



Sustained natural resources management and community livelihoods improvement through partnerships: the case of Arabuko-Sokoke forest in Kenya

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BACKGROUND AND PROBLEM STATUS

Before the 1990s the Arabuko-Sokoke forest adjacent dwellers never saw eye to eye with the forest authorities, the Forest Department. They vandalized the sign boards that spelled out "no entry without permission", and whenever the Forest patrols were conducted close to their villages, all the adults went into hiding. They left behind only the children and at times the very elderly who were unable to go into hiding. Yet, the core cause of the antagonism was the local community and other secondary stakeholders were not included in the management and benefit sharing of the forest resources. The community, in this paper, is synonymous to the Arabuko-Sokoke forest adjacent dwellers.

Over half of 350 households, living on land directly adjacent to the forest regularly use the forest to collect fuel wood, poles, medicinal plants, forest foods and water. A further 1200 households living further a field also come to the forest to collect fuel wood, medicines, poles and water (Mogaka, 1991). This community use of forest was at cross roads with the growing stature of the forest internationally. Arabuko-Sokoke is one of the key sites for high endemism and biodiversity conservation along the east coast of Africa. Due to the global importance of the forest, the conservationists were pushing for a very limited use of a narrower range of forest resources, a position that overlooked the importance of the forest to the local economy and livelihoods. This heightened the negative attitudes of the community towards the forest: more than 80% of the community was of the view that the forest was of no value to them and wanted its land use changed to agriculture (Maundu, 1993). Problem animals destroying crops on farms adjacent to the forest, sometimes leading to loss of half the expected produce, was also a major negative factor.

The middle ground was reached with the emergence of the integrated conservation and development paradigm in the late eighties. The government institutions had an opportunity to re-engineer their relationships with the community as they took up the challenge of localizing the outcomes from the world summits on conservation and development fora. Also, the communities stood to benefit from the recognition that they had a role toward the conservation of wild lands with the adoption of the "use it or lose it" approach in the conservation world. Locally, it was clear that there was need to



support the community to develop livelihoods that were compatible with their needs and conservation of the forest. The target of the development agents were nature based enterprises based on non-consumptive use of forest resources. After five years of Integrated Conservation and Development Projects (ICDPs) there was a complete turn around in the community attitudes towards the forest with now only 16% for the conversion of forest into another land use (Maundu et. al., 1997).

Problem status

The essential problem facing the management of Arabuko-Sokoke forest "is the ongoing degradation of the forest resources at the hands of, or with compliance, of the local communities around the forest." The main causes behind the degradation being poverty and limited livelihood options. Although income generation activities have been introduced the general decline in the Kenyan economy as a whole and the local economy in particular, coupled with continued inflation, has meant that there has been little money left for improvement in living standards, over and above meeting their basic needs.

Intervention area

The Arabuko-Sokoke forest is located in the Coast Province of Kenya, East Africa (Map 1). The forest covers 420 square kilometers, the largest remnant of a forest mosaic that once stretched from Somali to Mozambique. In Africa, the forest ranks second in importance for the conservation of birds (Collar and Stuart, 1988) and is one of the 19 important Bird Areas in Kenya (Bennun and Njoroge, 1999). Arabuko-Sokoke forest is also part of the East African Coastal Forest complex that ranks amongst the top 25 global biodiversity hotspots (Myers et. al., 2000).

There are 52 villages that are directly adjacent to the 100 kilometer perimeter of the forest. Interventions are undertaken in the villages in the five kilometer buffer around the forest. The human population is over 100,000 with an average of 15 persons per household. Per capita is US\$ 50 (Maundu, 1993) and most of the cash income is from the sale of cash crops such as cashew nuts and mangoes. Agriculture is the main source of livelihood but is very limited in potential by animal pests from the neighboring forest.

>>>>Map: General location of Arabuko-Sokoke forest

FACTORS CONTRIBUTING TO SUCCESS

Three main underlying factors to success include:

1. A high poverty and unemployment level that leads to the community embracing any activities with income generation potential, however little, that they learn of from development agents.
2. An increase in the population of the local community members who retired from employment in the government and non-government sector that are now change agents in the community, contributing to increased awareness and adoption of modern natural resource management tools and technologies.

3. Adoption of the Integrated Conservation and Development (ICDP) paradigm by the government and non-governmental agencies, and their willingness to try management systems outside their legal mandates.

Organization

Four governmental organizations have a permanent presence in the Arabuko-Sokoke forest area: The Forest Department (FD), Kenya Forestry Research Institute (KEFRI), Kenya Wildlife Service (KWS) and National Museums of Kenya (NMK). These organizations have worked together since 1991 as the Arabuko-Sokoke Forest Management Team, guided by several memoranda of understanding between the different organizations. The main function of the team is to plan and jointly implement activities relating to the management and conservation of the forest. As a team they provide the infrastructure for governmental interventions, and synergy for activities that cross cut organization mandates.

In the past decade Arabuko-Sokoke Forest Adjacent Dwellers Association (ASFADA) has increasingly participated in forest management. ASFADA is an umbrella of community-based organizations (CBOs) that operate within villages in a five kilometer band around the forest. The CBOs have diverse activities that include microfinance, dairy farming, beekeeping, butterfly farming and many others, but all have an objective that is forest conservation related.

Process

The four governmental departments of the ASFMT, community and civil conservation organizations develop proposals and source funding for conservation and development. Through one to five year projects, the stakeholders have developed sustainable uses of the natural resources within the environs of the Arabuko-Sokoke forest. Table 1 is a chronology of the ICDPs and the major outputs achieved.

Table 1. Chronology of Projects that have developed sustainable management and use of Arabuko-Sokoke resources with community participation

<p>Kenya Indigenous Forest Conservation Project (KIFCON)¹ – 1990 to 1993</p> <ul style="list-style-type: none"> • It demonstrated that there are formal and informal benefits of the forest to the community. • It demonstrated that informal (illegal) benefits from ASF were higher than the legalized benefits. • Started the initial attempts for community participation in forest management. • It facilitated the initiation of the process of KWS participation in joint management of ASF through an MQU. • The biggest challenge was how to diversify and spread the benefits. <p>Kipepeo Project² - ongoing since 1993</p> <ul style="list-style-type: none"> • It demonstrated the communities could get higher returns from non-timber forest products such as butterflies.
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¹ Funded by the Government of Kenya and UK through ODA the current DFID

² Funded by the UNDP-GEF small grants, Chicago Zoological Society, IUCN Netherlands Committee, Japanese Embassy in Kenya, EU and USAID



- It demonstrated that the attitude of the community towards forest conservation is directly related to the benefits they draw from it.
- This project started the first forest based direct non-consumptive benefits.

Promotion of Sustainable Forest Management (PSFM)³ 1993- -1998

- Emphasized on sustainable management of natural forests.
- It initiated on-farm forestry.
- Conducted Participatory Rural Appraisal (PRAs) focused to initiating community involvement in forestry management.

Arabuko-Sokoke Forest Management and Conservation Project (ASFMCP)⁴ – 1997-2001

- Initiated Participatory Forest Management (PFM) and integrated rural development
- Expanded existing forestry related Income Generating Activities (IGAs) and initiated new ones like beekeeping
- Further developed the ASFMT and community partnerships and structures.

Government increased funding towards multiple stakeholder management in ASF

Arabuko-Sokoke Forest Community Conservation Initiatives⁵ 2003 - 2005

- Completed a 20 km solar fence.
- Consolidating existing IGAs like Eco-Tourism, Butterfly farming and Bee keeping.
- Initiating new IGAs like Mushroom farming.
- Developing an equal partnership between ASFMT and FAC

Enhanced sustainability of Arabuko-Sokoke forest through Improved Natural Resources Management by and for Stakeholders 2003-2006⁶

- Consolidating existing IGAs like Eco-Tourism, Butterfly farming and Bee keeping.
- Facilitating the completion of the PFM piloting, scaling up and starting a monitoring system.
- Building CBOs capacity in organization and advocacy.

GEF Medium grants 2004- 2008⁷

- Awareness on Participatory Forest Management.
- Beekeeping and sericulture as Income Generating Activities

People and Sustainable Development: Investing in Education, and Social and Economic Empowerment to conserve globally threatened biodiversity in Arabuko-Sokoke Forest, Kenya 2004-2008⁸

- Improving household livelihood so that children live a better live.
- Provision of water
- Beekeeping

³ Funded by the Government of Kenya and Germany through GTZ

⁴ Funded by the Government of Kenya and European Commission

⁵ Funded by the Government of Kenya and European Commission and the Forest Adjacent Community.

⁶ Funded by the Government of Kenya and the Government of United States of America

⁷ Funded by GEF and Government of Kenya

⁸ Funded by Germany Civil society (Kindernothilfe and Naturschdeutschland).



Community participation

In the first five years of the ICDP trials at Arabuko-Sokoke, the community was primarily a beneficiary having very little to do in the planning and development of the projects underway. Through the piloting of Participatory Forest Management in three villages that border a 14 kilometer stretch of Arabuko-Sokoke forest and with the strengthening of ASFADA, the community was empowered to realize the role they can play as natural resource managers over and the above subsistence use. Working hand in hand with the ASFMT and ASFADA has developed proposals that have been funded and jointly implemented since 2001.

Leadership

Most of the technical leadership for the community interventions has come from the ASFMT, and other conservation agents that are brought on board under strategic partnerships for the implementation of specific projects. Also important are the locally important persons who are members of the target CBOs or recognized advisors in the village due to their knowledge and experience on systems and structures suitable for the promotion of rural development.

Finances

The Government of Kenya supports the core functions that are the mandates of the four ASFMT institutions. Interventions outside of the existing forestry legal framework or mandates of the ASFMT and to the community, grants are sought from donors. The total donors support over the decade for ICDPs at the forest stand at about US\$ 536 million. This includes ongoing projects that will run till 2008 (Table 1). On average the active participants have doubled their per capita from US\$ 50 (Maundu et. al., 1997), with a total income of over US\$ 800,000 going to the community, these are higher returns than would be obtained from investment of the money in a business enterprise within Kenya.

Ongoing activities

Currently the main activities are:

- Participatory Forest Management – preparation of community forest conservation associations for management of forest sections that neighbor their villages. This will be possible once the new forest law is passed in the Kenyan parliament. This law allows for such organization to enter into management agreement for selected forest areas.
- Nature based enterprises - assisting the community to develop income generation ventures from sustainable use of the Arabuko-Sokoke forest resources such as butterfly farming, beekeeping, and agroforestry. Income generated from these forest related activities are then re-invested into non-nature dependent activities, so as to reduce the risks that community face from income eco-businesses that are climate dependent.
- Capacity building – strengthening of the community organizations to plan, manage and monitor their CBOs activities so as to meet the objectives that brought them together. Also preparing the governmental institutions (ASFMT) to embrace participatory forest management as an alternative management approach.



Sustainability

Given little prominence over the decade, organization capacity assessment and organization capacity building of the community CBOs is now a top priority. Communities are being trained and mentored on coming up with realistic objectives and procedures for managing their organizations, and their capacity to monitor and evaluate delivery of projected outputs. By having the community actively participating throughout the entire intervention process, individual capacity, systems and structures are built that will support the activities even when the projects have ended. The permanence of government institutions provides continued technical and backstopping even with the exit of civil society organizations that participate during the interventions period. Also, the projects are locally owned. All the ICDPs are developed from issues identified and prioritized by the stakeholders' resident around Arabuko-Sokoke forest.

METHODOLOGY: SUCCESS AND IMPACT

The outcomes of the various interventions over the past decade are summarized in Table 2 that follows. These include the technical capacity of the community to sustain the livelihood source and the incomes obtained over the decade of the interventions.

Table 2. Outputs of ICDP interventions at Arabuko-Sokoke Forest

Butterfly farming:

The community understands the butterfly life cycle and the abundance of the respective species and their food plant, and the attacks by various pathogens at the different stages. They have some understanding of the global market forces and its impact on the income potential from butterfly exports. They also realize that biodiversity has varied values that can differ amongst societies. Since 1993 the community has earned over US\$ 700,000 and the realization that it is possible to earn legal money from the use of forest products. (Gordon and Ayiamba, 2004).

Beekeeping:

The community understands the bee life cycle and how it makes honey. They also know the importance of breeding using modern bee keeping and honey processing equipment, and the impact of these on the marketability of the bee keeping products. There is an increased use of bee keeping products for medicinal purposes. The community income from sales from a common point is US\$ 30,000 (personal communication, Kipepeo market data).

Problem animal control:

Establishment of a 20 kilometer electric elephant fence has improved yields from farms bordering the fenced forest area. Currently, trials of other problem animal deterrents such use of pepper and bee hives along the paths elephants frequent. Cash incomes from honey and chili pepper are also expected. Community forest guards have also been trained by the Kenya Wildlife Service on basic problem animal control.

Aloe vera farming:

Indigenous *Aloe spp* are used commonly to cure upset stomachs and burns. Now the use in locally sold soap is on the increase and the growing of Aloe vera for local use and export to the pharmaceutical and beauty markets abroad has economic potential. About 200 acres in small-holdings of an acre per farmer. Incomes expected after the long rains of 2006.

On-farm tree planting:

The community is encouraged to invest the little money that they can save in planting about 300 trees annually. When harvested in rotation, trees will provide the much required cash to settle bills for education and other primary needs of the respective farmer. The tree products will also go toward meeting the deficits of forest resources that the community cannot extract in sufficient quantities from the Arabuko-Sokoke forest. This has been very successful and farmers are growing trees as an annual crop estimating individual incomes at US\$ 1,000 a year.

Agroforestry and soil fertility:

This has not had much success but is undertaken by a few farmers to improve nitrogen and biomass to the sandy soils that are common in the area. The Agroforestry species are also grown as fodder for dairy cows. The key challenge to the establishment of agroforestry is the traditional practice of land preparation, slash and burn.

Participatory forest management:

The community is knowledgeable and skilled in participatory resource assessment and socioeconomic characterization of their village surroundings. Once the needs assessments are done and an Operational forest Management Plan is drawn, it will show how the forest resource will be utilized and the deficit obtained from interventions on farming. Two such plans are ready for 28 kilometer stretch of the forest, and the community awaits the passing of legislation by parliament that allows for their inclusion in the daily management of forests. (Mbuvi et al, ...).

Organization Capacity:

The community can vision, derive achievable objectives and monitor and evaluate their CBOs systems and outputs. This ensures that social and economic capital invested in their group activities have high chances of delivering the objectives that led to their formation. Awareness and advocacy for the conservation of the forest that is a subsistence resource for the community around the forest has been enhanced. The community can now call for meetings with the governmental departments to discuss forest protection when they see incidences of destruction. They also link with the wider conservation lobby groups when they deem the actions taken are unsatisfactory (personal communication, minutes of ASFMT). Enhanced organization capacity of the CBOS will support and decentralization of power between the ASFMT and ASF-FADA: the government departments now recognize community as partners. The Community forest guards now work with government forest guards, planning and patrolling the forest jointly in PFM trial areas.

Over and above the outcomes above, the community has been empowered. Through meetings on conservation and awareness and training on the income generation activities, the community has come together and realized that their problems in the areas around the 100 kilometer perimeter of the forest are very similar. Techniques developed locally in the income generation activities have spread and helped realize growth. A common front in advocacy and bargaining by the community on issues that affect them has led to more equitable treatment.



Repercussions

There are over 100,000 people resident in the 52 villages that surround the forest. At any time only about 5,000 are actively involved in all the income generation activities around the forest. There are thus incidences of hostility between the participants and non-participants in the ICDPs.

The plans to have the benefits obtained by the few shared with the wider community through contributions to village projects such as in water and schools have not been received well by the active participants in communal contribution schemes. The good publicity and acceptability of the ICDPs by larger community is thus limited by the retention of benefits to mostly the direct beneficiaries and their close relatives.

The non sustainability of the certain activities under implementation after the projects with the reduction of support to the responsible individuals, who get involved in other activities that assure their livelihood status are maintained.

Different interpretations of the vision and unclear bench marks or indicators of achievement at the onset of projects affect clear documentation of changes that can be attributed to the project period.

CASE FUTURE

There is a 25 year strategic plan for the forest that guides the future conservation and development activities of the Arabuko-Sokoke forest. In this plan, community participation is clearly outlined. There is a stakeholders Forum that will provide monitoring and evaluation against the strategic and operational plans. The roles of ASFADA the umbrella of all the CBOs around the forest with conservation inclinations along with the user groups, through which the community are able to access the forest natural resources, are outlined. What must be done is to develop a comprehensive baseline socio-economic data for the whole forest adjacent community and specifically targeting the poor for interventions. This will contribute to reducing the population that is highly dependent on the forest resource thereby enhancing sustainability.

REPLICATION AND SOCIAL LEARNING

- The model of joint management practiced at Arabuko-Sokoke is one of the strong examples within the forestry sector of how participation of local to international stakeholder in the management of a forest. The model is being replicated in other forests within Kenya where the conservation of biodiversity is the main reason for the forests protection. This partnership of government and civil society enhances natural resource management.
- By legalizing access to natural resources and including the local community in the daily management of the resource adds to the value of the forest through ownership and income benefits.
- ICDPs contribute to improved community livelihoods but the sustainability is dependent on the levels against the prevailing socio-economic environment of the

community. Is the improved livelihood enough to reduce subsistence dependence on the natural resources?

- The impacts of ICDP amongst the poor will only be achieved if there are deliberately targeted and the conditions for participation tailored in their favor. The poor have a mind set that has to be transformed to favor adoption of an intervention.

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