

# Reference Landscape: Jozani Chwaka Bay Conservation Area (JCBCA)

## 1. Introduction

Jozani Chwaka Bay Conservation Area (JCBCA) consists of a protected core area of 56sq km and a buffer in excess of 80 sq km. It also consists of Jozani Chwaka Bay National Park -the only national park in Zanzibar. The conservation area was created for the conservation of the endangered species of animals and plants. These include the Red Colobus Monkey, which is only endemic to Zanzibar and other wide range of wildlife species including the rare Zanzibar Sykes' monkeys, bush babies, duikers, and varieties of butterfly and bird species.

JCBCA is surrounded by 9 villages located near the forest reserve. These are Jozani/Pete, Kitogani, Bwejuu, Michamvi, Ukongoroni, Charawe, Cheju, Chwaka, and Unguja Ukuu.

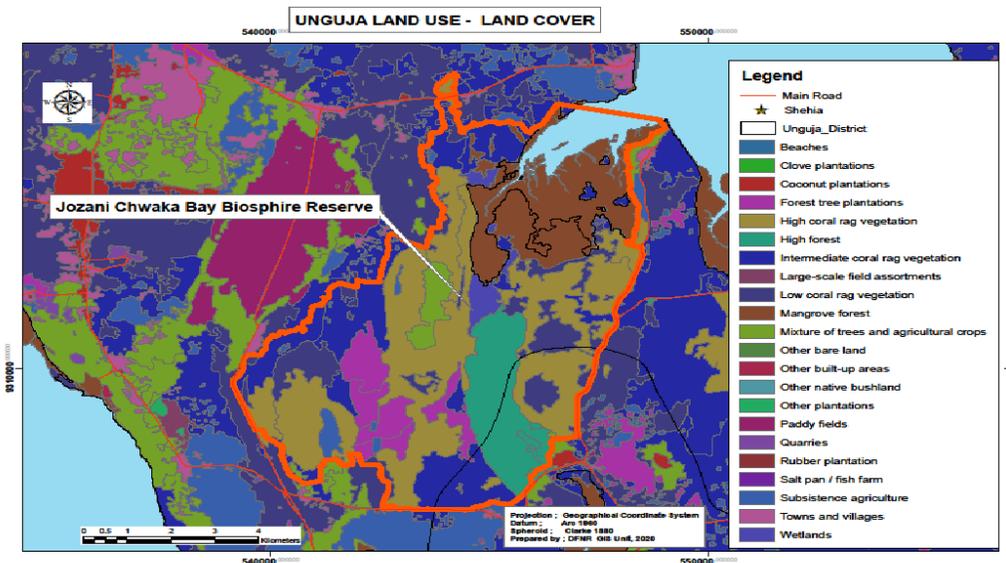


Figure 1. A map showing land cover for Jozani-Chwaka Bay biosphere reserve, and its surrounding villages.

This profile of the landscape was prepared as a resource for use during the Landscape Climate-Smart Agriculture (LCSA) training of trainers (ToT) for Tanzania under the Building Capacity for Resilient Food Security project that is funded by the USDA. It was prepared by IITA research team led by Catherine Njuguna and Freddy Baijukya with support from the ToT facilitation team and is based on the experiences of of the Jozani-Chwaka Bay Conservation Project, an integrated conservation and development project by the Zanzibar Department of Commercial Crops, Fruits and Forestry (DCCFF), CARE Tanzania and and the communities adjacent to the project area organized under Jozani Environmental Conservation Association (JECA).

## **2. Landscape description**

### **2.1. Geography**

JCBA has a diversity of woodland landscape, which features tidal water-washed areas between Chwaka Island bays and Uzi, mangrove trees and a variety of marine vegetation. There are colorful fish species in the water at the bay including mollusks and crabs. Its landscape is therefore a mosaic of mangroves, tropical forests and coral rug forests, as well as groundwater, salt marshes, and agricultural and residential areas making the area a biodiversity hotspot. The biodiversity of Jozani includes a unique swamp forest.

The area is virtually flat, with the exception of groundwater forest, which features moderate slopes on the western and eastern sides. The soil of the Jozani forest is rich, black and highly organic, but ceases abruptly at the forest margin, giving way to broken coral rag with shallow pockets of light brown sandy soil. It floods seasonally, creating a forested wetland for bird species, aquatic invertebrates, amphibians and freshwater crab.

### **2.2 Climate**

The climate of the area is determined by geographical location and seasonal changes brought by the general circulation of air over the Indian Ocean. The monsoons have the dominant influence on wind direction and strength, temperature and rainfall. The northwest monsoon (Kaskazi) prevails from November to February and is characterized by high air temperatures of greater than 30 °C and weaker winds. The southeast monsoon (Kusi) lasts from April to September and is marked by lower air temperatures, approximately 25°C, with stronger winds (Nahonyo *et al*, 2002). The Jozani area and its surrounding villages receive *Vuli* and *Masika* rains annually as is usual in many parts of Zanzibar. However, villages next to coastal areas receive less rainfall in the *Vuli* season compared to those which do not border the ocean.

## **2.3 Hydrology**

Jozani area is reported to be the lowest in Zanzibar and the water table is generally high, often emerging above the ground surface and forming springs and marshes. High water tables are also evident in areas with groundwater forest. Some creeks in Charawe, Chwaka and Kichanga extend inland sometimes joining marshes and springs (Nahonyo *et al*, 2002).

## **2.4 Land use and livelihood situation**

Land use in Jozani-Chwaka Bay national reserve can be grouped into conservation areas (mangroves, tropical forests and coral rug forests, as well as groundwater, salt marshes), agricultural and residential areas.

Tourism, followed by agriculture and fishing are the most important economic activities, although the local population also keep livestock and earn their livelihoods from forest wood and non-wood forest products such as beekeeping and sale of handicrafts. Crops grown include coconuts, mangoes, oranges, lemons, cassava, limes, potatoes, tomato, onion, cassava, yams and bananas.

Communities that reside near the forest also perform ritual activities in the forest. These include the Mapopwe preserve shrines and other parts of the reserve used to celebrate the birth of the Prophet Muhammad in the third month of the Islamic calendar (Hijra).

## **2.5 Population and livelihoods**

Majority of Zanzibar's population still live below the poverty line and depend on the surrounding natural resources. Majority of the poor population, 83.4 % still live in the rural areas.

The Jozani-Chwaka Bay national reserve supports the livelihoods of approximately 18000 people; the majority are poor and depend directly on tourism activities, subsistence level farming, beekeeping and fishing activities. However, in recent decades the population increase, expansion of conservation areas, and investment activities have affected the residents of the villages surrounding the forest as a result of reduced residential and agricultural areas. These therefore have further increased pressures on resources in the national reserve area, raising actual and potential conflicts between interest groups and across countries.

# **3. Challenges facing the Landscape**

## **3.1 Climate related challenges**

As an island, Zanzibar is vulnerable to rising sea level from climate change. The potential impacts of sea-level rise include flooding and loss of low-lying areas, shoreline (coastal) erosion, saltwater intrusion and increased salinity in aquifers and water supplies. Due to the destruction of mangrove forests by nearby communities, the villages nearby are facing the challenge of sea-water intrusion.

### **3.2 Ecosystem related challenges**

Threats to the forest include:

- Loss of habitat and degradation of the forest resource due to encroachment and over harvesting both for subsistence and commercial uses by surrounding communities;
- Increasing human population and declining livelihood security causing communities to escalate exploitation of the Jozani swamp and mangrove forests;
- Loss of soil fertility and;
- Dwindling wildlife populations caused by uncontrolled hunting

### **3.3 Production related challenges**

Presently, the main threat to JCBA is the demand for fuel wood used for making charcoal which is used commercially and domestically in Zanzibar town: Green mangrove wood from Jozani forest is specially preferred by bakeries in Zanzibar town because it is slow burning and is ideal for bread baking. The forest is also illegally logged for building poles for house construction and more recently, for constructing hotels

### **3.4 Livelihood related challenges**

The livelihoods of communities living around the forest are mainly based on subsistence agriculture (rice cultivation, maize, cassava, bananas, and coconuts) and rearing small livestock, such as goats and sheep and chicken. In the coastal villages, fishing and seaweed farming supplement subsistence activities mentioned above. Other activities include making charcoal and collecting fuel wood, and building poles, for domestic consumption and trading.

One of the major challenges posed by the forest is human-wildlife conflict. For example, red colobus monkeys used to raid people's small farms and destroying banana, coconut and maize and other crops. The reaction of the farmers was to kill the monkeys to protect their crops and as result their population was under threat of extinction.

### **3.5 Institutions/governance related challenges**

Before 1990, Zanzibar's forest resources were recognized as 'government' lands and excluded communities from their management. Communities had no rights of ownership, but concessions were granted for commercial extraction to local people for serving the domestic fuel wood markets and for construction. The Forest Reserve Decree of 1965 allowed for:

- Alternate closing and opening of areas on a 10 year rotation basis.

- Harvesting poles up to a maximum height of 10cm.
- Prohibition of use of mangrove for fuelwood and bark removal
- Issuing of cutting and transportation permits for mangrove extraction
- Law enforcement to prevent illegal cutting

However, by the 1990s several things were obvious; firstly, the Decree was out of date and did not take into account moves towards CBNRM and co-management; secondly, that there had been significant illegal cutting of wood for fuel over the previous 50 years, which reduced the availability of mangrove poles for building to almost zero (Masoud & Wild, 2000).

#### **4. The Intervention: Jozani-Chwaka Bay Conservation Project**

There have been several interventions in the JCBA. In this brief we focus on the Jozani-Chwaka Bay Conservation Project, an integrated conservation and development project by the Zanzibar Department of Commercial Crops, Fruits and Forestry (DCCFF), CARE Tanzania and the communities adjacent to the project area organized under Jozani Environmental Conservation Association (JECA). The project had three phases between 1995 - 2003.

##### **4.1 The approach**

The Project's objective was to conserve the unique biodiversity of the of Jozani-Chwaka Bay Conservation Area while enhancing the livelihoods of the surrounding communities. The JCBCP phase 1 (1995-1997) aimed to address the problems of forest degradation and declining wildlife populations in the JCBCA while also recognising the need to improve local livelihoods. The successful implementation led to the development of Phase II (1998 – 2000) with more emphasis on livelihood security. Phase III of the project (2000 - 200) included a component supported by the Global Environment Facility (GEF) to strengthen the conservation component through Community Based Natural Resources Management (CBNRM). Another component by the Government of Austria, CARE, the Ford Foundation and McKnight Foundation focused on income generating activities (IGAs).

Other projects include "Hifadhi ya Mimitu ya Asili (HIMA) - Piloting REDD+ in Zanzibar through Community Forest Management" (2010 - 2014) by CARE International, department of forestry and non-renewable resources (DFNR), the US-based company Terra Global Consulting (Terra), the department of environment (DoE) of Zanzibar and community forestry NGOs / CBOs including JECA. It was funded by the Government of Norway continues the JCBCP but also expanded to new areas and pilot carbon financing for reduced emissions for deforestation and forest degradation (REDD).

##### **4.2 Partners**

Government of Zanzibar - Department of Commercial Crops, Fruits and Forestry

Care International

The Jozani Environment Conservation Association (JECA)

Zanzibar Butterfly Centre -  
Jozani Credit Development Organization (JOCDO)  
Jozani Educational Centre  
United Nations Development Program (UNDP)  
Global Environment Facility (GEF)  
Ford Foundation  
Government of Austria

### 4.3. The benefits

The benefits of the project were clearly articulated in the end of the project M&E which used a participatory appraisal to identify the project's Effectiveness, Impact and Sustainability.

**Stage 1:** Facilitated discussions were held with stakeholders (the participating villages and implementing organizations) to assess project achievements and make recommendations for the post-project environment from their own perspectives;

**Stage 2:** The project implementing team assessed the project's for its effectiveness against the project's indicators defined in the logical framework using a facilitated self-evaluation of the Intermediate Goals

**Stage 3:** A stakeholder-assessment of the project's impacts (social, economic, institutional and environmental) was carried out using a facilitated Multi-Stakeholder Workshop, where results from Stages 1 and 2 were presented and discussed.

**Relevance:** The project was found to be highly relevant as its two main objectives were a priority of the Government of Zanzibar - the conservation of Jozani Forest, an important global biodiversity hotspot and addressing poverty and improving rural livelihoods by ensuring the communities around the area benefited tourism activities.

**Effectiveness:** The project used a participatory approach in its implementation to build a stronger civil for socio-political development of Zanzibar. The project also led to the National Park status for the Jozani forest. Came from M&E

The project's evaluation concluded that the project had generated significant benefits and improvements in the following areas:

- **Natural capital:** There was a reversal in the ecosystems deterioration including a notable increase in the populations of Red Colobus monkeys and Ader's Duiker. The conservation area was successfully gazetted as a National Park in 2004 with the agreement of national and local stakeholders. Other improvements included operationalization of village conservation committees (VCCs) by the communities and DCCFF to co-manage and regulate access and use of the forest resources. This improved community access to natural capital such as access to groundwater, woodfuel and building materials through agroforestry.

- **Financial capital:**The project had enabled individuals / households to improve their livelihoods through providing opportunities for alternative livelihood activities such as improved farming (mushroom growing), mariculture, agroforestry and ecotourism. This led to increased incomes and the establishment of savings and credit groups, and improved access to markets leading to increased income generating opportunities.
- **Social and institutional capital:** The project had led to the formation and strengthening of community- level institutions including the savings and credit and Income-Generating Activities (IGA) groups and the VCCs; empowering community to effectively interact with GoZ departments (particularly the DCCFF) and to market / sell their goods to the private sector. There were improvements in social equity at the local level including the empowerment of women in financial decision-making and access to finances.

During Phase I of the project, the Project advocated for women membership in the village conservation committees and Advisory Committee and the result was that the men created the opportunity for women to participate. Women participation in the Advisory committee women's increased from 0% to 30% to 50% in the space of three years. This was significant in a culture where women are not used to contributing their views in public.

- **Physical capital:** The project led to the development of infrastructures such as a constructing water supply systems, a health centre, a school and tourist facilities including a visitors centre with a gift shop and a mangrove boardwalk. These have greatly improved access to clean water in the villages and health and education services.
- **Human capital:** The community gained important skills and knowledge for income generating activities, household and group financial management and co-management of resources through VCCs. The project in particular ensured the inclusion of women and emphasized issues such as imparting literacy and management and leadership skills of women within and outside their respective savings and credit and IGA groups.

Also, all improvements in the livelihood capital reduced community vulnerability and build resilience to natural disasters, environmental degradation, food shortages, socio-political and market disruptions. Community respondents said the project had led to improvement in quantity and quality of food, they were able to educate their children, meet their medical expenses and for bereavements and weddings.

- **The policy and political:** The JCBCP demonstrated that the development of an effective policy and institutional environment at national and local levels is essential for effective conservation efforts at the local level. Some new policies developed and implemented included the Zanzibar Forest Resources Management and Conservation Act no. 10 of 1996 and the National Forest Resources Management Plan 2008-2020 which shifted the focus from centralized (top-down) based forest management to a community based forest management (CBFM), primarily through signed Community Forest management Agreements or CoFMA (Menzies. 2007: 30). It emphasized environmental protection,

social equity and economic development, and active community involvement in the planning, management of forest resources.

Another important policy development was 'tourism revenue retention and sharing scheme'. Another key outcomes of the project was the successful establishment of the National Park with little social conflict – there was no involuntary resettlement of communities and conflicts were negotiated with patience and willingness to listen on the part of DCCFF.

## 5. Lessons learned

**Income and employment opportunities:** Improvement of the community's income and employment opportunities is key in reduced pressure on natural resources and sustainable conservation. Market analysis and appropriate local capacity building are key in the design and success of alternative livelihoods / new income-generating activities.

**Community involvement:** Increasing community awareness and knowledge on the importance of the natural resources and their involvement of the community in the management of natural resources is also important in sustainable biodiversity conservation. Conservation goals can only be achieved on scale by involving the local communities as active agents of conservation management but on the other, the local communities become active agents of conservation when they see the direct and indirect benefits from their participation.

**Policies and enabling environments:** National enabling conservation policies and legislation are critical to secure local benefits, particularly in relation to tourism revenue sharing, co-management and access, and sustainable use of resources; sub-national levels policies and local levels.

**Partnership - international, national and local levels:** Partnership with all stakeholders is key in the design and implementation of the conservation and livelihoods projects. The partnerships allow the combining of complementary skills. The involvement of women and youth were also key.

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