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The Effect of Forest Management Initiatives on Sustainability of Forests: Evidence from Uganda

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Abstract: ***The study was about the effect of forest management initiatives on sustainability of forests in Isingiro District, Southwestern Uganda. The study adopted a cross-sectional descriptive design and targeted district forestry and environment officials, local residents, local leaders (LC II-III) and environment committee representatives at local councils II & III in Isingiro district. Purposive and simple random sampling techniques were used to select respondents. Questionnaire and interviews were used as a data collection method. Data analysis used descriptive statistics in form of frequency and percentages while data from primary source particularly interview guide was compared, validated and confirmed with data from secondary sources. Findings from the field established that forest management has promoted sustainability of forests in the district through gazetting forest premises, existing forests being carefully monitored and proper land management being maintained. Sustainability of forests was being hindered by Limited resources for implementing forest management policies and negative perceptions towards forest management. Promoting sustainability of forests in Uganda is an enormous work that requires concerted efforts from all the different stakeholders. There is need to increase funding in the forestry department to enable the planners make plans and enforce them at up to the community level.***

Keywords: Forest, Management, Initiatives, Sustainability

1. Background

The Millennium Ecosystem Assessment (MEA), a scientific undertaking involving over 1300 experts working in 95 countries, indicates that a large and increasing number of forest ecosystems, populations and species are threatened globally or being lost due to the loss and degradation of forest habitats, and that this reduction of forest biodiversity will be aggravated by the effects of climate change. Tropical moist forests are home to the largest number of threatened species of any biome. It is assumed that numerous, but not yet scientifically described, species are presently being lost together with their tropical forest habitats (MEA, 2005).

Forest resources are a mainstay in the three pillars of forest management namely economy, society and environment (Kyanja and Byarugaba, 2001). Many world economies including Uganda are wholly or partly dependent on forest resources (FAO, 2012). Africa has made steady progress towards forest management in the past decade compared to the 1990–2000 period. The net loss of forest area has slowed down, and the areas of forest designated for the conservation of biological diversity and included in protected areas have slightly increased (FAO, 2010). The percentage change in forest area was positive in eight countries and negative in 37 countries both during the periods 2000-2005 and 2005-2010. There was no change in forest area in six countries for the same periods. Inclusive green growth approaches can contribute to preserving forest resources and their ecosystem services. African countries must intensify efforts in order to achieve the 10 per cent forest cover target through sustainable forest and land use management as part of inclusive green growth initiatives.

Forest management practices in Ugandan date as far back as the early 1900s with the colonial masters. In 1927 administration of the forest was backed by legal tender (Munasinghe et al., 1994) and since then policies consistent with selection of tree species, demarcation and creation of reserves have been vigorously pursued. These over the years have tested the times and revised to meet evolving forest resource management expectations. Since the 1960s the sector has been under a ministerial portfolio with a comprehensive master plan rolled out for wildlife and forests resources and an institutional framework that demands for policy analysis, evaluation and monitoring. The process with time has generated into stakeholder management initiatives under a collaborative effort that succumbs to active participation by forest communities. Today meticulous standards and threshold limits exist for major forest resource-use harvesting. A certification scheme also applies for timber products making exports of round logs a thing of the past. This puts Uganda on the world map as one of the emerging countries in the World to be making headway towards forest management.

In Isingiro district, sustainability of forests still faces a number of challenges that need concerted efforts from different stakeholders. The current forest coverage in the district is still limited whereby government forest reserves are only two namely Rwoho forest reserve covering Kabuyanda and Ruborogota sub counties in Isingiro south and Kyahi forest reserve in Masha sub county in Isingiro north. These forest reserves are managed by National Forestry Authority which ensures that they are protected from encroachment by the community (NFA, Western Region Surveillance Report, 2014). In addition to the forest reserves, the district forest department has been encouraging community afforestation programs such that they can supplement the forest reserves to promote sustainability of forests in the district. Despite the interventions put in place to promote sustainability of forests in the district, the state of forests in Rwoho and Kyahi forest reserves has been deteriorating.

There has been persistent encroachment on the forest reserves by the surrounding community to extract timber and firewood for sale and household energy use. This has been experienced in the two forest reserves of Rwoho and Kyahi. In addition to forest encroachment through deforestation, the current forests and community planted trees have been attacked by pests and virus leading to drying up of leaves consequently leading to heavy loss to the already few forests (NFA Quarterly Monitoring Report, 2016). Amidst these challenges, there have not been coordinated efforts between NFA and district forestry authorities in designing and implementing appropriate interventions. This lack of coordinated initiatives has left forests vulnerable to deforestation in addition to inability to mobilize more people to plant more trees and sustainably use the current ones. The district forest department has been under funded to enable it effectively carry out extensive forest programmes in the district. Other challenges have been failure to demarcate and gazette national forest reserves, leaving them susceptible to encroachment for agricultural activities and limited sensitization of the community on the importance of forest management towards sustainability of the existing forests and failure to interpret forest policies for the community to understand and embrace for sustainability of forests. Currently the district is experiencing long dry spells and unpredictable seasons which have adversely affected agriculture and caused famine in areas of Bukanga and Isingiro north (Isingiro district Five year strategic Plan, 2011/12-2016/17). Basing on the above indicators, one gets a feeling that sustainability of forests has remained a challenge in the area, despite the current forest management initiatives. There is more attention of satisfying immediate needs rather than conserving for long term benefits while using the existing forests. Yet it is evident that sustainability of forests is associated with various socio-economic and environmental benefits.

2. Relevance of the Study

The issue of environmental management is a matter of global concern particularly at a time when global warming is threatening every corner of the globe. Efforts to save forests from destruction have been compromised due to corruption and increased need to industrialize the country. Government agencies and Civil Society Organisations involved in forestry management have set up a number of initiatives to have the issue of environment degradation sorted but there are still loopholes. This study was hoped to bring to light the effect of forest initiatives on sustainability of forests in the Uganda.

3. Methodology

The study adopted a cross-sectional descriptive design. Cross-sectional design helped the researcher to gather data from a sample of population at a particular point in time (Sekaran, 2003). The research design was descriptive in order to describe relevant aspects of the phenomena of interest. The design exploited both qualitative and quantitative approaches. The study population comprised of district forestry and environment officials, local residents, local leaders (LC II-III) and environment committee representatives at local councils II & III in Isingiro district. From the district, only 4 sub counties were considered basing on the severity of degradation due to deforestation and these comprised of Kabuyanda, Ruborogota and Masha sub counties (District Environment Office, 2011). The targeted comprised of both male and female respondents. Quantitative analysis of data collected from the questionnaire was done using Statistical Package for Social Scientists (SPSS).

4. Results

Forest management initiatives towards sustainability of forests in Isingiro district

The study initially sought to identify some of the forest management initiatives that have been used towards sustainability of forests in Isingiro district and the respondents' views were presented in figure 1.

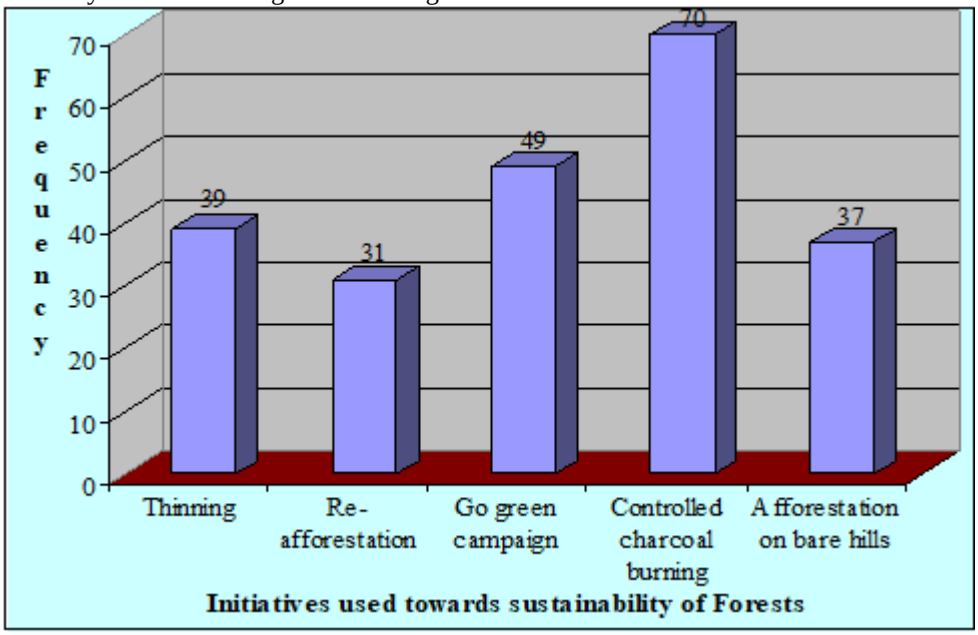

Figure 1: Forest management initiatives towards sustainability of forests in Isingiro district

One of the current forest management initiatives towards sustainability of forests was revealed by 70 (30.9%) respondents as controlled charcoal burning. It was learnt that charcoal burning from forests had reduced with the intention of reducing the pressure that had been put on existing forest reserves and forest plantations.

In support of the findings, one of the forest officers commented thus;
"As part of the campaigns to preserve and sustain our forest reserves, we have put restrictions on the practice of charcoal burning in and around the forest reserve. This has been done to reduce indiscriminate cutting of trees for charcoal production which had left the land increasingly bare and exposed to soil erosion and flooding among other effects. We hope this will to some extent help in the sustainability of existing forest reserves and its accrued values" (per.com.District Forestry Officer, June 2017).

Go green campaign was mentioned by 49 (21.7%) of the respondents as another forest management initiative used towards sustainability of forests in Isingiro district. The go green campaign has been promoted among the community members sensitizing them about the advantages of keeping environment green through sustainable use of environmental resources including forests. This has been embraced as a means to promote sustainability of forests in the district.

More 39 (17.3%) of the respondents pointed out thinning as part of the forest conservation initiatives aimed at promoting sustainability of forests. It was learnt that thinning has been done in forest reserves and privately owned forests such that only bigger trees are left to grow for long term to ensure sustainability of such forests. Therefore only the thin trees were removed and used for cooking to spare the sizeable ones.

Afforestation on bare hills was cited by 37 (16.4%) of the respondents as another forest management initiative towards sustainability of forests in the district. A number of bare hilly areas have been planted with various tree species such as eucalyptus and pine trees to protect environment. Such trees have added to the existing forest reserves hence leading to sustainability of forests. Re-afforestation was cited by 31 (13.7%) of the respondents as another forest management initiative used to ensure sustainability of forests in the district. This has been done on the degraded areas to ensure that there is regeneration and revegetation as part of sustaining forests in the district.

Ways in which forest management initiatives have promoted sustainability of forests in the district

The respondents were initially asked whether the current forest management initiatives have been effective in promoting sustainability of forests on Rwoho and Kyahi forest reserves. In response, mixed views were obtained whereby majority 56 (84.8%) of the respondents agreed while the remaining 10 (15.2%) of the respondents disagreed that the current forest management initiatives have been effective in promoting sustainability of forests. The findings indicated that to a large extent, the current forest management initiatives have been effective in promoting sustainability of forests.

The study further highlighted some of the ways in which forest management has promoted sustainability of forests in the district as presented in table 1.

Table 1: Ways in which forest management has promoted sustainability of forests

Responses	Frequency	Percent
Environment friendly trees planted	29	12.8
Existing forests harvested and replaced after 30 years	34	15
Proper land management maintained and protected	41	18.1
Existing forests carefully monitored	45	19.9
Gazetting forest premises	76	33.6
Total	**226**	**100**

As presented in table 4.8 above, one of the ways in which forest management has promoted sustainability of forests has been revealed by 76 (33.6%) respondents as gazetting forest premises of the forest reserves. It was revealed that there has been successful gazetting and demarcation of the forest reserves and these boundaries have been agreed upon with the surrounding communities to ensure that no conservation conflicts have occurred. This has ensured that the gazetted areas are well protected from deforestation hence sustaining the forests there in.

In support of the above one of the NFA officers, Mbarara region had this to comment;
"One of the achievements accruing from the current forest management initiatives has been successful gazetting of land under forest reserves. By gazetting the forest reserve land it has made it easy to deter forest encroachers by use of forest guards to patrol around the demarcated land area. This has consequently preserved a bigger percentage of forest reserves in the district especially Rwoho and Kyahi forest reserves" (per.com. NFA officer, South Western Region, June, 2017).

Forest landscape restoration aims to regain ecological integrity and enhance human well-being in deforested or degraded forest landscapes (Maginnis and Jackson, 2002). The process brings stakeholders together from different sectors to put in place a variety of land-use practices that will help to restore the social, environmental and economic functions of forests and trees across the landscape. Since the launch of the Global Partnership on Forest Landscape Restoration at the sixteenth session of the FAO Committee on Forestry (COFO) in March 2003, organizations and governments have been exploring the concept as a possible complement to the management and protection of forest resources.

More 45 (19.9%) of the respondents pointed out that existing forests have been carefully monitored in the district to ensure that no further damage is done to the forests especially those under the control of the government including Kyahi and Rwoho forest reserves. As a result, such forests have been sustainably used whereby people have been allowed on permission and for purpose of searching for herbs for medicine. According to the World

Bank (2004), biodiversity is directly responsible for around 40% of the world's economy, particularly in sectors such as agriculture and forestry and for providing ecosystem services such as clean water and soil fertility. 70% of the world's poor live in rural areas and depend directly on biodiversity for their survival and well-being. It is estimated that approximately 60 million indigenous people are almost wholly dependent on forests. 350 million people depend on forests for a high degree for subsistence and income, and about 1.2 billion people rely on agro-forestry farming systems.

Proper land management has been maintained and protected as pointed out as another way in which forest management has promoted sustainability of forests in the district. Proper land management has been promoted among the community members where agro forestry has been encouraged for every household along with crops. This has increasingly been embraced hence sustaining the forests and even increasing the previous forest cover. According to IUCN (2004), with the encouragement of the State Forestry Administration of China (SFA), the IUCN Livelihoods and Landscape Strategy is working with the Beijing Forestry Society to demonstrate the valuable role forests can play in improving the lives of the rural poor. Ultimately the project aims to enhance local peoples' access to forest products, improve benefits for community livelihoods, and increase household income by 25%.

It was also learnt that existing forests have been harvested and replaced especially after a long time. This applied to forest reserves and privately owned forests that have been gazetted for a fee by government for an agreed time before they can be cut down. This has to some extent been undertaken by some individuals by cutting trees after 10 years and above and ensure to plant more trees consequently leading to sustainability of forests in Isingiro district.

It was also ascertained that environment friendly trees have been planted in the district. It was established that people in the district have been sensitized on the appropriate trees that are friendly in conserving environment and NFA has endeavoured to provide some of these tree seedlings while some are being given at subsidized process for most people to afford and plant. This has contributed towards sustainability of forests.

Extent to which the current forest management initiatives have failed to promote sustainability of forests in Isingiro district

There is continued deforestation in forest reserves in the region. This was possibly attributed to some forestry guards and managers conniving with traders to cut down and sell wood products. Furthermore, it was learnt that some of the community members were risking visiting the forest reserves at awkward hours in the night and cutting down trees of their choice.

Limited initiatives from community to plant trees was found out to another extent of failure by the current forest management initiatives to promote sustainability of forests in Isingiro district. It was revealed that the community members around forest reserves and in Isingiro district as a whole were not motivated enough to plant adequate number of trees as part of the campaign concerning sustainability of forests. This was partly attributed to laxity by relevant authorities to keep monitoring the tree planting campaign and lack of funds to prepare adequate nursery beds from which community members can access the seedlings for planting. However contrary to the above findings one of the environment committee representatives had this to say;

"Although there has been a lot of campaigns to encourage people to plant trees, the efforts have less paid off as most people have not yet embraced the campaign. This has been majorly attributed to limited land for most households making it difficult for them to embrace tree planting. This has meant that most people are now concerned with securing land for agriculture rather than tree planting or agro forestry" (per.com. environment committee representative around Kyahi forest reserve in Masha Sub County, June, 2017).

Limited monitoring by forest officers on forest reserves and forest plantations has been cited by 7 (10.6%) as another form of failure by the current forest management initiatives to promote sustainability of forests in Isingiro district. It was revealed that most of the officials charged with overseeing forestry management activities have rarely done monitoring to ensure that the set targets for forest management are met. This has eventually led to failure to address some of the weaknesses hence falling short of promoting sustainability of forests in the district.

5. Conclusion

The current forest management has affected sustainability of forests by gazetting forest premises through demarcation and boundary setting. This has been supplemented by regular monitoring of the foresee reserves and proper land management being maintained and protected through good agro forestry practices. It thus worth noting that to a large extent, forest management has ensure sustainability of forests in the district. Despite the realized success in terms of enabling sustainable forests, the current efforts to promote sustainability of forests have been met with some challenges, the major ones being negative perceptions towards forest management that still prevail among some community members, limited resources for implementing forest management policies and limited political will by implementing stakeholders.

6. Recommendations

It was found out that most community members have little knowledge on the relevance of conserving forests. This calls for more and regular sensitization programmes to be extended to the communities in rural communities as a means to create awareness and make the populace be part of forest conservation initiative. Considering the current state of affairs, it will be difficult for the government to promote forest management initiatives minus the efforts of the people.

The forestry department in Uganda is underfunded and this has compromised the smooth running of its activities. Thus, there is need to increase funding in the forestry department to enable the planners make plans and enforce them at up to the community level. With adequate funding, activities aimed at conserving forests and increasing land under forest cover through afforestation can be timely implemented.

Apparently, there is a disconnection among different stakeholders involved in forestry management particularly government agencies and civil society organizations. This call for the need to design a network of stakeholders that promotes better and smooth coordination among relevant stakeholders. With this network, information dissemination on forest and environmental issues in general can be disseminated easily and more people empowered with knowledge and guidelines concerning forest management.

The communities surrounding forests have a negative attitude towards forestry management. They look at every initiative to manage a forest as a dis-service to their community. Therefore, more incentives should be provided to the community members especially those with adequate land to embark on tree planting that that would last for a long time. This will add on the existing forest cover in the district and consequently reduce pressure on the forest reserves hence forest sustainability.

Local councils have limited resources to engage in forest management initiatives in rural communities. Local councils should be empowered and strengthened through training in simple forest management skills. This can enable Village and Parish Committees and local communities to 17 manage forest resources better and to broadly participate in making and implementing forest policy in Uganda. Already, the Forest Department has been piloting collaborative forest management in selected forest reserves. From the pilot studies, there is some evidence to show that involvement of local communities in forest management may help to improve forest conditions.

At present, there is inadequate sanctioning of violators of forest rules. Therefore the various levels of local governance should be sufficiently authorized and empowered to resolve forest-related conflicts, apprehend and properly fine offenders instead of having to pass them over to the District Forest Offices or Sub-county level forest guards. In addition to strengthening local forest institutions, there is a need to review the amount and nature of penalties given to those who repeatedly fail to comply with forest rules and regulations.

7. Declaration

The authors declare no conflict of interest.

8. Funding

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