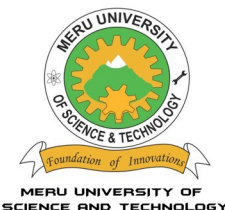




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The logging moratorium in Kenya and its impacts on community forests associations: A case study of Meru County state forests

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ABSTRACT

KEY WORDS

Communities

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Livelihoods

Stakeholders engagement

The Forest Sector is Key to Kenya's social and economic wellbeing since most of the economic activities rely on environmental based resources for their sustenance. The Forest Conservation and Management Act, 2016, provides for the conservation and management of public, community and private forests. This has brought a paradigm shift in forest management from central command to involving various stakeholders. Adequate stakeholders engagement in the management of forest resources, results into minimal conflicts. Local involvement promotes a sense of ownership to the Forest Adjacent Communities. Consequently, reducing conflicts in the management of the forest resources. This dissertation focuses on the impacts of logging moratorium on Community Forest Associations in our state forests, with a focus of two CFAs in Meru County. It uses both quantitative and qualitative research design. In depth literature review was, used to enrich the research findings. Data was collected from 289 Mucheene and Ruthumbi CFA residents. Their views on the impacts of logging moratorium to the CFA were also documented. The study found out that forest conservation cannot be delinked from livelihood improvement by the Forest Adjacent Communities. There lies difficulties by the area population of the study area to support their life demands with moratorium in place owing to the fact that they highly depended on the forest to support their livelihoods pre moratorium. The study found out that 93.4 % of the respondents believes that legal logging promotes job creation in the sawmill value chain circular economy. Findings are expected, to inform policy on forest conservation in collaboration with the FAC. The study recommends that the Government should adapt a regulation mechanism that safeguards logging in the extension forest of the community whenever there is an ongoing logging moratorium in the public forest.

Introduction

Before independence in 1963, forest cover was at 12% but today it is at 7.4 % only, according to the 2018 April taskforce report on forest resources management and logging activities in

Kenya. On the other hand, Kenya's closed canopy forest cover currently stands at about 2% of the total land area, compared to the African average of 9.3% and a world average of 21.4 per cent. Illegal logging, charcoal production and human

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encroachment have continued to ruin the Country's watersheds. The importance of forests cannot be underscored, in the dire need for conservation of the biodiversity, soil resources and water. Jerotich S. R. (2018). The strength of conserving these resources owes itself to their importance in the lives of the communities that stays adjacent to the forest. A number of stakeholders, including local communities, are involved in conserving and managing natural resources for the expected success of enhanced conservation efforts, Purnomo et al., (2006). Several countries of the Asia-Pacific region have imposed total or partial logging bans (or similar restrictions on timber harvesting) in natural forests as a response to natural disasters that caused deforestation or degradation of forests. Banning or restricting timber harvests has thus been viewed as a corrective measure and a strategy to promote forest conservation and protection, and to assure broader forest benefits for the future, Thomas R. et al., (2001)

The forest sector contributes about Kenya Shillings 7 Billion to the economy and employs over 50,000 people directly and another 300,000 indirectly as stipulated in the Task force report on forest resource management and logging activities, (2018). Forest ecosystems also enhance landscape resilience to climate change. In the country's water towers, forests provide environmental services that include water quality and quantity, reduction of soil erosion and creation of microclimatic conditions that maintain or improve productivity. Forests are among the most effective sinks of greenhouse gases, which cause climate change, and hence they are important in contributing to climate change mitigation. In the recent years, Kenya's forests depletion is at an alarming rate of about 5,000 hectares per annum. This might lead to an annual reduction in water availability of approximately 62 million cubic meters, translating to an economic loss to the economy of over USD 19 Million, Task force report on forest resource management and logging activities, (2018). This depletion is associated with illegal logging, charcoal production and human en-

croachment. The depletion has the potential to rollback strides towards the attainment of Vision 2030 and the Government's Big Four Agenda of food and nutritional security, affordable and decent housing, universal healthcare and manufacturing if not urgently addressed. The ban on logging came about following recommendations by Kenya's Members of the National assembly environment and natural resource committee. The Deputy President HE, Dr. William Ruto, then, following this, suspended logging on all the Kenyan forests for a period of 90 days on 24 February 2018. Consequently, He recommended that the environment ministry to form a task force on forest resources managements and logging activities in Kenya working group to find solutions to the crisis of degradation on Kenya's Water Towers. To safeguard conservation of the key water towers, The Forest Act of 2005 formed the Kenya Forest Service (KFS) to replace the old forest department. The former Forest Department got support almost entirely from forest revenues and was as a result chronically underfunded. Under the 2005 Forest Act this has changed somewhat, with for example, the creation of special funds such as the Water Towers Conservation Fund.

The new Forests Act 2007 recognizes the role of communities in the management of the country's forest resources and encourages their involvement as either co-managers or contract managers of the forests. According to Article IV, Section 46 (1) of the law, communities that are the users of particular forests can be involved in the management of such forests only by forming community forest associations (CFAs). CFAs considered as second-level CBOs formed by several CBOs with stakes in particular converging forests.

Environmental conservation goes hand in hand with livelihood improvement to the local communities surrounding the forested areas in Kenya. High poverty levels will always result into forest degradation, Motoe. M., (2019) a ban on logging indicates low-income levels to the local communities. With PFM encouraging formation of CFAs, governance becomes hard given that manage-

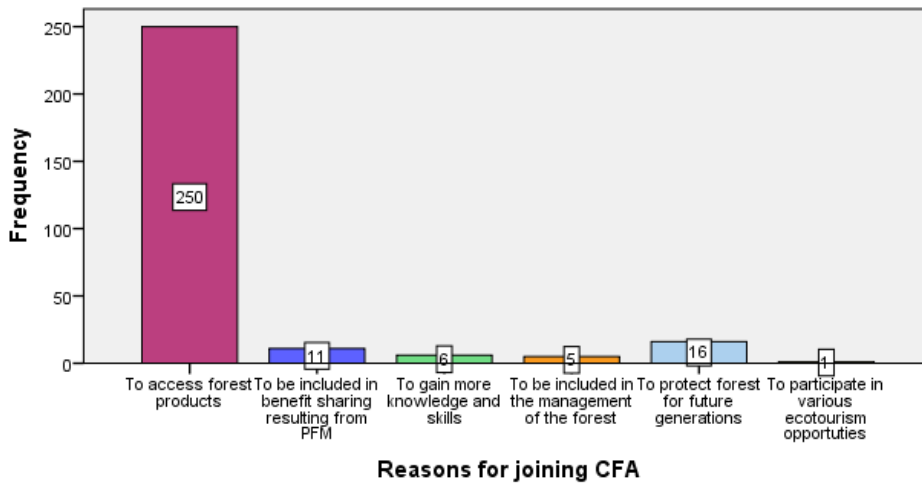


Figure 1: Reasons for joining the CFA

Percentage of Respondents	Beliefs
93.4 %	Legal logging promotes job creation in sawmill value chain.
94.1 %	Employment creation and direct benefits empowers CFA's economically
82.7 %	By forest adjacent communities securing forest goods, they do not destruct forests.
96.1 %	A well-conserved forest is an indicator of economically empowered community.
79.9 %	With IGA's, there are minimal illegal logging.
86.5 %	Conflict can arise where forest conservation activities restrict resources access to communities.

Table 1: The perception of FAC on forest conservation and livelihoods

sampling method, random management units (beats) of the two CFA's to form the strata's, whereby stratification based on CFA membership. This was to ensure that CFA members were represented during the survey.

Results

This survey entailed 289 respondents from the two CFAs namely, Ruthumbi and Mucheene CFAs. Women took part largely in the study at 56.7 % while Men at 43.7 % of the respondents. More women take part in most of the CFAs, s activities since culturally as in Africa many women and girls are the main collectors of fuelwood, Sunderland et al., (2014) these activities include, PELIS and firewood collection. 86.2 % of those interviewed were household decision makers. This implies that the study targeted the right people in the form of accurate infor-

mation. To get the impact on logging moratorium, we must deal with those that make decision at the households. The percentage of those with no land 29.8 % forms the source of casual laborers in the tea farming areas of Ruthumbi CFA and Machaka informal settlement found within Mujujune CBO of Mucheene forest. Most of the families own land that is an acre or less. It should be noted that those with land either inherited or bought it. In terms of having indigenous trees on their farms, 64.4% of the respondents have trees on their farms with only 11.1% having indigenous trees. This poses a great threat to forest cover with the logging moratorium, since the exotic species are the most sought out for timber and firewood. By researching on the key decision maker on tree usage on the farms, the aim was to check on who to target in case of any plans to do conservation activities .The decision makers are also the most likely people to cause any damage in the forest. Respondents derived their incomes from the forest. This comprised 67.1 % of the total respondents notably: (Firewood 48.1%, Tree seedlings 5.2%, Medicinal plants 23.5%, Animal fod-

	User benefit	Percentage
1	PELIS	47.8%
.		
2	Beekeeping	14.9%
.		
3	Firewood	34.3%
.		
4	Timber	2.1%
.		
5	Medicinal Collector	13.8 %
.		

Table 2: Preference on forest user benefits

der 18.0%, PELIS 4.5%, & Apiary 0.7 %.) On the effect of the effectiveness of the CFA governance 93.8% of the respondents indicated that the logging moratorium has affected CFA'S effectiveness. The impact was exhibited by the frequency to holding meetings.

Factors that resulted into FAC's joining CFA

Figure 1: Showing reasons for joining CFA

Livelihoods of communities surrounding the forest relationship with forest conservation

Discussions

Forest user rights/benefits

According to section 49-2 of the FCMA 2016, the management agreement between the Service and the Community Forest Association shall confer on the association all or any of the following forest user rights: Collection of medicinal herbs, Harvesting of honey, Harvesting of timber or fuel wood, Grass harvesting and grazing ,collections of forest produce for community-based industries, Ecotourism and recreational activities, Scientific and education activities, Plantation establishment through non-resident cultivation, Contracts to assist in carrying out specified forestry operations, Development of community wood and non-wood forest-based industries, From time to time, agree upon other benefits, which may, between an association and the service.

The study aimed at ranking the above forest user rights and it emerged that; Plantation estab-

lishment through non- resident cultivation, PELIS, was the top ranking followed closely by beekeeping and harvesting firewood. This implies that forest conservation cannot be, delinked from livelihood improvement by the FAC. On looking further on the factors that motivated community members to join CFA, it came out clearly that to be able to access forest products and to be included in benefit sharing resulting from PFM was top among other factors.

Proper management and conservation of the forest and associated resources have improved community participation in PFM. Benjamin. M.K, (2014). With Moratorium in place, most of the forest user rights have curtailed, and this has resulted in various social economic impacts.

The sawmilling industry in Kenya largely depends on wood sourced from public plantations and private farms. The public forests supplied about 80% of the raw materials while 20% was sourced from private tree growers before harvesting moratorium was imposed. Joram K. et al., (2020). This implies that the forest cover in the extension area is under siege and has drastically reduced with the moratorium. After the moratorium most sawmills, especially in the study area were closed down and with two of them reducing operations to 40 %. This resulted into massive job losses in the locality especially among the youths that were dependent on casual jobs and reduction in rentals occupancy in the local markets. The closure of the sawmills resulted in collapse of retail business due to reduced purchasing power of the local population especially in Mujujune Market of Mucheene CFA.

The ban on logging driven by the need to protect the water towers in Kenya. On whether the moratorium has achieved its objective on this, The KFS Foresters and the CFA officials noted the change in the forest ecosystem as recently sprouting seedlings. The ecological changes attributed to the moratorium on logging by 46.9 % of the moratorium on logging. This was a significantly low percentage. The results agree with a study done in 2016 on logging bans in Asia and

Pacific, where it was, noted that logging bans do not necessarily translate to immediate change in the ecosystem. Keraka J.N (2019.) The study recommends that policies, legislation and government actions should have qualitative assessments of indicating changes in ecosystem health in order to establish the effectiveness of policies and actions. The only monitoring mechanism by KFS to establish differences in ecosystem health is tree census. Keraka J.N (2019).

Impact of logging moratorium on the CFA's Livelihood

According to the findings of the study, 29.8 % of the respondents do not own any land. The forest sector is classified, as a key enabler of the Big 4 agenda .The harvesting moratorium has negatively affected the achievements of the big 4 agenda through scaling down of various wood dependent sectors such as wood manufacturing, construction of affordable housing, indirectly food security and universal health, Joram K. et.al., (2020). In line with the above a ban on logging, implies that there are no more farming plots under PELIS program and generally restricted access to forest derived ecosystem goods and services. From the analysis, there is an agreement that community forest programs are great avenues towards achieving forest conservation and management, while at the same time sustaining and providing livelihoods to the community living around the forest.

Forest management and conservation are the long-term investments in the sense that always there should be a fair distribution of the benefits of forest resources to meet the needs of the present generation, but also meet the needs of the future generation. This is in line with the concept of sustainable development. This is geared to reduce poverty, since a world with poverty, will always be prone to ecological catastrophes.

Firewood production and consumption

Firewood is a core forest derived product by the FAC. About 87% of the respondents use firewood for domestic energy needs. The major suppliers of

firewood are private tree growers and largely from the public forest. The moratorium has led to scarcity of firewood and thus resulting into higher prices. This has greatly reduced the marginal propensity to save. With the largest source of firewood having been from the public forest, this has resulted into the degradation of the forest cover in the rural area to sustain the huge firewood demand. High cost of living has thus greatly affected the FAC. The moratorium led to severe shortage of timber and firewood in the country resulting in increased farm gate prices. Joram. K. et al, (2020.) 2019, census (KNBS) reveals that, 84.1 % of the conventional households use firewood as the main type of cooking fuel. This agrees with the study findings closely.

Employment creation relation with CFA economic empowerment

as per 94.1 % of the respondents, Employment creation and direct benefits empowers CFA's economically. CFAs countrywide continue to improve on their roles and responsibilities in poverty reduction, employment creation and improvement of livelihoods as well as conservation of forest resources. Roselyn. W. (2014.) CFAs in the country, Perdure to improve on their roles and responsibilities in eradicating poverty, supporting livelihoods and using conservation of forest resources. This is in accord with the forest act 2005, which has mandated CFAs to carry out different activities within the forests. This has led to improvement of forest conditions and status while at the same bolstering the livelihoods of members. Desmond J.O. (2021).

Legal logging relationship with job creation

It was ascertained that 93.4 % of the respondents believed that legal logging promotes job creation in the sawmill value chain and other value chains. As outlined by, Rebecca R. et al, (2018) in their study on creating forestry jobs to boost the economy and build a green future. Forestry potential for employment generation stems from several factor low capital requirements, forestry are

ment is by Community leaders who earn a living from their farming activities thus spending time running CFAs without any form of direct benefit is challenging. The Act of 2016 provides for the decentralization of the forest management to the adjacent communities through CFAs. Getting to know the driver for community members to take part in forest activities is vital in assessing the impact of logging moratorium and the degree of devolution of the forest governance at the grass root level of the CFAs. Previous studies undertaken on CFA's by various researchers on governance have been on, among others community participation, Sylvia J. R. (2018) and conflict management, Ogechi G.K. (2015). Logging moratorium impacts on CFAs not studied yet.

The study therefore sought to understand the relationship between ban on logging and its ripple effects on CFAs effectiveness, livelihoods and the ranking of forest user benefits in the order of preference.

Materials and methods.

Study area description

Study conducted in Ruthumbi and Mucheene forest stations. Mucheene Forest Station (lies along Latitudes 00- 7' 40 N and Longitude 350 20' 0 E). Falls within the eastern part of Mt, Kenya ecosystem and administered by KFS is in Buuri East Sub County. Ruthumbi forest station is in Imenti South sub-county of the Meru County. It borders Meru forest to the north and Chogoria to the south and administered by KFS. While, Ruthumbi forest lies along (Latitudes, 00- 5' 60 N and Longitude 370 40' 0 E). The forest forms part of the Eastern Mt. Kenya forest reserve and approximately covers a total area of 12,605 Ha that extends from Uruku GK prison (Kimitu) in the north to Mbogori bordering Chogoria forest reserve in the south. One can access Ruthumbi forest station from the main Meru- Nairobi highway at Chogoria or from Nkubu junction. From Chogoria Junction the station offices are about 30 Km and from Nkubu junction 21 Km.

Sampling design

Secondary data was obtained from literature review of published data sources from local, national and international levels. This was instrumental in achieving 2nd and 3rd objectives. Mostly of these sources concerned policies, laws and regulations (statutory and customary), governance arrangements at national levels and stakeholders in the forest sector. Whereas, Primary data obtained from pre-tested questionnaires, focus group discussion and key informant interviews. The above was essential in achieving all the three objectives.

The key stakeholders from the forest adjacent communities of; Ruthumbi CFA and Mucheene CFA were targeted for interviews using a semi-structured questionnaire to establish the impact of the logging moratorium on CFA's. Qualitative data was obtained from focus group discussions with the CFA's members from the forest adjacent community members. These individuals were pre-selected based on their level of forest dependence and awareness on logging moratorium in the areas they lived. They include CFA members, youth, women and men consuming and trading in forest products. Purposive sampling technique was used to select Ruthumbi and Mucheene CFA members in the forest site due to their long-term PFM experience in the study area, on logging activities especially saw millers, casuals engaged on logging activities, members engaged on PELIS programme and various user group members making up the CBO's.

Two focus group discussion held in the two forest sites with at least 10 members from each CFA, drawn randomly from the CFAs members adjacent to the forest to provide the needed information. Interview schedules were further administered to institutional players like KFS staff government officials, CFA staff and other stakeholder's officials selected by use of snowball sampling method who were also to be part of focused group discussion. This was instrumental in achieving all the three objectives. For household interviews, the respondents were selected by use of stratified random

labor intensive with relatively low capital investment and Flexibility and adaptability in diverse situations. The variety of the tasks required and the levels of technology available offers various employments options. A number of countries have included job creation in forestry as an integral part of their economic recovery plans. E.g. Canada, Chile and China. In India, forestry employment is one focus of the national rural employment guarantee act, launched in 2005. Multiplier effect. Since a major share, of a workers income goes to the purchase of goods and services, every one, job created in forestry generates an additional 1.5 to 2.5 jobs in the economy.

Forest goods and services relationship with Forest destruction by FACs

As stated by 82.7 % of the respondent's, believed by forest adjacent communities securing forest goods, they do not destruct forests. A good relationship with the KFS and the CFA via participatory forest management is a sure way to Sustainable Forest Management. Improved economic contributions from the forest sector in the future are likely to hinge on improved governance. Improved governance has two facets – changes that directly address gaps in efficient economic utilization of forest values, and changes that aim at the long term sustainability of both economic and other values from forests. These include ecosystem, cultural, and spiritual values in addition to the cash and non cash economic contributions. The first set of changes accomplished, through top down decisions based on better information and evidence. However, for the second set of improvements, greater participation of constituents, affected by policy decisions, is critically important as well. Arun A. et al, (2013.) Historically, forest have played a major role to influence patterns of economic development, supporting livelihoods, helping structure economic change and promoting sustainable growth.

A well conserved forest relationship with economically empowered community. As maintained by 96.1 %, a well-conserved forest is an indicator

of an economically empowered community. On the authority of, Oscar .M. (2013,) on his study on: empowering the community for effective environment management, a case study of Kakamega Forest. The studies carried out on the management of natural resources largely focus on the conservation of the resources; rather than community development, or a balance between the two. Few studies for instance by Earlham College 2005, Colorado State University 2007, and D. Muller and John Mburu 2009; show that the management challenges are attributed to the management relationship between the community and the government. According to Paul M. G. et al., (2006,) the community is dissatisfied with the management regimes of the Kakamega forest. The community is not consulted over the use and management of the forest, BIOTA Africa 2008. H.M. Tsingalia and F.N. Kassily (2009). Observe that there are conflicts between the government and the community over the management of the forest.

Development interventions carried out on the forest do not consider the issues of the FAC. As an outcome, the community is largely passive in the environment management and development process. Therefore, the contribution of the community to the co-management of the natural resources is limited despite of the development initiatives established in the community, to enable the community to effectively contribute to the co-management of the resources. This is realized, in the communities over reliance on the forest for livelihood, and the general poverty condition in the region. Oscar M. (2013.) Previous researchers have emphasized on the need to strike a balance between, conservation and the sustainability of livelihoods in the community.

Contribution of community forest to individual household livelihoods; Wangchuk D. 2007, study reveals that community forestry management groups (CFMGs) are responsible for developing and implementing community forest management plans that entitle them to use locally valuable forest products, (Fuel wood, construction tim-

ber, mushrooms, bamboo etc.). Most recently CFMGs have been given the right to sell forest products from their community forest that are not needed locally with the goal that community forestry can contribute to rural poverty alleviation in Bhutan, in addition to sustainable forestry. It is important to note where poverty levels have been high; cases of illegal logging have been rampant. Rural poverty eradication must focus on both agriculture and forestry. Based on my research findings, easier access to forest products via Participatory Forest Management, as well as protection of forest from outside use were, listed among key reasons of joining CFA.

Many in government, while accepting the need for local involvement in reaping the benefits of forest management, remain convinced, that local communities will behave irresponsibly and abuse their right to extract timber by exceeding harvesting regulations. Consequently, the sustainable harvest of non-timber forests products has been advocated, as a way to create a clear link between forest conservation and development, Peters et al., (1989) and Shackleton, (2001). However, where management's costs to communities often exceed benefits, the long-term viability of these arrangements is, increasingly being questioned. Blombley et al, (2006).

This is in line with our findings, that 79.7% of the respondents believe that, with contribution of the CFAs to individual household livelihoods with income generating activities, there is minimal illegal logging.

Conflicts where forest conservation activities restrict resource access to communities; Forest conflicts are the major cause of increasing poverty levels and lowering of socio economic status of the community. Conflicts are intrinsic in forest livelihoods owing mainly to the perceived goal incompatibilities, scarcity of resources, political interference, overlapping policies and laws, institutional failures and poor implementation of laws among others, Ogechi G. K, (2015).

The management of protected forests in Kenya has been based, on the idea that the forested are-

as are of primary importance to a nation and that they must be protected and shielded from people living adjacent to them Ongugo et al., (2015). This is, often achieved through the strict enforcement of rules to prevent illegal activities. In some cases, open conflicts have occurred between communities and government officials which has resulted into losses of life and property Ongugo et al, (2015).

According to Ogechi G. K, (2015), the root cause of illegal activities was negative attitudes towards forest conservation because of few shared benefits. The high rate of unemployment contributed to the crime rate. This was because the source of majority of the casual jobs was from labor in PELIS plots and sawmills in the locality. The lack of alternative sources of income contributed to illegal forest activities. There was ready market for firewood especially for schools in the larger Meru County. Restrictions coming up with moratorium escalated conflicts further with the FAC.

Study findings further showed that, poverty was a major driver of illegal forest activities. In Mujujune and Nchooro CBO, women in the community engaged in firewood business. 86.5 % of the respondents believed that conflict could arise when forest conservation activities restrict resources access to communities.

Impact on CFA's effectiveness

Relationship between logging Moratorium and CFA's effectiveness

Participatory forest management is, adopted widely in many developing countries as an alternative method of managing forestry resources. Willy, 2002. PFM is increasingly, used as an approach through which to achieve the sustainability of threatened forests and conservation of biodiversity. This is possible, through a process of inclusion, equity, and decentralization of governance of the forest resources.

The government has recognized the critical role played by FAC in ensuring that tree cover in the country increases from the current 2% to the rec-

ommended 10 %. In order to appreciate the point from which the country has to move in order to achieve its targeted forest cover, the former forest management system practiced, in Kenya over the years is demotivating for local communities and one that has made them participate in the destruction of the countries forest tree resources. Forest Act 2005 is therefore a positive move for the local communities and this has already begun to act as a catalyst in the involvement in the management of the remaining forest resources. Ongugo et. al., (2007)

To ensure the above is in place, there must be a constant interaction between the CFAs and KFS. This, interaction can therefore be determined by checking the frequency of holding meetings before and after the imposition of a logging moratorium. On the effect of the effectiveness of the CFA governance 93.8% of the respondents indicated that the logging moratorium has affected CFA'S effectiveness. The impact exhibited by the frequency to holding meetings.

Having community meetings allows community members to discuss their ideas and form a basis of key aspects of the CBO such as its vision and goals, mandate and geographical coverage as well as possible intervention areas. Thomas .K. L., (2012), when members do not know the vision and mission of the organization it is difficult for them to determine whether the plans or even goals are in line to the stated vision. Having a shared understanding of the vision of the CFA, which is cemented with constant meetings, indicates therefore the effectiveness of the CFA's is thus under a threat with the logging moratorium in place. Internal management together with resource mobilization, in line with our FGD, was found to have a linear relationship with CFA effectiveness. Result further indicated that the meetings are used for; reporting (62.1 %), planning (30 %), carrying out-group activities (24.5%), and sharing information. Thus on a low frequency of meetings, the effectiveness of the CFA is doomed to fail.

Participation in tree planting and Community

Patrols in the forest upon moratorium by the FAC; as per the study findings, the level of community participation in the tree planting and patrols in the forest was not adequate upon the moratorium unlike before. In forest conservation, participation is often associated with community forestry, which refers to forest management or co management by people living close to the forest. Legal, political and cultural settings for community forestry vary widely, and the term covers a wide range of experiences and practices, community forestry is often associated with South and South East Asia, but it is also common in other regions Willy, (1997.)

Driver of CFA operations.

Revenue generated by CFA operations is used to fuel its activities; this was according to the 93.08 % of the respondents. Resource mobilization together with internal management had a linear relationship with CBO effectiveness, Thomas K.L, (2012). Abegunde, (2009), states that many CBOs have rose and fell like old empires. While some have had no significant impact since their establishment due to poor funding. This implies that, minus the revenue generated by CFA operations from PFM benefits, was curtailed by moratorium. CFAs are on a downwards trajectory. For a CBO to carry out any planned activity it must have adequate resources that are available in the right quantity and quality when required.

To be sustainable a CBO must be self-reliant in terms of mobilizing resources and have minimal reliance on external support. Internal resources are more valuable, in terms of sustainability of CBOs compared to external resources that may promote dependency, Thomas K. L, (2012). From the research, 96.54 % of the respondents agreed that, direct forest benefits in revenue collection, promote increase in revenue collection by CFA. This will go in handy in fueling the CFAs activities, in support of the above narrations.

Conclusion.

This study was conducted in line with three objectives namely; to rank forest user benefits, to

determine the impacts of logging moratorium on CFA's livelihoods and to determine the impact of logging moratorium on CFA's effectiveness. This study was conducted in two CFA's, namely Ruthumbi and Mucheene CFA's. The study extended the understanding of the PFM in Kenya under the constitution and FMCA 2016.

The study showed that, Plantation establishment through nonresident cultivation was the top ranking followed by beekeeping and harvesting of firewood. PELIS was top in Mucheene CFA, whereas beekeeping was top in Ruthumbi CFA. This supports, why high numbers of respondents was recorded in Mucheene CFA than in Ruthumbi CFA. PELIS, is a direct benefit from the forest whereas, beekeeping is an indirect benefit. That is the reason as to why, indigenous forest are vast in Ruthumbi CFA and plantation forests vast in Mucheene. This implies that, forest conservation could not be delinked from livelihood improvement by the FAC. To be able to access forest products and to be included in benefit sharing resulting from PFM, motivated community members to join CFA.

On the issue of accessing the impact on logging moratorium on CFA.s livelihood, it emerged that the majority of the respondents did not own land. This was an indicator of high chances of relying on casual labor and leasing land to support their livelihoods. Forest sector being a key enabler of the big 4 agenda via creation of value added capital, creation of employment and contribution to social development has been negatively affected by the harvesting moratorium.

The study identified that, there are no more farming plots under PELIs program and a generally restricted access to forest derived ecosystem goods and services. From the study, there is an agreement that community forest programs are great avenues towards achieving forest conservation and management. While at the same time sustaining and providing livelihoods to the community living around the forest.

The sources of income were; farming of food crops, sale of forest derived products, livestock

farming, business activities, formal employment, farming of cash crops and casual work. The major source of income, however was casual work from the once vibrant sawmills in the locality and farming activities in the PELIs plots. With moratorium, therefore a high unemployment especially among the youths, who formed the largest percentage of the casual laborers, was evident.

Local communities depended on forests for the provision of wood, fuel wood and non-wood products for their livelihoods. Regarding firewood production and consumption, a big percentage of the respondents use firewood for domestic energy needs. The moratorium has led to scarcity of firewood, thus resulting into higher prices. This implies high cost of living and extension forest degradation in the rural area to sustain huge timber and firewood demand.

On the issue of legal logging relationship with job creation, it was ascertained that respondents believes that legal logging promotes job creation in the sawmill value chain and other value chains.

The study also noted that, employment creation and direct benefits empowers CFAs economically. CFAs in the country, Perdure to improve o their roles and responsibilities in eradicating poverty, supporting livelihoods and using conservation of forest resources. The study further showed that by FAC securing forest goods and services. They do not destruct forests. Improved economic contributions from the forest sector in the future are likely to hinge on improved governance. Forests have played a major role to influence patterns of economic development, supporting livelihoods, helping structure economic change and promoting sustainable growth.

Consequently, a well-conserved forest is an indicator of an economically empowered community. Studies carried out on the management of natural resources largely focus on conservation of the resources; rather than community development, or a balance of the two. Development interventions carried out on the forest do not consider the issues of the FAC.

On matters contribution of community forests

to individual household livelihoods, it is important to note where poverty levels are high; cases of illegal logging have been rampant. Based on my research findings, easier access to forests products via PFM were listed among key reasons to join CFA. Respondents believe that with contribution of the CFA's to individual household livelihoods with income generating activities, there is minimal illegal logging. Additionally, the study established that, poverty was a major driver to illegal forest activities, in Mujujune and Nchooro CBO's. Women in community engaged in firewood business. The study revealed that conflict could arise when forest conservation activities restrict resources access to communities.

With regards to impact on CFA's effectiveness, which is cemented with constant meetings, indicates, therefore the effectiveness of the CFA's is under threat with the logging moratorium in place, internal management together with resource mobilization, in line with our FGD, was found to have a linear relationship with CFA effectiveness. Consequently, a low frequency of meetings is an indicator of doomed CFA effectiveness. On participation in tree planting and community patrols in the forest upon moratorium by the FAC, the study unveiled that, the level of community participation in the tree planting and patrols in the forest was not adequate upon the moratorium unlike before. In forest conservation, participation is often associated with community forestry, which refers to co management by the people living close to the forest.

It was revealed that, revenue generated by CFA operations is used to fuel its activities. Resource mobilization together with internal management had a linear relationship with CFA effectiveness. This thus means that, minus the revenue generated by CFA operations from PFM benefits, effectiveness was, curtailed by the moratorium. Study findings agreed that, direct forest benefits in revenue collection, promote increase in revenue collection by the CFA.

Recommendations. The study recommends that the Government should adapt a regulation mecha-

nism that safeguards logging in the extension forest of the community whenever there is an ongoing logging moratorium in the public forest.

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