing its approval. It is therefore essential to undertake the following up of it and gets the result with no long delay. In situation when RSS is not legally accepted, CNR should use the Forestry Revolving Fund principle to make communities enjoy and thus provide full support to Conservation objectives of JCBNP.

The decision of spending the fund shall be done by the villagers themselves but it should

focus towards raising the social development of the villages. The JCBNP should also take the responsibility of advising and motivating the villages to develop the projects that suit their environment.

5. *Community and JCBNP Liaison Development.* JCBNP managed under a newly adopted concept “Community Participation” has revealed and faced many problems related to communities’ activities. These problems have been in hands of the communities for many years and in fact contributed to the past poor relation between CNR and Jozani Forest Reserve. These existing and future problems shall need to be solved jointly between the JCBNP and Communities so as to create a harmonious situation of implementing the conservation activities. Agreements/resolutions shall need to jointly be formulated between JCBNP and communities, which can help to solve the problems.

Under this action, the following mini-actions need to be done so as to establish a good liaison between two parts.

5A. JCBNP should establish *Management and Follow up Committee*. It will be responsible to monitor and evaluate the implementation of agreements. The Committee will be composed of ten members of whom six are village representatives and four CNR/JCBNP permanent representatives. The chairperson and secretary of Advisory Committee will be the members of this Committee by virtue of their positions.

The committee members are as listed below:

- 1 Head of Conservation section - Commission for Natural Resources
2. Chief Park Warden - Commission for Natural Resources
3. Assistant Community Service Warden - Commission for Natural Resources
4. Chairperson of the Advisory Committee
5. Secretary of the Advisory Committee
6. One community member representing youth group
7. One community member representing elders’ group
8. Two community members representing women group
9. District Forestry Officer - Central/South

Regular meetings will be conducted to evaluate the implementation of agreements. JCBNP will jointly evaluate the progress with community and submit an evaluation report to higher authority. Assistant Community Service Warden (ACSVV) will be responsible for the conduction of these meetings.

ACSW shall also function as Conflict Officer responsible for doing following up of the implementation of the approved agreements. He/she will be required to prepare the implementation plan for the agreement activities to co-ordinate and oversee their success. He/she will also be responsible for processing the ways of solving the raised problem during the implementation of the plan and report back to his/her authority.

5B. JCBNP should continue with tourism activities on private land at Jozani only (the land currently used by Red Colobus Monkeys for feeding and resting). The owners of land should enjoy direct benefits by having a share for the revenue collected. This will be the compensation for damaged crops and consequently promote willingness of land owners to accept the effect of Red Colobus Monkeys to their crops. It will also promote the conservation role of Landowners as stakeholder.

This activity is different to Revenue Sharing Mechanism, as this focuses to the owner of the land as defined by the Land Policy and Legislation. To fulfil this a study shall need to be done with an objective of quantifying the loss of each landowner. On knowing this agreement is to be processed between the Landowners and JCBNP on amount to be paid for each specified period.

JCBNP should then prepare Compensation Mechanism that will define the methods of compensating the villagers. The proposal should then be submitted to higher authority for approval processing.

Actions Implementation Schedule and Indicators.

Management Actions	Indicators	Time Frame				
		1998	1999	2000	2001	2002
Support and strengthen Village Conservation Committees	Seminars and study tours for villages conducted	X	X	X	X	X
Strengthen Advisory committee	Mangrove and Agricultural inputs follow up sub committees established	X				
Shehia Management planning	7 Shehia plans finalised and approved by MALNR 8 plans of other new shehias prepared and approved by MALNR	X	X	X	X	X
Process the approval of Revenue Retention Mechanism	Approved Mechanism adopted and implemented. The benefits realised by the communities	X	X	X	X	X
Conduct meetings	Minutes of both VCC and AC. Agreements reached between communities and CNR/JCBCP	X	X	X	X	X
Establish management and Follow up subcommittee	Sub committees formed and function as mandated	X	X	X	X	X
Appoint ACSPW as an officer responsible for Conflict resolution	An officer appointed and the problems co-ordinated for their agreements and solutions	X				
Allow ecotourism on private individual or family land	Compensation mechanism for affected land owners prepared and submitted to MALNR for approval		X			

2.3.2 Community Socio-economic Development Sub-programme.

The communities living in the vicinity of JCBNP are poor and are mainly depending upon the natural resources for their survival. Some of the forest areas they used to depend on, were gazetted as Reserve in 1980's. These areas were joined to original Jozani Forest Reserve and made the Reserve bigger. This step was advantageous to biodiversity conservation but left the communities with insufficient land for their life

activities. With the human population explosion, the resources in the remaining areas have been increasingly facing the utilisation pressure, a factor that have made them degraded. With this situation, the JCBNP can only be safe if the communities are educated on the importance of the existing conservation area together with provision of life alternatives.

This sub-programme is trying to present some actions that the community can use to earn their life and in turn reduce their dependence on JCBNP resources.

Specific Objective of the Sub-programme:

Initiate and promote the production means of life for villagers residing around JCBNP so that they minimise their dependence upon the remaining natural resources.

Management actions.

1. *Training communities on alternative means of employment.* The burden of encroaching the JCBNP can be minimised if the people have other activities to enable them fetching their life. JCBNP should take responsibility of facilitating the villagers in creating new means of earning life. This action will in turn help the JCBNP to be protected from further encroachments. The findings of two studies by Raworth (1997) and Young (1997) need to be used in mobilising the villagers to engage themselves in alternative means of life. It is also necessary to study more proper alternative means of employment and then train the communities. Study detail is indicated in sub-programme 2.3.3.

2. *Establish production groups in the village.* The villagers will be mobilised to assemble themselves into production groups and the existing ones be promoted to a good status. The groups shall manufacture any kind of commodities marketable to society provided they do encourage the over utilisation of remaining natural resources. The production group leaders will be educated on how to carryout proper management that leads to high production. Bookkeeping knowledge shall also be educated to group cashiers so that proper recordings are kept. This work should be done with a full co-operation of Department of Co-operatives.

3. *Open Souvenir shop.* Through Advisory committee the communities shall be encouraged to open a souvenir shop and run for their benefit. The capital for opening a shop needs to be provided by JCBNP on loan basis. The shop can be placed at Pete/Jozani or Unguja Ukuu and it will sell the handicrafts mainly produced by dwellers of villages involved in conserving JCBNP. The shop shall buy the handicrafts from the dwellers and sell them to tourists. The income generated by shop shall be used for developing the social services in the villages.

4. *Identification of reliable markets.* When the production in the villages is higher it could only be meaningful and well motivated if the villagers get the markets to sell their products. JCBNP should therefore bear the responsibility of helping the villagers to seek the markets of selling their products. Co-operation with the Zanzibar Chamber of Commerce will need to be established because it can help to seek the markets. It is however necessary for villagers to produce good quality products to attract the market.

5. *Meetings and seminars.* Several meetings and seminars shall be organised and conducted in villages. The aim of meetings shall be to educate and mobilise villagers to adopt the idea of engaging themselves in alternative employments/means. The seminars will target towards providing better knowledge of running their groups and discussing the raising issues concerning alternative employments/means.

6. *Increase the agricultural production.* Traditional farming still exists in villages surrounding the JCBNP. This has caused the production to be low due to the fact that no new technology is applied. The common farming system applied is shifting cultivation that is a key player in reducing the forest areas. The reduction of forest areas leads to dispersal of wildlife to agricultural areas and raid the crops. The following are the means to be done in order to increase the agricultural production.

6A. *Minimise vermin raiding to agricultural crops.* Crop's degradation is one of the long-term maintenance that has to be endured by the communities for the benefit of conservation of JCBNP. The main culprit blamed for this is the Red Colobus Monkey. Several studies have been carried out to assess the extent of the problem. So far, it has become difficult to give precise data on the magnitude of crop raiding and the economic loss they inflict to the communities. However, the problem is real and it touches several communities in the vicinity of the JCBNP. To reduce the problem, the studies need to be as explained in sub-programme 2.3.3.

6B. *Preserve wildlife habitat.* To stop more dispersal of wildlife especially Red Colobus Monkeys to farming areas and destroy the crops, the remaining habitat patches should be left undisturbed. These are those found in the JCBNP and some unreserved areas. The communities through their Shehia Management Plan should be involved in preserving the JCBNP because is the only remaining large patch of forest - refuge. The unreserved areas where possible should also be preserved for the benefit of wildlife.

6C. *Increase land fertility.* The soil in the villages surrounding the JCBNP is coral and shallow. The deep soil is only found in Cheju rice farming areas. The coral soil loses its fertility in short time after being utilised for farming. This situation has occurred in the villages and caused the diminishing of agricultural production. This problem needs to be solved by increasing the land fertility through various studies to explained in sub-programme 2.3.3.

The study of *agroforestry opportunities* around JCBNP has been done and the results are ready for implementation. The villagers will be educated and encouraged to apply this technology because it may reduce the shifting cultivation. It should however be applied under research basis so as to identify the most appropriate tree species. The leguminous tree species are to be more encouraged because they are nitrogen fixers.

6D. *Prepare Shehia Land Use Plan.* Each Shehia or village shall have its Land Use Plan. The preparation of the Plans is to be done by communities themselves under joint facilitation of CNR and the COLE. The maps will be produced to show the boundaries and different areas of use. Also the plans shall provide the direction on how economic and social activities are to be managed in the Shehia/village. Utilisation of the natural resources shall also be directed by the Land Use Plan.

6E. *Follow up of Agricultural inputs.* It is recommended that an agriculture sub-committee under the JCBNP Advisory committee be established and mandated with the responsibility of taking care of the agricultural inputs necessary for the development of

JCBCA areas. The sub-committee will also co-ordinate with all institutions dealing with agriculture in JCBNP. It is however necessary that this sub-committee to be introduced to agricultural institutions for the sake of recognition and hence performs its duties without constraints.

Actions Implementation Schedule and Indicators

Management Actions	Indicators	Time Frame				
		1998	1999	2000	2001	2002
Train the communities on alternative means of employment	Dependence of communities on JCBCP resources to be reduced by 30%	X	X	X	X	X
Mobilise the formation of production groups	Production groups to increase by 50% Production of commodities in villages to increase by 50%		X	X	X	X
Open souvenir shop	A shop fully equipped with local handicrafts A market for local handicrafts realised	X				
Identification of reliable market	Commodities produced in villages sold in large quantities	X	X			
Conduct seminars and meetings	60% of villagers engaged in alternative means of employment Productions are run properly	X	X	X	X	X
Minimise vermin raiding	Increase of crop production in affected areas realised				X	X
Preserve wildlife habitat	Dispersal of wild animals to wild animals reduced			X	X	X
Increase land fertility	Agriculture crops in the villages increase by 50% Dependence of villagers on JCBCP resources reduced		X	X		
Prepare Shehia land use management plans	Plan prepared and villages' land used accordingly	X	X	X	X	X
Follow up of agricultural inputs	Agriculture sub-committees under JCBCP Advisory committee formed Agricultural inputs distributed to peasants in time	X	X	X	X	X
Establish agroforestry	An increase of number of trees planted by villagers realised	X	X	X	X	X

2.3.3 Community Socio-economic Research and Monitoring Sub-programme.

Community participation in managing and conserving the JCBNP is a new concept as far as the Zanzibar natural resources management is concerned, It is a sensitive issue because it endeavours to push the communities to deliberately decide to use the

resources in the manner that they are not exhausted for benefits of present and future people. This situation proves difficulty in the absence of alternative means of life. This sub-programme is intended to presents some highlights of doing studies and researches targeting towards promoting the community participation through improving the life standard of dwellers in the vicinity of the Park. The results of studies/researches shall remain as a tool in modernising the community involvement in managing the natural resources.

The studies/researches are to be done by the local officers/institutions and external consultants/agencies when financial situation allows or using their own cost. However, it will be obligatory for them to get a permit from Zanzibar Agriculture Research Council before starting the studies/ researches.

Specific Objective of Sub-programme:

Initiate and encourage the community-based researches/studies which target towards improving the community participation and raising communal life standard.

Management Actions.

Studies/researches can be designed in different ways but the recommended priority research topics are as listed below:

1. *Study on alternative means of employment in villages involved in managing JCBNP.*

The objective of study shall be to investigate alternative means of employments other than using forest resources existing in the villages and market for the products to be manufactured from the investigated jobs.

2. *Research on introducing the crops unpalatable to Red Colobus Monkeys.*

The objective research to study the crop species both cash and food, which are less palatable or unpalatable to Red Colobus Monkeys. The crops are to be planted in trial plots around JCBNP and monitored its performance and productivity. If they prove successful, then villagers should be educated and encouraged to plant them. Positive results of the study will promote agricultural production in villages.

3. *Study the appropriate techniques of chasing the vermin from farming plots.*

The objective of study to investigate the techniques of chasing the vermin from the farming areas without disorganising their living behaviour. Positive results of the study shall help to reduce destruction of agricultural crops in villages.

4. *Research on ecology and crop raiding behaviour of vermin.*

The study of ecology and crop raiding behaviour is to be done to Red Colobus Monkey which is currently considered by the communities as destructive to agricultural crops. The study shall target towards identifying the magnitude of the raiding and the economic loss encountered by peasants.

5. *Research on soil improvement and agro forestry in coral rag areas.*

This research will target towards improving the coral soil around JCBNP for the purpose of raising the agricultural productions. The indigenous knowledge of fertilising the land shall be one among the methods to be utilised in improving the soil under research basis. Agroforestry practices are to be improved to seek the best leguminous tree species. The positive results of research will be disseminated to all villagers for application.

6. *Study on JCBNP community utilisation levels and its environmental impacts.*

The objective of this study is to find out the degree of resources utilisation by the communities around JCBNP and its environmental impacts. This study will help to recognise the relationship between the communities' resources utilisation and environmental impacts.

7. *Study on level of utilisation of basketry materials (Phoenix reclinata young leaves).*

This study will target towards investigating the amount of basketry materials which can be supplied by the JCBNP Phoenix tree species and the amount collected by the women. In other words, to study supply and demand of the basketry materials of JCBNP. This study will help in monitoring the harvesting of basketry materials in JCBNP.

Actions implementation Schedule and Indicator

Management Actions	Indicators	Time Frame				
		1998	1999	2000	2001	2002
Phase one studies: Alternative means of employment Crops unpalatable to red colobus Soil improvement and agroforestry in coral rag areas	Three study reports	X	X			
Phase two studies: Ecology and crop raiding behaviour of vermin Techniques of chasing vermin from farming areas	Two study reports			X	X	
Phase three studies: JCBNP community utilisation and its environmental impacts Levels of utilisation of basketry materials	Three study reports				X	X

REMARKS:

CNR/JCBNP shall identify and communicate with the potential individuals and institutions to conduct the studies and researches. Monitoring of on-going studies/researches is also to be co-ordinated by the JCBNP.

3.4 CONSERVATION EDUCATION AND EXTENSION PROGRAMME.

The people living in the vicinity of JCBNP recognises the conservation importance of the resources. However, economic hardship and poor understanding of conservation principles are the main reasons that are still forcing the communities to encroach into JCBNP. To minimise this hazardous situation, the Conservation Education and Extension programme has been initiated for the purpose of educating and raising awareness of the communities on matters pertaining to conservation. This programme remains as an integral part of conservation strategy in this plan.

It is necessary that communities are educated over the need of conservation of resources in JCBNP for their continued sacrifices. Similarly, the conservation principles and benefits should be educated to younger generations so as to have sustained understanding and appreciation of the conserved Resources.

Different methodologies and approaches have to be formulated and employed. This may require soliciting support and participation of other sectors such as CoRE (MALNR), CoT, DoE, FS and IMS. The Annual Conservation Education Plan for JCBNP will also be developed to indicate the objectives, methodology, inputs etc. Also within the Plan, the following are to be indicated.

General Objective of Programme:

Promote the forestry and wildlife conservation education and deliver it to communities so as to have positive support of people in conserving the remaining natural resources.

Management actions.

1. *Target audiences.* Two groups of communities are important and are the main target. These are:

Adult audience: men, women and influential.
Young audience: non-school going
school going - primary school pupils
- secondary school students.

The adult population is the primary target group since it has a direct and immediate impact on the JCBCA.

2. *Equip staff with appropriate knowledge and facilities of conservation education.* CNR/JCBNP shall provide the conservation education staff with proper literatures and equipment to make them conduct their activities suitably.

The educational messages to be conveyed to communities need to be clear and understandable. It must be carefully discussed and comprehended clearly by the presenter before presentation. The messages can base on the following aspects:

- The knowledge about the JCBI\4P.
- The protection and conservation importance of JCBNP.
- The environmental benefits of JCBNP to the local community, Zanzibar and international community.
- The economic merits of JCBNP to the local community and Zanzibar.

- Better utilisation of existing natural resources.
- The importance of community participation in conserving the resources around their surroundings and in JCBNP. . -
- The enemies of the forest e.g. fire
- Any subject that enhances the conservation status of the JCBNP.

3. *Conduct drama plays competition.* Conservation staff shall continue to mobilise the schools available in all involved villages to do drama plays competition and the first, second and third winners be awarded special gifts.

4. *Equip and decorate information centre.* The information centre shall be up-to-date with all-important JCBNP information for the use of education. The communities especially students/pupils and non-school going children will be given the opportunity of visiting the centre and educate themselves. Educative materials including pictures, literatures, leaflets, post cards, etc are to be purchased or manufactured and housed in information centre.

5. *Conduct educational use for JCBNP.* The schools of the whole Unguja will be contacted and encouraged to visit the JCBNP. The pupils/students will be provided with the knowledge about the JCBNP and conservation issues. The CNR officers will also visit schools to educate and inform pupils/students about the significance of JCBNP and its species and about the nature conservation in general. Close co-operation with teachers is needed to prepare the education programmes and educational material for different levels of school children.

6. *Organise the production of educating materials.* Educational materials for disseminating the information of important conservation aspects of JCBNP shall be prepared and distributed to several educating institutions. The JCBNP can consult the Agricultural Information Section of MALNR for better designing of the educational materials.

The educational materials - leaflets, video films, information boards - will be up-to-date with time.

7. *Consult the mass media and Tanzania Post Company.* The mass media such as TVZ, Radio and new papers are to be used to air the educating issues of JCBNP. TPC is also to be consulted for advertising the floral and faunal endemic and threatened species of JCBNP through the stamps. Meetings, seminars and workshops are also to be used for educating village leaders, district, regional and national leaders.

8. *Develop Annual Conservation Education Plan.* Conservation Education Officer shall, after consultation with other concerned sectors, prepare the Plan to accommodate all education—arid extension activities. The preparation shall be done in November and December.

9. *Distribute the educating materials to target audiences.* Conservation Education Staff shall distribute the materials to target audiences in a well designed method that make them understand and appreciate the messages.

10. *Co-operate with schoolteachers.* Conservation Officer shall establish a good relation with schoolteachers and involve them in preparing the education programmes for their pupils.

11. *Consult other sectors/institutions for advises/assistances.* JCBNP shall establish good relations with sectors/institutions that are helpful in conservation education and extensions services.

12. *Establish a Conservation Education Centre.* The centre for training the school pupils/students shall be established at Jozani. Its purpose will be to give more chance of learning the conservation issues of the Park and hence raise its awareness.

Actions Implementation Schedule and Indicators.

Management Actions	Indicators	Time frame				
		1998	1999	2000	2001	2002
Equip field staff with the appropriate knowledge and facilities of conservation education	Staff perform their jobs efficiently and effectively	X	X	X	X	X
Conduct drama plays and competition	Drama plays competition to involve all schools around JCBCP every year	X	X	X	X	X
Equip and decorate information centre	Information centre well and equipped with educative materials	X		X		
Conduct educational use for JCBCP	Students/pupils visit JCBCP to ecological issues	X	X	X	X	X
Organise the production of education materials	Education materials produced as designed	X		X		X
Consult the mass media and the Tanzania Post Company	Education programmes aired and pictures of important flora and fauna are seen in stamps	X	X	X	X	X
Develop Annual Conservation Educational Plan	Conservation Education plan prepared	X	X	X	X	X
Distribute the education materials to target audience	Understanding and awareness of target audiences increase and as result illegal undertakings in JCBCP reduce	X	X	X	X	X
Co-operate with school teachers in preparing the education programme	Appropriate education materials for schools prepared	X	X	X	X	X
Consult other sections and institutions for advice	Good co-operation in education programmes realised	X	X	X	X	X
Establish conservation education centre	Centre functioning at Jozani.				X	

2.5 CO-OPERATION DEVELOPMENT STRATEGY.

The conservation of JCBNP and implementation of the management plan calls for a joint effort from local communities, regional authorities, many national institutions, international organisations, NGOs, researchers and tourism developers.

The kind of co-operation required has been elaborated in some actions. However, this

strategy shall give more detail of the co-operation to be established in order to smoothen the implementation of the plan.

Specific Objective of Strategy:

Maintain and promote co-operation and good relation with all stake holders governmental, NGOs and international.

2.5.1 Local Co-operation.

CNR/JCBNP should establish a good co-operation with national institutions and NGOs available in Zanzibar. Under this co-operation JCBNP should seek the advises from the institutions/NGOs that will help to smoothen the implementation of the programmes especially those that touches the direct development of the society.

2.5.1.1 National institutions.

The main co-operators are:

All sections of CNR.

Close collaboration among the sections of the Forestry Sector is needed during the implementation of the management plan. The sections are:

- Conservation education.
- Village forestry Extension education.
- Planning Research, plan monitoring and evaluation.
- Nursery Seedling production.

Fisheries Sector.

Its area of co-operation is the conservation and management of marine life and mangrove forest of Chwaka Bay.

Also, JCBNP through the CNR shall co-operate with the following national institutions:

Commission for Research and Extension.

Co-operation areas: Agricultural researches/studies and Agricultural extension.

Commission of Agriculture and Livestock.

Co-operation area: Obtain and distribution of agricultural inputs to communities.

Commission for Tourism.

Co-operation areas: Development of ecotourism activities and advertising JCBNP tourism attractions.

Commission for Lands and Environment.

Co-operation areas: Preparation of Shehia Land Use Plans, Conducting the E1As f or

mini projects to be done in and around the JCBNP, Conservation of natural resources, Developing the conservation education activities, Monitoring the ecological processes and Enforcement of the laws.

Regional and Local Authorities.

Co-operation areas: Promote Community Participation at Ward and Shehia levels and in resolving Shehia boundary conflicts.

Ministry of Women and Children.

Co-operation areas: Mobilise women to initiate small projects and Organising credits for village women.

Ministry of Planning

Co-operation area: Promoting Human Nutrition in villages

Department of Co-operatives.

Co-operation area: Educating the production group leaders on administrative matters and book-keeping.

Institute of Marine Science.

Co-operation area: Monitoring of ecological activities undertaken in Chwaka Bay.

Regional Education Office.

Co-operation area: Designing of education programmes for school pupils.

2.5.1.2 Non-governmental organisations.

The co-operators are:

Zanzibar Chamber of Commerce.

Co-operation area: Finding the markets for products to be produced in villages.

Conservation NGOs and Environmental Clubs.

Co-operation area: Educating the mass on importance of conserving the remaining

natural resources.

2.5.2 Co-operation with International Organisations and NGOs.

JCBNP through CNR shall need to have collaboration with international organisations and NGOs for technical and institutional support. As the biggest Conservation area in Zanzibar, the area needs to be properly conserved so that national and global conservation interests are met. Currently JCBNP is in a process of making it as one of the World heritage Areas.

The financial situation of the Government is currently poor and therefore donations from international organisation will be required to conserve and manage the JCBCA. Some of the organisations to be contacted are IUCN, FAO, WWF, AWF and CARE.

3.0 MONITORING AND EVALUATION OF THE PLAN.

3.1 Monitoring

This plan contains programmes and actions to be undertaken for the period of five years -1998 to 2002. The plan for implementing the management actions is indicated in Table The indicators for monitoring the implementation of each action are given under each programme and for evaluation of the plan. In addition to existing indicators, monitoring and evaluation systems will be prepared to establish more workable indicators. The plan can be changed or reviewed to suit the real situation. This may also affect the timing of actions within the five years period.

For smooth implementation, Annual Action Plan shall be prepared to direct actions in more detail and to make detailed budget. Each component of the park shall be required to prepare his/her annual activities and budget and present it to JCBCA annual budget meeting for discussion. Then, the Chief Park Warden (CPW) shall compile and document the annual action plan. The Head of Conservation and CPW shall be responsible for co-ordinating and supervising all implementation actions of. To do these, regular meetings involving all park officers shall be essential.

The Advisory committee will also meet monthly to discuss the matters concerning the JCBCA and issues of communities.

Monthly, quarterly, semi-annual and annual reports shall be prepared for monitoring and evaluation of the implementation by the CPW and Head of the Section and present them to higher authority. Regular evaluation produces information that is helpful in reviewing the plan and preparing next the annual action plan.

3.2 Evaluation

The implementation of the plan shall be evaluated at the end of planning period i.e. in the year 2002 to measure its success. The results of evaluation are important, as they will be the basis for formulating next long term plans. Evaluation is recommended to be done by a multidisciplinary team consisting of members from Forestry Sector, Fisheries Sector, Commission for Tourism, Department of Environment, Commission for Revenues, Commission for Agriculture and Livestock, Regional Administration and a Representative of Communities.

The team shall evaluate the success of objectives by investigating how much the degradation of natural resources has been reduced in JCBCA. Economic, environmental and social merits and demerits of the plan shall also be evaluated for the benefit of future plan.

Community participation is a new and sensitive component in managing the natural resources; it will therefore need a special attention in evaluating process for purpose of realising its weaknesses and strengths. This will help in redesigning the method of involving the communities in the sustainable management of natural resources.

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Appendix 1: JOB DESCRIPTIONS FOR JCBCA STAFF

1. Head of Conservation:

Responsibilities: Work as head of the Conservation section of the CNR in Zanzibar.

Main duties:

1. Plan, organise and manage conservation activities and the staff in the Conservation Section
2. Supervise and organise all the conservation activities under JCBCP making sure that implementation is in accordance to the National Forest Policy
3. Prepare activity plan for the Conservation Section and produce monthly, semi-annual and annual reports to the Commissioner of Natural Resources through Chief Forest Officer and produce reports to the Conservation advisor for JCBCP
4. Give assignments to, supervise and evaluate achievements of conservation staff
5. Advise Commissioner and Deputy Commissioner of Natural Resources on issues related to conservation
6. Maintain good collaboration with other sections in the CNR as well as COLE and other institutions
7. Work very closely with communities towards sustainable use of forest resources and watersheds in collaboration with Village Forestry, Regional Authorities and other partners
8. Co-ordinate conservation research, studies and projects
9. Carryout any other duties assigned by the superior.

2. Chief Park Warden (CPW). Duties and Responsibility:

Responsible for overall conservation and management of JCBNP, and specifically concerned on:

1. National Park Management Plan Implementation
2. Financial management, infrastructure development, institutional capacity building and human resource development and co-operation development.
3. Prepare annual plan of operations according to the JCBNPMP and supervise its implementation
4. Ensure that revenue from all sources including tourism is properly collected and recorded.
5. Promote relationship with communities around the Park and other stakeholders.
6. Assist and co-operate with researchers coming to Jozani for studies.
7. Maintain and provide custody for Government's tools and equipment for Jozani
8. Prepare progress reports: monthly, quarterly, semi-annual and annual and submit them to the Head of Conservation Section.

3. Tourism Warden (TW)

Main duties:

1. Overall in-charge of Tourism management in the Park.
2. Organise the proper system of receiving and serving all visitors entering the Park.
3. Supervise the registration of visitors, revenue collection and maintain tourists statistics.
4. Make regular review of entrance fees and submit the proposal to higher authority.
5. Ensure that the Park has sufficient and competent tourist guides.
6. During the periods of low season, will co-operate with Conservation Education Warden to disseminate conservation education to village communities around the Park.
7. Prepare progress reports and action plans as directed by the Chief Park Warden.
8. Publicise JCBNP as conservation and tourism area.
9. Perform any other duties assigned to him by Chief Park Warden.

4. Conservation Education and Extension Warden (CEEW)

Main Duties:

1. Overall in-charge of Conservation Education activities in JCBNP.
2. Extend the knowledge and concept of natural resources conservation in schools, villages, Government organisations and NGOs through mass media, direct contact, seminars, workshops, publications and other means.
3. Prepare Conservation Education Plan for JCBNP.
4. Prepare educational materials for specified target group
5. Work in close collaboration with Village Forestry and other extension agencies
6. Prepare progress report and action plans as directed by Chief Park Warden.
7. Carryout any other duties assigned by the head of conservation section

5. Community Service Warden (CSW) Main Duties:

1. Overall in-charge of all Community Development activities.
2. Promote community involvement in the management and conservation of resources within and around JCBNP for their benefit.
3. Facilitate the preparation of Shehia Conservation Plans.
4. Initiate and promote the appropriate means of income generation.
5. Strengthen the relationship with Conservation Education Component of the Park, Village Forestry and their governmental and non-governmental organisations dealing with conservation.
6. Prepare progress report and action plans as directed by CPW.
7. Carryout any other duties assigned by the CPW.

6. Conservation and Protection Warden (COPW).

Main duties

1. Is responsible for overall conservation and protection activities of JCBNP.
2. Responsible for planning and supervising conservation and Protection staff.
3. Plan and monitor all conservation and protection activities of JCBNP
4. Make sure that all activities follow conservation ethics
5. Maintain forest and other related laws including the park regulations
6. Prepare weekly patrolling report and submit it to CPW
7. Prepare monthly, quarterly and bi-annual reports and submit them to CPW
8. Carryout any other duties assigned by CPW

7. Park Accountant. Main duties:

1. Overall in-charge of all financial transactions
2. Ensure the revenue sharing among the stakeholders.
3. Supervise and control the procurement of the Park.
4. Prepare progress report and action plans as directed by CPW.
5. Carryout any other duties assigned by the CPW