



The role of women enterprises for the conservation of Kakamega forest, Kenya

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Abstract

Aim: This paper aims to show how local women's community-based entrepreneurial activities have improved the management and conservation of Kakamega Forest. Recent research has shown that the western Kenyan Kakamega Forest is rapidly being cut down. In many cases, locals are held responsible for this issue. This paper, however, argues that native communities have historically played critical roles in protecting forest ecosystems.

Method: Approximately 149 women from local entrepreneurship and conservation groups (chamas) were polled via questionnaire.

Findings: Many of these women increased their income through forest conservation efforts. Sixty-two percent of those surveyed reported growing and domesticating wild, native plants for use as food or medicine. These actions helped protect native species while reducing ecological stress on the forest's meager resources. Nearly 20% of people polled had a professional connection to producing eco-friendly jikos or stoves. It was hoped this would lessen the need to cut down trees for firewood.

Implications/Novel Contribution: This study's original contribution is its inquiry into the impact of women's community-based entrepreneurial activities on the management and conservation of Kakamega Forest. It is unclear how much women's networking and conservation initiatives have helped preserve forests.

Keywords: Kakamega forest, Conservation, Sustainability, Entrepreneurship

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INTRODUCTION

Kenya's Ministry of Forests and Wildlife has been cited as a recent example of a government agency acknowledging the value of local forest communities in managing forest resources ([Ministry of Environment and Natural Resources, 2007](#)). The Government's Forestry Act of 2005 encourages community involvement in forest management ([Government of Kenya, 2005](#)). However, when participating in community-wide management or conservation efforts, men and women in any given setting face distinct barriers ([Pandolfelli, Meinen-Dick, & Dohrn, 2007](#); [Salam, 2016](#)). As much as 74% of Kenya's smallholding farms and natural resources are managed by rural women, according to a report by [Kabutha and Humbly \(1996\)](#). Their input is crucial to the long-term sustainability of the forest. Kakamega Forest is the water catchment for Lake Victoria, which is why it is the third most important conservation site in Kenya. More than 300 bird species, 32 snake species, 7 primate species, and 400 butterfly species call this area home ([Zimmerman, 2001](#)). Approximately 600 people live in a square kilometer around the forest ([Blackett, 1994](#)). There are more than 200 thousand people dispersed across fifty-seven small towns. Most people in Kenya rely on NTFPs (non-timber forest products) to make a living ([Kenya Indigenous Forest Conservation Programme, 1994](#)). Community involvement in forest management, its impact on poverty levels, and the opportunity cost of protecting forests have all been the subject of conservation ([Börner, Mburu, Guthiga, & Wambua, 2009](#); [Emerton, 1996](#); [Guthiga, Mburu, & Holm-Mueller, 2008](#); [Mbuvi, Ongugo, Maua, & Koech, 2007](#); [Mogaka, 2001](#); [Ongugo, Mbuvi, Maua, Koech, & Othim, 2007](#); [Wanninayake, 2016](#)). However, it still needs to be determined how much women's networking and conservation initiatives have aided in protecting forests. The purpose of this paper is to examine how the participation of women in business in the local community has improved the conservation and management of Kakamega Forest.

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LITERATURE REVIEW

There are different types of ecological activities (Papavasileiou, 2015). The types of activity are characterized as ecological administration or activity in nature or eco-the executives, for example direct activity in the condition, utilization activity, the cognizant or non-cognizant acquisition of specific items, influence by people or gatherings to others on ecological issues, political and legitimate activity (Papavasileiou, 2015). All in all, natural examinations incorporate three sorts of ecological activities. Right off the bat, ecological activism, also, natural activities in the non-dissident open circle, for example, open arrangement support or the readiness to settle higher expenses, and thirdly, ecological activities in the private circle, for example, green item buys, vitality sparing practices and reusing (Stern, 2000). Other research contemplates have utilized comparable arrangements. There are three sorts of natural activities, natural activities in the private circle, in their family units, and ecological activities in people in general circle, at the network level (Hunter, Hatch, & Johnson, 2004). In every one of these activities the job of ladies is by all accounts especially significant (Xiao & Hong, 2010). Numerous logical examinations have been directed researching the relationship of sex to cooperation in ecological activities (Uçar & Canpolat, 2019; Zelezny, Chua, & Aldrich, 2000), just as other investigate considers concentrating on every day home vitality sparing practices e.g., (Carlsson-Kanyama & Lindén, 2007; Rätty & Carlsson-Kanyama, 2010). Albeit a few examinations have discovered no sex contrasts in ecological practices (Blankenau, Snowden, & Langan, 2007), most investigations presume that ladies have a more significant level of ecological conduct than men (Lee, 2009; Torgler, Garcia, & Macintyre, 2008).

Besides, some logical research is endeavoring to decipher sexual orientation contrasts in ecological activity. These dissects are identified with the socialization of the genders and the qualities to which both genders are arranged. As indicated by the hypothesis of socialization, ladies are associated to be progressively empathetic, mindful and agreeable, so they have a progressively exceptional component of care including care for nature (Zelezny et al., 2000). The socialization of men is not quite the same as that of ladies. Need is typically given to coordinating them into the work advertise in professional turn of events and financial turn of events (Wehrmeyer & McNeil, 2000). Notwithstanding, discoveries from different studies show that sexual orientation contrasts are not identified with social jobs (McCright & Sundström, 2013).

In creating nations, ladies' day by day life with respect to issues identified with the indigenous habitat and its insurance, just as their natural activities, are specifically noteworthy (Aditya, 2016; Jahan, 2008). They are included day by day in exercises identified with the protection of nature with regards to conventional home exercises. Their exercises are various, so they oversee and utilize common assets and in this way play a significant job in overseeing them. They are in direct contact with the regular habitat and they have a direct connection with it, as they gather from nature significant species, for example, organic products, vegetables, herbs, wood for fuel and water. They consider woodlands to be a wellspring of essential family needs. There is a cozy relationship among ladies and the regular habitat. Ladies' lives rely totally upon the earth. Generally provincial families rely upon nature to live. In this manner, practical neighborhood improvement can't be accomplished without the backing and acknowledgment of ladies' commitment to natural administration (Jahan, 2008; Nasrin, 2012). Therefore, this study indicates, how women help to grow their business through forest.

METHODOLOGY

Study Area

Local people used the forest for collecting fuel wood, grass for thatching and medicinal plants. They also performed important religious ceremonies there. This forest is protected as a national reserve and managed by the Kenyan Wildlife Service. It is primarily old-growth forest, supporting rich biological diversity (Omare, Kiyiapi, & Kamaara, 2013).

Data Collection

The main discussion in this paper is based on field interviews and the questionnaire survey. The questionnaire survey was administered in September and October 2017. Before this, we conducted a preliminary field study to better understand the local context. The questionnaire was distributed to 180 rural women in three villages. We

collected 149 fully answered questionnaires. The questionnaire focused on three sets of questions. The first set attempted to identify women businesses activities. The second set of questions sought to understand the various business opportunities women explored in energy saving technologies. The third part of the questionnaire aimed to explore apiculture and sericulture entrepreneurial ventures our respondents were involved in.

In order to better understand the significance of the data we collected, we reviewed past publications on rural women and the environment with particular focus on womens enterprises. We also examined reports of the International Centre for Insect Physiology and Ecology (ICIPE) that focused on the Integrated Project on Conservation of Kakamega Forest (IPCKF), Kenya Indigenous Forest Conservation Programme (KIFCP), Intermediate Technology Development Group (ITDG) and several Community Based Organizations (CBOs) reports.

RESULTS AND DISCUSSION

Commercial Production and Processing of Medicinal Plants

The first part of the survey asked our respondents to explain their commercial medicinal plant production and processing activities. We then analyzed how these activities contributed to the conservation of Kakamega forest. About 58% of the respondents were involved in the cultivation and domestication of indigenous/medicinal plants that they harvested from the forest. We found that women from about 26 households near the Kakamega Forest established Muliru Enterprise, a Small and Medium Enterprise (SME) with the support of ICIPE. It is a medicinal plant processing facility at Isecheno village in the southern part of Kakamega Forest. It processes plant materials from domesticated and cultivated *Ocimum kilimandscharicum*, *Ocimum suave* and *Lippia ukambensis* (indigenous traditional medicinal plants). It also manufactures medicinal and pest control products. The purified essential oil is used in the production of Naturub balms and ointments. These products have received wide acceptance in the Kenyan market and are competitive with major international brands. Another group of Kakamega women organized *Mondia whytei* enterprise with the support from ICIPE to operate a second processing plant. It cultivated *Mondia whytei*, a local medicinal root and manufacture of nutraceutical products called *Mondia tonic* which is currently sold in three large chains of supermarkets in Nairobi. This company and another one recruited several women near Kakamega Forest to commercially cultivate medicinal plants for them. Our respondents said that they could earn more profits from the domestication and cultivation of medicinal plants than other farming activities. The cultivation of medicinal plants requires minimal farm inputs, and there is ready market. This business has heightened their appreciation of forest biodiversity. One employee of the Muliru enterprise explained to us that the company uses part of its revenues for forest conservation activities by conservation *chamas*. These *chamas* conduct workshops on biodiversity conservation and alternative livelihood solutions. They also operate several indigenous tree seedling nurseries, which are used for on-farm planting, reforestation, and agroforestry trainings.

Clean Energy Enterprises

Our survey also attempted to understand Kakamega womens energy saving technology works in connection to Kakamega Forest conservation. About 19% of the respondents were involved in clean energy businesses. For example, the Intermediate Technology Development Group (ITDG), an NGO, hired women to design and install energy saving cooking devices in rural homes. Another NGO, the Global Giving Foundation, trained rural women to make Mwangabora solar lamps from recycled materials. Other women made and sold eco-friendly jikos or cooking stoves at local markets. In the past Luhya women in Kakamega used to spend many hours to collect fuel wood in Kakamega Forest as their traditional three-stone cooking method requires a large amount of fuel wood. Women suffered from smoke and hard labor. This problem induced them to adopt clean and efficient cooking technologies. The respondents noted that clean energy businesses dramatically reduced the amount of fuel wood they need for cooking. Some of them recycled waste to form briquettes which they use as fuel. These business activities have significantly reduced pressure on forest.

Apiculture and Sericulture Enterprises

We then attempted to assess how apiculture and sericulture activities had promoted Kakamega Forest conservation. Through its commercial insects programme, ICIPE trained Kakamega women in income-generating sericulture and apiculture technologies. Chama members acquired skills for modern beekeeping methods and

honey production. Iguhu silkworm chama was involved in sericulture. ICIPE sells silk worms at affordable price to women in agribusiness chama. It later buys cocoons from these women for export. The Kenyan government and the Japan International Cooperation Agency (JICA) established the National Sericulture Research Centre at the Kenya Agricultural and Livestock Research Organization (KALRO) stations at Kakamega which provides training and extension services to women in silkworm farming. Our respondents noted that through apiculture and sericulture activities they became aware of the ecological and economic importance of bees and silkworm in Kakamega Forest. They planted indigenous trees in the forest. The construction of hives, rearing cages, and related appliances for rearing and harvesting of silkworm and honeybees created jobs for local artisans as well as awareness of the sustainable use of timber products. Some women we interviewed said they used mulberry tree from Kakamega Forest for fuel, fodder and fruits. Women entrepreneurs in apiculture introduced the eco-honey label with the support of ICIPE to improve the market potential of their products. Organic certification systems were established to increase the market profile and economic advantage.

CONCLUSION, RECOMMENDATIONS AND IMPLICATIONS

Overall, we found that Kakamega women are central to the success of sustainable management of Kakamega Forest. This study highlighted some of the entrepreneurial activities Kakamega women are involved in the conservation of Kakamega Forest. About 58% of our respondents were involved in commercial cultivation and processing of medicinal plants. Their involvement in business activities heightened their appreciation of forest biodiversity. Other women were involved in apiculture and sericulture activities which enhanced conservation and production of bees and silk moth species from Kakamega Forest.

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