

Financial Effects of Depletion of Mangrove Forest on the Performance of Micro Finance Community Based Organizations -The Case Study of Wajomvu Community in Kenyan Coast

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Abstract: This paper discusses the Financial Effects of Depletion of Mangrove Forest on the Performance of Micro Finance Community Based Organizations. Microfinance programmes are seen as a means for such communities to gain access to much-needed and appropriate credit services. The communities along the coast have been able to undertake microfinance programmes due to income arising from sea products and mangrove forests such as income from eco-restaurant, birding excursions, selling crabs and fish to hotels, honey products, pottery items, timber for construction and fuel wood. Mangrove forests worldwide have suffered depletion due to overharvesting, pollution and urban development among others. A broad study was done with regards to the various variables showing how each of them affects performance of Microfinance Community Based Organizations. A descriptive survey study design was adopted in the methodology to explain the relationship between the variables of the study as shown in the conceptual framework. The research discloses that overharvesting, Pollution and urban development are environmental issues which affect MFI's profitability by increasing its risk. The study concludes by recommending conservation and protection of mangrove forests in order to ensure sustainable yields of timber which have a relatively high economic return leading to increase in savings thus enhancing performance of microenterprise. All stakeholders, including women and marginalised groups, should be included in management planning to avoid approaches which are detrimental to those who rely most heavily on mangrove resources.

Keywords: Microfinance Community Based Organizations, Depletion of Mangrove Forests, conservation, high economic return, profitability.

1. INTRODUCTION

Microfinance programmes are generally aimed at promoting and protecting income and empower specific sectors of the population. More specifically, the development objectives of microfinance for poor fishing communities are to enable fishing households to increase income, smoothen consumption, develop microenterprises, manage risks better and enhance earning capacities, thus reducing economic and social vulnerability. Generally Microfinance provides Credit, Savings, Insurance and money transfer facilities to the people. The communities along the coast depend mainly on marine ecosystems such as mangrove forests which are vulnerable to resource depletions. Access to credit and insurance is problematic in most small-scale fishing communities and constrains fishing effort and production. (FAO, 2000).

Around 3.2 billion people occupy a coastal strip of 200 kilometers wide in the world which represents only 10 per cent of the earth’s land surface. (UNEP, 2011) High urban population growth leads to competition for land in coastal regions. The world’s natural resources are under increasing pressure, threatening public health and development. Water shortages, soil exhaustion, loss of forests, air and water pollution, and degradation of coastlines afflict many areas. As the world’s population grows, improving living standards without destroying the environment is a global challenge. Most developed economies currently consume resources much faster than they can regenerate. Practicing sustainable development requires a combination of wise public investment, effective natural resource management, cleaner agricultural and industrial technologies, less pollution, and slower population growth. (Mohamed, 2008)

Kenya has a coastline of about 600 km bordering the western Indian Ocean, there are extensive mangrove forests, a complex western bays and some coral island (Mwaguni & Muthiga, 2005). Kenya aims at conserving indigenous traditions and values on one hand while keeping up with the rapid social development and economic growth on the other. Kenya’s natural resources offer attractive tourists destinations, rich biodiversity and a substantial array of goods and services. Mangroves forests are among the most productive ecosystems on earth, but since a large part of the mangrove services do not have assigned “market prices” the value of this unique ecosystem is generally underestimated. There is persistent undervaluing and apparent importance of mangroves to humans ((Dahdouh-Guebas, Bosire, Walton & Kairo, 2008).

There has been a decline of fisheries resources, deterioration of the coastal environment and the intrusion of industrial pollution hence need to introduce effective policies and measures for the management and conservation of mangrove forests. Jomvu Kuu is situated at the Tudor Creek which bounds Mombasa Island on the northwest and extends some 10 km inland. Tudor Creek has a single narrow inlet that broadens out further inland to a central shallow basin fringed by a well-developed mangrove forest. Mangrove forests occupy 1’465 ha of the creek (Mohamed, 2008).

1.1 Statement of the Problem:

Mangrove forests are one of the essential coastal ecosystem providing economic benefits to the local community through use of their wide variety of products. These products include mangrove poles for construction of houses, restaurants, hotels and holiday resorts for Tourists, Fuel wood, fisheries and Honey products. The main activity of women in Jomvu Kuu is pottery business which helps them to earn income and save with the microfinance. They used mangroves for burning the ports to be ready for sale. This activity contribute to the degradation of the Mangroves too. Destruction of mangrove forests has increased the cost of pottery because women have to travel far from the area of operation in search of fuel wood to burn the pots or buy the fuel wood from other suppliers.

The mangrove around Jomvu Kuu area has grossly been depleted despite having forests officers in sight. Being situated near the Kenya meat Commission and also having so many industries the species of mangrove forests have been grossly affected by being exposed to both episodic natural and recurrent human disturbances, including long exposure to raw domestic sewage, sporadic unregulated-harvesting and episodic siltation. Over exploitation of mangrove forests resulted in great losses to the community. (NOAA, n.d.) There is complete reduction in the quantity of Fish, Prawns and even Crabs. The sons from the village have been force to work as labourers abroad. Mangroves worldwide are rapidly disappearing due to anthropogenic impacts such as overharvesting, pollution and general urban development. (Mohamed, 2008). It is estimated that 20% of the total mangrove forests in Kenya have been lost already (Mohamed, 2008). Extensive research has been carried out on the ecology, structure and functioning of the mangrove ecosystem. Some of these research include the economic analysis of mangrove forests: A case study in Gazi Bay, Kenya and the Integrated Coastal Zone Management Action Plan for Kenya, 2011-2015. However, these efforts have not bore fruits to some areas.

2. LITERATURE REVIEW

Conceptual Framework

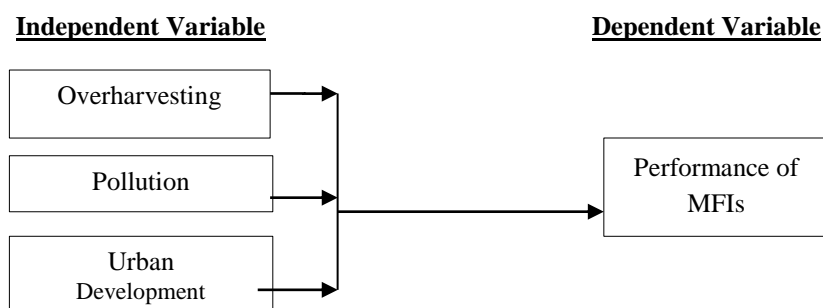


Figure 1: Conceptual Framework

2.1 Overharvesting:

The harvesting of mangroves for timber and fuel, like basic fishing techniques, has been practiced for thousands of years, with poles continuing to be exported from the region. Mangroves have been exploited in Kenya for generations, but are currently threatened by overharvesting (Abuodha & Kairo, 2001). Coastal residents have traditionally exploited the products of mangrove forests as well as various parts of mangrove trees. Poles and timber for building boats and houses, as well as medicinal herbs (Dahdouh-Guebas, Bosire, Walton & Kairo, 2008) are all obtained from mangrove forests. Reckless cutting of mangroves has cleared large areas of previously productive forest. Additional pressure from tourism developers, coastal construction, farmers and the ever-growing need for fuel wood, further encourages large swathes of primary mangrove forest to be cut indiscriminately with little or none re-planted

Overharvesting of mangrove forests has reduced the in-breed thus reducing number prawns, crabs, and other types of fish which were of high economic value. It is estimated that along the Kenyan coast, 70% of wood requirement is met by mangroves. Increased demand of mangrove wood products, particularly for firewood and building poles, has led to degradation of the forest in many areas along the coast (Kairo & Bosire, 2014).

2.2 Pollution:

Mangrove habitats serve as a dumping ground for solid wastes and for discharging the effluents from various sources, (Kathiresan, 2001) when Mangrove destruction occurred in the Vietnam War (1962-71), about 71 million liters of defoliant chemicals were sprayed over the Coast that resulted in the destruction of 104,000 ha of mangrove forest. Effluents discharged from factories, direct dumping of municipal wastes into the rivers and pesticide run-off from agricultural fields eventually result in the accumulation of heavy metals in the mangrove wetlands, affecting the health of the mangrove ecosystem.

The best example of this is the Tudor Creek which is adversely affected by pollution. There is rampant pollution caused by the dumping of sewage and waste products from the Kenya meat commission and all domestic waste from the County of Mombasa are also thrown into the sea.

Over 65% of the Coast Province has no sewerage system and is served by septic tanks, soak pits and pit latrines. In Mombasa district, for instance, wastewater management is not adequate and only 10% of the population is connected to the sewage system. Individual houses have pit latrines while most institutions dispose their wastewater in soak pits, which contributes to groundwater pollution. Areas served by sewerage systems, however, also contribute to environmental degradation because treatment works are not operational and the sewage is disposed directly into the sea, threatening public health and marine life (NEMA, 2009)

2.3 Urban Development:

Population increase and migration to coastal areas are putting resources under increasing pressure, and people are resorting to practices to cater for their needs which are increasingly environmentally damaging (Francis and Torell , 2004). Destruction of the mangrove forest and conversion of mangrove lands to domestic and industrial development is occurring in Jomvu. The most common forms of conversion are housing and residential development and coastal tourist facilities, including small port development. Urban development represents maximal density of human settlement. The mangroves can be totally reclaimed from road construction and land modification. Road construction through mangrove areas also obstructs tidal and freshwater flows to mangrove.

Kenya's coastal region has experienced rapid industrial development in the last 6 years, as a result of the emphasis placed on industrial development at the national policy level (NEMA, 2009) . Urban development lead to reclamation for expansion of residential houses, tourist installations and agriculture; commercial or artisanal extraction of wood for timber, fuel wood, poles, freshwater diversion (Kairo & Bosire, 2014).

Many textile industries have been established in export processing zones (EPZs) at the coast, especially in Mombasa. These textile industries have increased employment opportunities to the citizens; hence migration of people into the coast has led to land reclamation for expansion of residential houses. Due to its proximity from the KPA, Jomvu has become an industrial area with many container freight service company opened up. This has also increased the population of residents living in Jomvu.

3. METHODOLOGY

The study took a descriptive, Survey Research Design which attempted to describe and explain the present conditions using many subjects and questionnaires to fully describe a phenomena. The researcher administered a survey to a sample of people living in Jomvu Kuu and its surrounding, forest officers governmental and Non- Governmental officers to give their opinion on the factors that have led to forest depletion and how conservative initiative can lead to restoration and conservation of mangrove forests along the Kenyan Coast.

Purposive sampling technique was used to get respondents from different categories and the expected sample was derived from each category. Purposive sampling was where the researcher targeted a group of people believed to be reliable for the study. . Purposive sampling is the use of cases that have the required information with respect to the objectives of the study (Mugenda and Mugenda, 2003).

In data collection, the researcher used questionnaires and observation. Questionnaires were administered to members of households and community leaders. The questionnaire was preferred because it helped the researcher reach a large sample within a limited time, and confidentiality was upheld (Creswell, 2003)

4. DATA PRESENTATION, ANALYSIS AND INTERPRETATION

Table 1: Correlations coefficients between the dependent and independent variables

Spearman's rho		Performance	Over harvesting	pollution	Urban development
Performance	Correlation Coefficient	1.000	.021	.083	.379(**)
	Sig. (2-tailed)	.	.888	.586	.009
	N	46	46	46	46
	Sig. (2-tailed)	.326	.000	.085	.000
	N	46	46	46	46
Over harvesting	Correlation Coefficient	.021	1.000	.292(*)	.328(*)
	Sig. (2-tailed)	.888	.	.049	.026
	N	46	46	46	46
pollution	Correlation Coefficient	.083	.292(*)	1.000	.145
	Sig. (2-tailed)	.586	.049	.	.337
	N	46	46	46	46
Urban development	Correlation Coefficient	.379(**)	.328(*)	.145	1.000
	Sig. (2-tailed)	.009	.026	.337	.
	N	46	46	46	46

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 4.1 shows that at 90 percent degree of freedom ,there is significant relationship between urban development and performance of microfinance institution in Jomvu Kuu as shown by coefficient correlation of .328, p-value being .009<0, 01. The other relationships between performances of microfinance institutions were not significant. Urban development has been found to be the leading factor that affects the performance of MFIs in Jomvu Kuu. This is an effect that leads to all the other three independent variable. With development in urban area many industries will be set up and this will bring about pollution which will affect the natural resources as results from the study shows that there has been development of industries including EPZs and Container freight companies. Effluents discharged from factories, direct dumping of municipal wastes into the rivers and pesticide run-off from agricultural fields eventually result in the accumulation of heavy metals in the mangrove wetlands, affecting the health of the mangrove ecosystem. Due to lack of sewerage system

in Jomvu Kuu most of the creatures are adversely affected hence reduction in production level. Individual houses have pit latrines while most institutions dispose their wastewater in soak pits, which contributes to groundwater pollution. With the increase in urban migration the citizens should ensure that they have a good sewerage system. Also due to urban development, there will be shifting of people to that area hence the area becoming over populated; this will bring about overharvesting of the mangrove forests as the case of Jomvu Kuu, hence reducing production level.

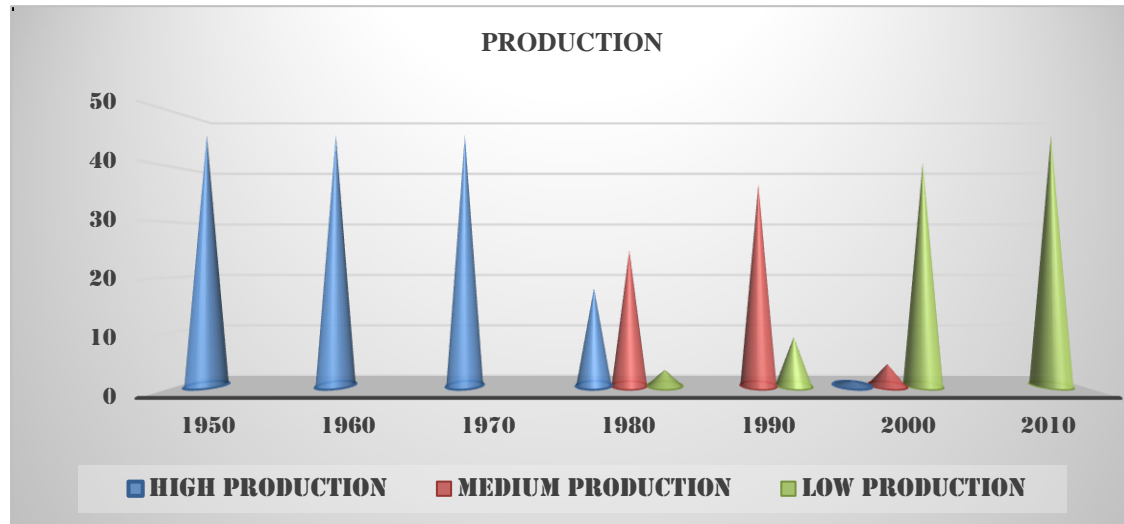


Figure 2: Level of Production

The level of production was high in 1950, 1960, and 1970, medium in 1980, 1990 and low from 1990 to date. The production was very high in the previous years hence many people were able to earn income and save with the microfinance. The production has since been low because of depletion of the natural resources caused by overharvesting, pollution and urban development.

The research findings show that overharvesting, Pollution and urban development are environmental issues which affect MFI's profitability by increasing its risk. Hence need to promote conservation and restoration of mangrove forests.

Majority of the respondents have no formal education, hence undertaking business activities and Fishing. The people living in Jomvu Kuu have been using the natural resource for production. The depletion over time of these inputs reduces the sustainability of the business, thereby affecting the performance of MFI. As the inputs become scarcer, they become more expensive, which puts into jeopardy the ability to save or to repay a loan. The main source of savings is from pottery business. The levels of production have been on a reducing trend from the years 1950s to date.

Majority of the respondents agreed that overharvesting of mangrove forests directly has financial influence on the performance of the Microfinance institutions in Jomvu Kuu. Urban development has financial influence on the performance of the Microfinance institutions. 43.5 percent of the respondents disagreed that Pollution has financial influence on the performance of the Microfinance institutions. Majority of the respondents supported the statement that mangrove trees require protection.

5. SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

The research study sought to evaluate the factors determining performance of MFIs in Jomvu Kuu , specifically the study explored the research objectives provided in chapter one.

The study employed descriptive data analysis. The sample under study comprised 46 households. The study used primary and secondary data that was collected using questionnaire that was served on the respondents and findings presented using tables.

5.1 Conclusions:

Overharvesting, Pollution and urban development are environmental issues which affect MFI's profitability by increasing its risk. Poor people are more dependent on natural resources, frequently using natural resources as inputs for their production. The depletion of these inputs reduces the sustainability of the business. As the inputs become scarcer, they

become more expensive, jeopardizing the client's ability to save or repay loans. Since MFIs often support sectors in which many clients are engaged in similar activities, natural resource depletion has put MFI's loan portfolio at risk.

The rate at which mangrove loss is occurring now, there will be significant consequences for economies and societies through impoverished livelihoods, lower economic growth, declining human security, and a poorer quality of life for coastal populations. While the benefits derived from healthy mangroves are mostly experienced by local communities, the loss of mangroves puts coastal populations, national economies, and the world as a whole at risk. Mangrove ecosystem health and productivity must therefore be part of global efforts to eradicate poverty, strengthen food security, and reduce vulnerability to climate change.

5.2 Recommendations:

Communities should employ conservation initiative in order to restore the depleted mangrove forests. This will lead to increase in production levels hence increasing profit from current income-generation activities and additional income-generation activities

Well managed, mangroves will ensure sustainable yields of timber which have a relatively high economic return which will lead to increase in savings thus enhancing performance of microenterprise.

5.3 Further Study:

Further studies are also recommended to encourage the use of public-private partnerships to overcome imperfections and diversification of microfinance products to come up with Innovative financial products through which conservation of the natural resources will be initiated.

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