

# Forest governance reforms in Eastern Africa: A comparative analysis of institutional, livelihood and forest sustainability outcomes.

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## Abstract

As forests continue to decline globally and more so in the East African region, decentralization reforms that aim to improve rural livelihoods and conserve forests by transferring management powers to local communities and governments have occurred in Ethiopia, Kenya, Tanzania and Uganda. Unlike Tanzania, where decentralization reforms have been implemented for over a decade, the reforms in Ethiopia, Kenya and Uganda are still in their infancy. As a result, there is still little empirical understanding of its impacts on livelihoods, governance and forest conditions. Limited studies carried out in the region indicate that decentralization of the forest sector in the region has taken many different forms; from partial devolution of management responsibility to more profound devolution of ownership to communities. Similarly, the outcomes from these reform efforts also vary within and between countries. Livelihood outcomes are limited in areas where CFM, JFM and PFM are practiced and positive where CBFM is practiced. The outcomes of forest conditions under CFM, JFM and PFM are also mixed within and across the countries. Some forests have shown some improvements while others are continuing to be degraded. More forests under CBFM are showing improvement than the forests under JFM, PFM or CFM. Improvement in forest condition and livelihoods under CBFM may be due to improved enforcement of forest rules by the local communities because of strong security of tenure and better benefits that accrue to the communities that have CBFM arrangements.

Keywords: *Decentralization, deforestation, livelihoods, forest health*

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## INTRODUCTION

Forest legislation and policies are usually part of national legislation and policies (e.g. on land use), the capacity of institutions to halt forest degradation and deforestation is a good indicator for the overall quality of institutions a community or country has built for sustainable natural resource management. Without a good understanding of how institutional change influences the incentives for sustainable natural resource management, development will make little if any progress. To date, important research findings have been generated on decentralization and the impact of policy reforms on forest landscapes. Despite scientific evidence there is frequent resistance to change policies. Vice versa, policymakers bemoan the inability of researchers to make their findings accessible and digestible in time for policy decisions (RAPID, 2004).

Research on forest landscapes and institutions is crucial and an indicator for sustainable development. The importance of understanding institutions and institutional change for sustainable resource management becomes evident when screening the literature on decentralization. So far about 60 developing countries are engaged in decentralizing their natural resource management policies (Ribot, 2002). Decentralization describes an array of various policies that transfer decision-making authority from a centralized government body to more local bodies. "While decentralization policies are intended to bring governance decisions closer to the people for effective, efficient, equitable, and sustainable natural resource management, many such policies have failed to achieve these goals" (Colfer and Capistrano, 2005; Meinzen-Dick and Knox, 2001; Blaser et al., 2005). The decentralization approach is too often applied as a panacea, neglecting the diversity of institutions and actors at multiple levels (Ostrom, 2001).

The main reason for decentralization is that central state control was found largely unsuccessful, costly, and financially unsustainable. Local communities, on the other hand, have been found to be more effective managers of local resources. Not only do they have greater knowledge of local resources, but are also often in a better position to monitor resource use and enforce rule compliance (Arnold, 1990; Ostrom, 1990; Bromley et al., 1992; Berkes, 1989; Gibson, Williams, and Ostrom, 2005; Meinzen-Dick and Knox, 2001; Gibson, 2001; Peters, 1994; McKean, 1992).

The policy move in Eastern Africa towards greater local control is reflected in a wide range of community-based arrangements, such as participatory, joint or collaborative forest management. Although local community institutions can be effective in governing their forest resources, weak community institutions also do not get stronger by the devolution of authority. The lacking capacity to absorb additional requirements from decentralization can be difficult and potentially dangerous (Barrow 2000).

The challenge for research and policy is therefore; to systematically identify an institutional environment which delivers benefits to local people and simultaneously sustains natural resources. To master this challenge, it is of prime importance to understand the role of property rights and the implications of certain rule arrangements for particular groups (e.g. woman, the marginalized). Dietz, Ostrom, and Stern (2003), Tucker and Ostrom (2005) and Ostrom (1990, 2005) have affirmed that no single property regime is best for sustaining local livelihoods and natural resources. Equally

significant are secure rights over the use of natural resources. Insecurity undermines the incentive to engage in long-lasting sustainable resource management practices (Schlager and Ostrom, 1992; Ostrom and Schlager, 1996).

Knowledge of the complexity and diversity of institutions in a decentralized governance situation is therefore crucial to the livelihoods, especially of rural populations in Africa and to sustainable natural resource management, which again can be a driver for overall economic development. This work and the collaborative research centers are rooted in the works of Elinor Ostrom, Nobel Prize winner in Economics 2009, and her colleagues who have developed a common methodology for the assessment of forest resources and institutions around the world (the International Forest Resources and Institutions (IFRI) Research Program) which has been founded by Prof. Elinor Ostrom. It is an international, comparative, multidisciplinary, and longitudinal research program that studies human-forest interrelationships, forest management institutions, and change processes.

This paper is part of a regional effort under the IFRI research Program to: Understand the role of institutions for forest resource and livelihood management in Eastern Africa forest landscapes. The specific objective of this paper is to determine the effectiveness of governance reforms on forest landscapes management in the region in respect to :

- Livelihood improvement of forest adjacent communities and
- Forest landscapes sustainability

### ***The State of Eastern Africa Forests and Forest Institutions: An Overview***

The forests and people of the four Eastern Africa countries of Ethiopia, Kenya, Tanzania and Uganda, are diverse but share many economic, geographic, ecological, political, and socio-cultural characteristics (Banana *et al.*, 2010). There is a wide variety of forests within the region that support a wealth of biological diversity. The major Eastern Africa forest types include tropical/subtropical forests, afro-montane forests, miombo woodlands, savannah acacia woodlands, bamboo, swamp and mangroves forests and forest plantations.

Most forests in the region can be classified as open, fragmented tropical and subtropical secondary forests (Fig 1 and table 1) under extreme pressure from encroachment and exploitation. Fragmentation of forested landscapes in the region is due to the long history of human occupancy, cultivation, and use of fire to maintain grazing lands. As a result of these human activities the forest landscapes are not only fragmented but also been reduced in size and the forest cover has declined. For example forest landscape in the region is as follows:

Forest cover of Ethiopia, including the wood lands and disturbed forests is about 11.9% (Yemshaw *et al.* 2009). This includes areas with forest cover as low as 0.5 ha and open canopy of higher than 10%.

In Kenya, forests and woodlands cover a total area of 3.5 million hectares, about 6.2% of the total land area. Modified natural woodland forests cover over 2.6 million hectares, about 74% of the entire forest estate while 704,000 hectares (20%) is

classified as primary forest. The majority of the forests occur on public land (97.8%) and 2.2% are on private land (Republic of Kenya, 2004).

Tanzania still has extensive forest cover. Forests and woodlands cover approximately a total of 33.5 million hectares, about 38 %of the total land area. There are four major forest ecosystem types, namely, miombo woodlands (22 million ha), acacia savannah woodlands (10.3 ha), coastal forests including the mangroves and the Eastern Arc and other Montane Catchment Forests (1.1 million ha). The majority of the forests (70%) occur on general lands that were formerly known as public land (FAO 2007).

Forests and woodlands cover a total of 4.9 million hectares, about 24% of the total land area in Uganda. The woodlands and savannah ecosystems alone cover over 3.9 million hectares while 651,000 of forest cover is classified as Tropical High Forest, well stocked, and 273,000 ha as Tropical High Forest, low stocked. The majority of the forests (70%) occur on private land. The remainder is held in trust by the government for the citizens of Uganda, about equally distributed between National Forestry Authority (NFA) and Uganda Wildlife Authority (UWA). The local governments manage a small area (6,000 ha) of Local Forest Reserves and other forests found outside the protected area network in the districts (Republic of Uganda 2001, 2003).

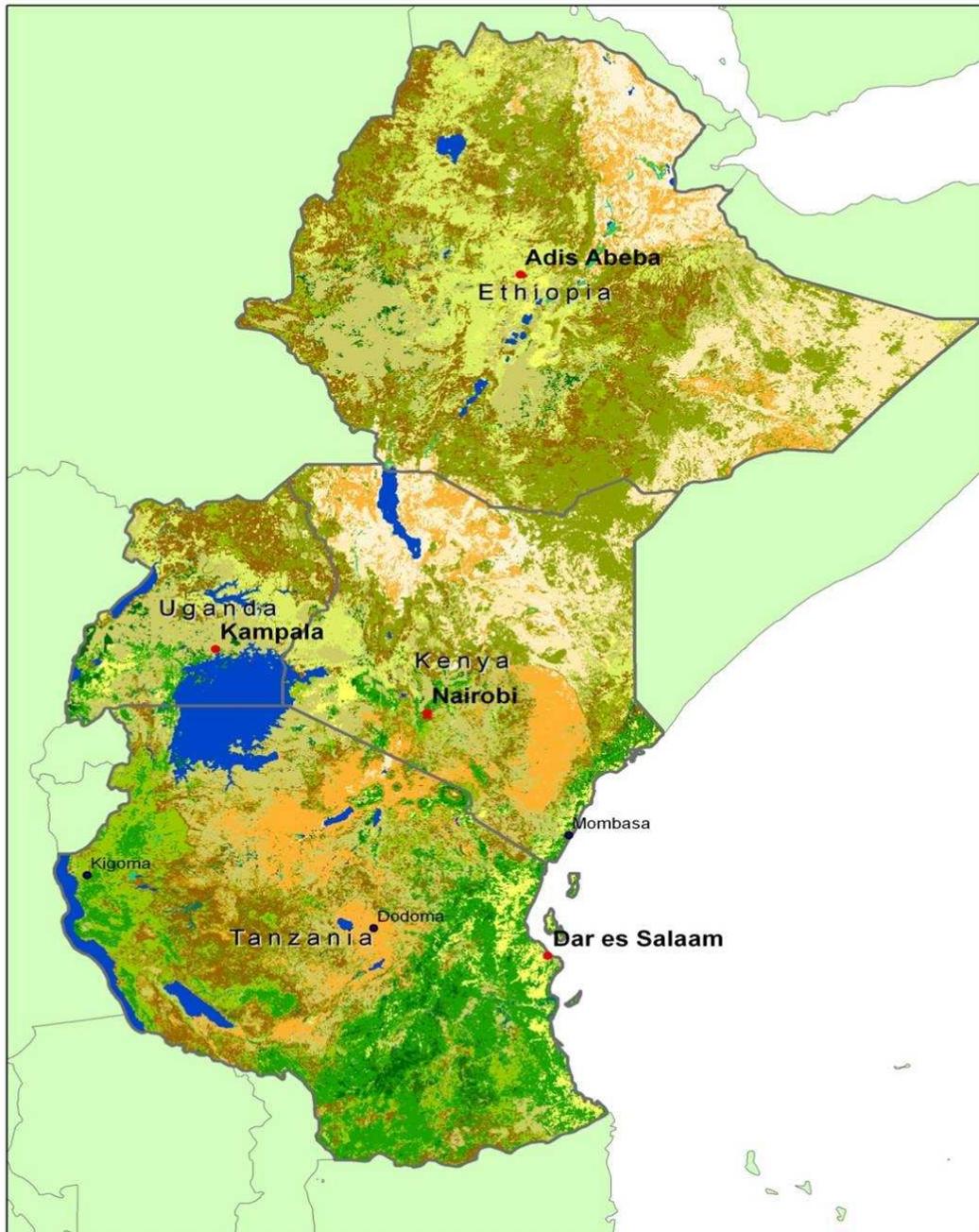


Fig 1 Forest cover in Eastern Africa

## Legend

	11 - Irrigated croplands
	14 - Rainfed croplands
	20 - Mosaic Croplands/Vegetation
	30 - Mosaic Vegetation/Croplands
	40 - Closed to open broadleaved evergreen or semi-deciduous forest
	50 - Closed broadleaved deciduous forest
	60 - Open broadleaved deciduous forest
	70 - Closed needleleaved evergreen forest
	90 - Open needleleaved deciduous or evergreen forest
	100 - Closed to open mixed broadleaved and needleleaved forest
	110 - Mosaic Forest-Shrubland/Grassland
	120 - Mosaic Grassland/Forest-Shrubland
	130 - Closed to open shrubland
	140 - Closed to open grassland
	150 - Sparse vegetation
	160 - Closed to open broadleaved forest regularly flooded (fresh-brackish water)
	170 - Closed broadleaved forest permanently flooded (saline-brackish water)
	180 - Closed to open vegetation regularly flooded
	190 - Artificial areas
	200 - Bare areas
	210 - Water bodies
	220 - Permanent snow and ice
	230 - No data

However, deforestation and food insecurity in the region are threatening the sustainability of livelihoods in forest landscapes. Whereas the global net loss of forest area went down from 8.3 million ha/year in the 1990s to 5.2 million ha/year between 2000 and 2010, and world forest area has climbed to just over 4 billion ha, African countries are still among those with the highest annual net losses, of 3.4 million ha/year. The FAO Forest Resource Assessment 2000 found that Uganda had the highest deforestation rate in the region, followed by Ethiopia, Kenya and eventually Tanzania, which had the lowest deforestation rate of -0.2 from 1990 to 2000 (table 1)

Table 1: Forest area and forest cover change in four Eastern Africa countries as compared to the world

	Tot. land area <sup>Ω</sup> 000 ha	Forest area ,000 ha			Forest area as % of tot. land area			Change in forest cover %	
	2005	2000	2005	2010 Project ion	200 0	200 5	201 0	199 0- 200 0	2000- 2005
<b>Ethiopia</b>	110,430	13,705	13,000	12,296	12	11.7	11.1	-0.8	-1.1
<b>Kenya</b>	56,915	3,582	3,522	3,467	6.3	6.2	6	-0.5	-0.3
<b>Tanzania</b>	88,359	37,318	35,257	33,428	43.9	39.9	37.8	-0.2	-1.1
<b>Uganda</b>	19,710	4,059	3,672	2,988	21	18.4	15	-2.0	-2.2
<b>Total 4 East Africa</b>	257,414	73,802	55,451	52,179	28.6	21.5	20.3	-0.9	-1.18
<b>Tot. Eastern and Southern Africa<sup>+</sup></b>	814,581	235,047	226,534	-	23	21.3	-	-0.7	-0.7
<b>Total Africa</b>	2,978,3 94	649,866	635,412		21.8	21.4		-0.8	-0.62
<b>World</b>	13,064, 000	3,988,6 10	3,952,0 25	4 billion	29.6	30.3	31	- 0.22	-0.18

Source: Forest Resource Assessment, FAO, 2000, 2005, 2010

<sup>+</sup> = Angola, Botswana, British Indian Ocean Territory, Comoros, Kenya, Lesotho, Madagascar, Malawi, Mauritius, Mayotte, Mozambique, Namibia, Réunion, Seychelles, South Africa, Swaziland, Uganda, United Republic of Tanzania, Zambia, Zimbabwe  
<sup>Ω</sup> = without inland water area

### ***Relationship between livelihoods and forestry issues in the region***

Forests play an important role for the livelihood of local communities as well as the national economies of the region. The contribution of forests for local livelihood varies from one place to another, depending on the vegetation type, kind of products extracted and the sizes of the forest. For some communities forests are the main sources of animal protein. Forests in the region also play a key role in providing food security especially in draught prone areas of the region.

More than 480 species of wild trees and shrubs have been recorded as important traditional or forest-food sources in Ethiopia (Asfaw and Tadesse 2001). Most coffee, spices and honey for local consumption and export come from forests. Coffee produced in the managed forests in Yaya Coffee Forest Biosphere Reserve area accounts for over 70% of cash income for the local community (Seyoum 2009). Nationally, coffee is the most important export commodity, earning over 30% of the foreign currency. In general,

forests in Ethiopia are the second largest sources of non-agricultural income for rural households. For example, in southwestern Ethiopia, where forest cover is high like the Bench Maji zone, 52% of annual cash income is obtained from NTFPs while in Sheka it is about 41%. In central highlands, where forest cover is low, with high population density, like the Menagesha Suba forest in West Shoa, NTFPs contributes up to 27.4 % of the annual income of households (Seyoum 2009).

The Forest Act in Kenya allows access by the local communities to harvest forest products for subsistence after paying a fee. On the other hand, the National Parks Act does not allow any harvesting of forest products from forests gazetted as National Park. Because of these differences in access rules and a reduced level of forest regeneration by KFS, there is insufficient supply of forest products in many forest adjacent communities, especially, firewood.

In addition, crop raiding by wild animals from the National Parks and Forest Reserves also cause food insecurity and loss of income to forest adjacent communities. Lack of compensation for the wide spread destruction of crops by wild animals is often a major cause of conflict between forest resource managers and the forest adjacent communities.

Tanzania still has vast unreserved forests with large timber stocks and a variety high value NTFPs such as mushrooms, honey and timber for carvings. These vast areas of forest are coming under direct community management. A strong and enabling policy and legal environment in Tanzania provides strong incentives for local participation, which, coupled with a thriving timber market, has the potential to generate significant economic benefits up to the village level.

The expanding trade in forest products in Tanzania is driven by an ever-increasing demand for timber from South Asia and NTFPs such as charcoal and honey from within the country. This increase in demand has coincided with improved road networks - such as the opening of the Mkapa Bridge over the Rufiji River that greatly increased access to interior and southern Tanzania, areas that suffer from high levels of poverty.

While the mechanisms for achieving improved livelihoods are clearly spelled out in Uganda's Forest policy and Forest Act, there is very limited capacity by the new institutions created following the implementation of the governance reforms to carry out activities tree planting that enhance the livelihoods of local communities.

Given the relative land values in Uganda (i.e. agricultural land is typically 2 to 3 times more valuable than forested land), and the high demand for agricultural land, incentives for communities to seek opportunities to establish community forests are weak (Jagger, 2010). In addition, rapid land clearing of land for agricultural expansion and also as a mechanism of establishing *de facto* property rights by forest adjacent communities have contributed to continued deforestation and forest fragmentation in Uganda (Banana *et al.*, 2010).

### **Objectives of decentralization in the region**

As forests continue to decline globally, decentralization reforms aim to improve rural livelihoods and conserve forests by transferring management powers to local communities and governments. Decentralization as a policy instrument grew in importance in the region as an option to improve the quality of forest management by giving more authority and control over resources to lower levels of government and to

local communities (Banana *et. al* 2010). These changes in approach to natural resources management have not occurred in isolation; they continue to be part of wider processes of democratization and decentralization.

The current decentralized forest governance of Ethiopia is part of the 1995 Constitution of Ethiopia. According the constitution, Ethiopia established a federal government system, in which the regional states are semi-autonomous and responsible to manage their natural resources, including forests. Specific to forest management, the latest relevant law is the Forestry Development, Conservation and Utilization Proclamation (542/2007) and subsequent regional states laws. At both federal and state levels, the policy recognizes the importance of community participation for ensuring the sustainable utilization of the country's forest resources.

The major objective for decentralizing the forest sector in Kenya was to promote the participation of the private sector, communities and other stakeholders in forest management to conserve water catchment areas, create employment, reduce poverty and ensure sustainability of the forest resource in the country. In addition, decentralization is seen as contributing towards the general capacity of local communities to make decisions on forest governance (Republic of Kenya 2007).

Faced with forest degradation problems in the late 1980s, Tanzania decentralized forest management by introducing Participatory Forest Management (PFM) program in early 1990s. Tanzania's PFM program has three major objectives - improved local livelihoods, resource governance and forest conditions (Blomley *et al.*, 2008, URT., 2002).

According to Jagger 2010, Uganda's forest sector governance reform was part of a larger government-wide restructuring laid out in the 1995 Constitution and the 1997 Local Government Act. The objectives of the restructuring were to downsize the public service; rationalize government functions; and improve the effectiveness and efficiency of public service provision (Republic of Uganda 2006).

### ***Forms of decentralization in the region***

Given the low level of forest cover in Ethiopia and its continued degradation, and the social, environmental and economic consequences of this destruction, participation of local communities in forest management (in the form of PFM) is found to be the practical approach for dealing with these problems. So, the objectives of the decentralization in Ethiopia were to ensure environmental sustainability through community based natural resource management systems.

Decentralization of the forest sector in Kenya involved only the transfer of responsibility for forest resources management from the central government forest department to a quasi-governmental parastatal –Kenya Forest service (KFS)-which is a semi-autonomous body to the main government parent ministry. The governance reforms in Kenya also institutionalized Joint Forest management (JFM) between the KFS and forest adjacent communities. Community Forest Associations (CFAs) have been formed by Forest Adjacent Communities (FAC) and other stakeholders in forest management and conservation. At present, 120 forest reserves covering 450 000 ha are being managed under Joint management agreements (Banana *et al.* 2010). These

agreements specify user rights and benefits that accrue to the CFAs (Ongugo et al. 2008).

Tanzania's forest decentralization program encompasses two approaches. The first is Joint Forest Management (JFM) where the country's Forest and Beekeeping Division and a community institution jointly manage a Government Forest Reserve and formally share revenues. Under JFM the government owns the forest and involves local communities in management activities as partners. This form of PFM take place on land reserved for forest management such as National Forest Reserves (for water catchment and biodiversity protection, production forests and mangroves) and Local Authority Forest Reserves. This arrangement is formalized by signing a Joint Management Agreement (JMA) between village representatives and government (either District Council or Ministry of Natural Resources and Tourism). The second is a Community-Based Forest Management (CBFM), where a community institution gains collective ownership and sole management authority over a village forest. In CBFM communities are the owners, substantive right holders and duty bearers of the forest management (Ylhäisi, 2003, URT, 2008). Key differences between JFM and CBFM concern the extent of participation by villagers, provisions for revenue generation and sharing, distribution of tenure rights over forests, and allowable harvesting activities (Blomley *et al.*, 2008). It is estimated that 4.1 million ha of forests (12.8% of total forest area) is being managed by local communities either under JFM and CBFM in more than 2,000 villages (URT, 2008) (table 2).

In Uganda, management of approximately 30 percent of forests was transferred to the National Forestry Authority (NFA) and the Uganda Wildlife Authority (UWA); both government parastatals while ownership of these resources were retained by the central government. On the other hand, 70% of Uganda's forest estate is located on private and customary land and their management is overseen by the district forest service under the decentralized local governments. Only 6000 ha of forest area is owned and managed as local forest reserves by the district forest services.

The governance reforms in Uganda also institutionalized Collaborative Forest management (CFM) to be practiced in both local and central government forest reserves. However, the process of making agreements with communities is slow. Only a total of 12 CFM agreements have so far been signed (Mupada 2008) covering a total of 22 000 ha of CFRs. The process is underway with 47 other communities located in 32 Forest Reserves.

**Table 2:** Forms of forest decentralization and rate of implementation in Tanzania

PFM Model	Area (ha)		No of villages		Villages with signed JMAs/Plans	
	2006	2008	2006	2008	2006	2008
JFM	1 612 246	1 777 000	719	871	149	155
CBFM	2 060 608	2 345 500	1 102	1 457	382	395

Total	3 672 854	4 122 500	1 821	2 328	531	550
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**Source:** URT (2006; 2008)

Since the mid 1990s the Ethiopia has experimented with decentralizing forest management to local communities (Yemshaw, 2007). The program was designed to shift the management of forests from the Government to the local community through PFM, with the government providing technical support and an enabling environment. Mostly the PFM scheme was driven by bilateral donor countries and NGOs. Through this initiative, many PFM projects have been established and governed by local communities in different parts of Ethiopia. Even some Regional States have enacted PFM supportive regional forest proclamations. After a decade of successful experimenting, some Regional States like Oromia has come to scale up the approach in many places. Thus it is only Tanzania that has effectively decentralized the management of large forest areas to rural villages.

### ***Forest sector governance reform process and implementation***

In Ethiopia, the decentralization and devolution of forest sector governance started in the mid 1990s through PFM scheme. Today, there are over 100,000 ha of forest area under PFM or community managed forests in Ethiopia. In areas where the PFM scheme is implemented, modalities have been developed and agreed up-on between government and local communities as to how to manage the forest resources and share the benefit that arise from the forest. Although the 2007 Federal Forest Policy and Proclamation recognize the devolution efforts of forest management in Ethiopia, it is not explicit on the different forms of decentralization. Hence, there is a need for the PFM or related scheme to influence the policy, strategy and proclamation in the country to support proper implementation of participatory natural resource management. Apparently, there is a need to revisit the policy statements and/or revise to support decentralization of forest governance in Ethiopia.

In 2005, the Kenya forest department was transformed into Kenya Forest Service – an autonomous body charged with management of forest resources. The recent Kenya

Forest Policy (Republic of Kenya 2005) allows participation of all stakeholders in forest management and conservation. Participatory forest management is a new concept in Kenya. Joint management agreements have been made with CFAs and the Kenya Forest Service (KFS). At present, 120 forest reserves covering 450 000 ha are being managed under this arrangement. (Ongugo et al. 2008, Banana *et al.*2010). The process of making JFM agreements between CFAs and KFS is undertaken in four main phases;

- i. Community mobilization, sensitization and participation,
- ii. Training of a local planning team and assessment of the resource
- iii. Preparation of the PFM plan
- iv. Legitimization and ratification of the plan

Tanzania's forest sector governance reform is part of a larger government-wide restructuring laid out earlier in the Villages Act of 1975 that was promulgated to strengthen decentralization by establishing Village Councils charged with participatory

development by the local people in the provision of social services (health, education, roads, water) (Ngwilizi, 2001; Pacheco, 2004). Under the Tanzanian Forest Act of 2002 (URT 2002), Participatory Forest Management (PFM) was institutionalized. JFM takes place on land reserved for forest management such as National Forest Reserves (for water catchment and biodiversity protection, production forests and mangroves) and Local Authority Forest Reserves. This arrangement is formalized by signing a Joint Management Agreement (JMA) between village representatives and government (either District Council or the Ministry of Natural Resources and Tourism).

CBFM takes place in forests on surveyed village land as per the Village Land Act No. 5 of 1999 and managed by the Village Council. Under CBFM, the full ownership and management responsibility is vested on villagers for an area within their jurisdiction declared by village government as a Village Land Forest Reserve and registered by the District Council.

Governance reforms were carried out in Uganda under the Forest Sector Umbrella Programme (FSUP) initiated in 1999. The objectives of FSUP were two-fold: to create a positive, effective and sustainable policy and institutional environment for the forest sector in Uganda and, through this, to increase economic and environmental benefits from forests and trees, particularly for the poor and vulnerable (Republic of Uganda 2004). The reform process included review of the forest sector; the development of the Uganda Forest Policy (Republic of Uganda 2001); the National Forest Plan (Republic of Uganda 2002); and the National Forestry and Tree Planting Act (Republic of Uganda 2003), abolition of the centralized Forestry Department and the creation of the decentralized District Forestry Service and the National Forestry Authority-a profit making government parastatal. In addition the Forestry Sector Support Department (FSSD) was created. The FSSD, is part of the Ministry of Water, Lands and Environment is responsible for policy and regulation in the forestry sector and supervises the activities of both the NFA and DFS.

## **METHODS OF THE STUDY**

The paper has used data collected under IFRI research programme covering a period of about seventeen years (Uganda); thirteen years (Kenya); twelve years (Tanzania); and, two years (Ethiopia). In addition data from Sustainable Agriculture and Natural Resource Management (SANREM) project in Uganda and Kenya supported by extensive review of literature from earlier work buy individual scientists from the region have been used in the research. For livelihoods and peoples' participation in management of the forest resource, SANREM data was used for Kenya and Uganda and literature review was undertaken for Tanzania and Ethiopia. From IFRI data, human disturbance, access and use of forests, forest biomass and forest structure were obtained; while from SANREM household data including income from forest, time spent working in the forest and perception on forest condition were calculated. For IFRI research methodology refers to Ostrom and Wertime (1994); For SANREM method, refer to Jaggard (2009). Each country has its own research sites and case studies. However, the centre for training, capacity building and knowledge exchange is located in Ethiopia at its new research network.

For Social and forest data, descriptive statistics was carried out for the various visits before and after decentralization in every country to determine changes and effects on the forests and well as the community livelihoods.

## RESULTS AND DISCUSSION

### ***Livelihood outcomes***

Heavy dependency of local communities on forest resources for subsistence and income, and conversion of forest land to agriculture by forest adjacent communities have continued as was the case before the governance reforms.

In Ethiopia, households living in and nearby forest areas earn a significant part of their income from forests. For instance, forests in Bale Mountains contribute about 34% and 53% of the per capita household income and per capital household cash income, respectively (Yemiru et al., 2010). PFM is reported to increase the household income, and hence has contributed to the livelihood improvements of the participant community members. In Bale, for example, Feto (2009) reported that members of the forest group earn 21% of their total income as compared to 6% by the non-members, which is equivalent to US\$400 and US\$100 respectively. This, however, shows the inequity due to PFM arrangement, which includes some and excludes others as members of the forest user group.

Kenya's implementation of the governance reforms is in its early stages, Joint forest management established in a few forests in the country seems to indicate that the reforms have paved way for the interaction of multiple interests, including the development of community based organizations and associations for forest management (Banana *et al.*, 2009). Much of the involvement of these organizations to date has been oriented towards activities aiming to deflect pressure away from forest resources, including tree planting, regeneration of degraded forest patches and ecotourism. These alternative sources of livelihoods are expected to increase income generation outside the forests for both household and community levels.

Community based organizations have assumed great importance since the new Forest Act vests management responsibility and benefits with already organized local actors. For example, the government has provided funds to CFAs for a variety of projects such as Plantation Establishment and Livelihood Improvement Schemes. Many CFAs have also benefited from other forest stakeholders such as National Museum of Kenya (NMK), Kenya Wildlife Service (KWS), NGOs and Kenya Forestry Research Institute (KEFRI) that have committed funds for various types of house hold income enhancement schemes. As a result, community members were attracted to participate in CFAs because of the increased benefits they expected to receive from their participation in forest conservation (Ongugo *et al.* 2010). Secondly, even though local communities can not engage in the harvesting of forest products for income since the forest resource has not yet regenerated sufficiently, they are engaged in non-consumptive income generating enterprises. This has served to develop their entrepreneurial capacities.

There is limited empirical data in Tanzania regarding the degree to which decentralization of forests to communities is generating local economic returns at community or household level. For example, Lund (2007) reported that fourteen villages were assisted to reserve small- to medium-sized areas of Miombo Woodlands averaging

2600ha in size, on village land in Iringa district in the late 1990s. In 2002, an assessment of village forest incomes showed annual revenues of around US\$540, but rose to around \$720 by 2005.

Tanzania still has vast areas of unreserved woodlands with significant timber values that could be managed by village governments, with the potential to generate revenue and improve rural livelihoods. It is estimated that up to 20 million hectares of unreserved forests exist that could be brought into CBFM arrangements (Akida and Blomley, 2006). No doubt, forest resources on village land, available to local communities through CBFM provide investment opportunity with the potential to generate sustainable flows of revenue in areas where other forms of economically productive activities may be severely limited.

However, findings from households living adjacent to the Local Forest Reserve and ungazetted forests managed by the District Forest services (i.e. democratic decentralization to local government) suggest that the reform had limited impact on household livelihoods (Jagger, 2010). For example, controlling for household and village level characteristics, Jagger (2010) found that the net effect of the reform on households living adjacent to the Local Forest Reserve and ungazetted forests was relatively small. The transition from the Forestry Department to the District Forestry Services appears to have had a negligible effect on average household income from forests.

Decomposition by income quartile revealed that income from the poorest households declined by \$10 USD (a decline of 10.7%); whereas income from forests for wealthy households increased an average of \$30 USD (an increase of 11.6%). These findings indicate that the transition to local government control over forest management has had a limited effect on local people's livelihoods.

Findings from households living adjacent to the Central Forest Reserve managed by the National Forestry Authority suggest that the reform had a significant impact on household livelihoods. For example, in the Budongo forest site the average increase in household forest income is \$53 USD. The differential effect of the reform on forest income for the poorest and wealthiest households is striking; households in the lowest income quartile have lost an average of \$15 USD per household, while households in the highest income quartile are estimated to have increased forest income by \$162 USD per year. The share of income from forests has increased 6.4 percent for the average household. Regression results decomposed by income quartile indicate that the share of income from forests has declined for the poorest households (15 percent) and increased for the wealthiest households (25 percent). The findings indicate that the forest sector reform in the Budongo forest site is strongly favoring the wealthiest households.

### ***Impact of decentralised forest management on forest resources in the region***

Decentralization of authority over forests to local levels of government and to communities assumes that these entities will be able to design institutions in-line with the needs and desires of local forest users (Blair, 2000; Conyers, 2006; Rondinelli, 2006) and this is expected to lead to better forest management and thus improved forest condition.

In Ethiopia, deforestation and forest degradation continued even after forest governance decentralization. However, there are some evidences of improvements in forests under PFM arrangement which show increase in seedlings and sapling density. This can partly be attributed to restrictions on the number of users of forest blocks. The changes in forest quality have yet to be measured quantitatively. The newly initiated

IFRI research and establishment of Ethiopian CRC is expected to generate relevant findings.

Decentralization reforms in Kenya are still in their infancy and findings from four of the IFRI Kenya sites namely Got Ramogi, Arabuko Sokoke, Eburu, and Aberdares forests which have undergone some level of decentralizations show a mixture of results. According to Ongugo *et. al* (2010), formation of CFAs has not changed the nature of interaction between forest authorities and local communities and between the local communities and the forest resources. Illegal logging, encroachment on forest land for farming and charcoal burning still continues. The majority of forest adjacent households ranks the condition of these decentralized forests as somewhat sparse and feels that the level of conservation is still too lax and if harvesting continues at the same rate, the sustainability of these forests is endangered (fig 2).

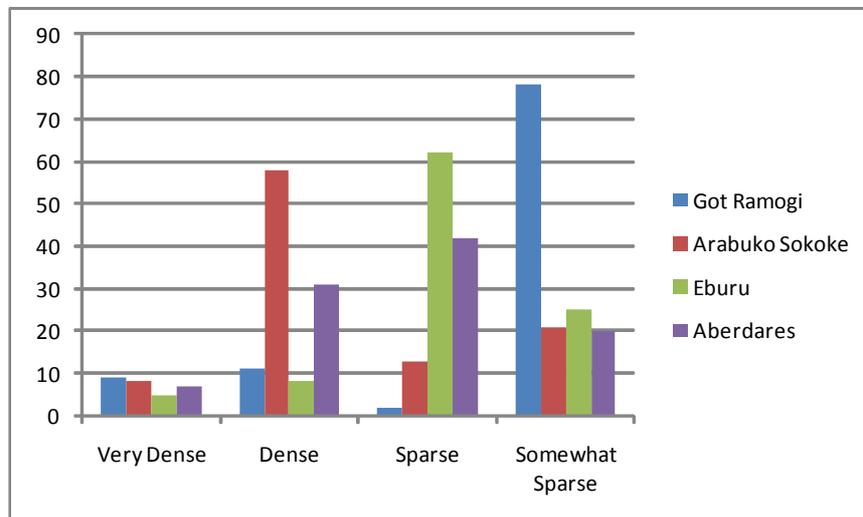


Fig 2: Forest user's perception on the forest condition

Given the profound institutional changes that are required to implement the new forest act, and the time it requires for longstanding patterns of behavior to be transformed, it is not surprising that the nature of interaction between forest authorities and local communities in respect to the forest resources in Kenya have not changed since the new Forest Act was adopted three years ago.

Few studies in Tanzania relate decentralised management to forest condition based on tree density, basal area and volume. Luoga *et al.*, 2006 observed an increase in tree density, basal area and volume and a decline in level of human disturbance in both miombo woodland and semi-evergreen forest strata following the implementation of the JFM programmes (table 3 a). The decline in harvesting levels and the resulting increase in stocking can be attributed to reduced fire occurrences, controlled grazing and illegal harvesting of trees as a result of effective protection under JFM strategy. On the other hand, Kijazi, (2007) found a decrease in basal area and volume but an increase in tree density in Amani Nature Reserve under JFM in a montane high forest (table 3 b).

**Table 3 a:** Tree stocking parameters by forest stratum in years 2001 and 2004 in Handeni Hill Forest Reserve, Tanzania

Forest stratum	Stocking parameter	Years 2001	2004	t-value	p-Value	Sig
Miombo woodland	N	355±144	817±182	2.145	0.014	**
	G	11.21±3.38	12.7±1.55	2.068	0.210	NS
	V	108.99±44.6	111.34±14.6	2.085	0.504	NS
Semi-evergreen	N	342±103	1083±184	2.119	0.001	**
	G	10.94±4.11	15.06±2.06	2.048	0.172	NS
	V	125.24±64.9	153.52±27.14	2.052	0.513	NS

Where, N = Number of stems per hectare (N/ha), G = Basal area (m<sup>2</sup>/ha), V = Volume (m<sup>3</sup>/ha), \*\* = Significance at 0.05 level, and NS = Non-Significance at 0.05 level

**Table 3 b: Comparison of stocking parameters in 2001 and 2005 in Mlesha VFMA, Amani Nature Reserve, Tanzania**

Stocking	Years		t-value	p-values	Sig
	2001	2005			
N	1762 ± 225	3043 ± 360	3.09	0.004	**
G	46.118 ± 7.583	42.096 ± 4.973	0.41	0.688	NS
V	720.493 ± 135.849	530.337 ± 87.883	1.07	0.292	NS

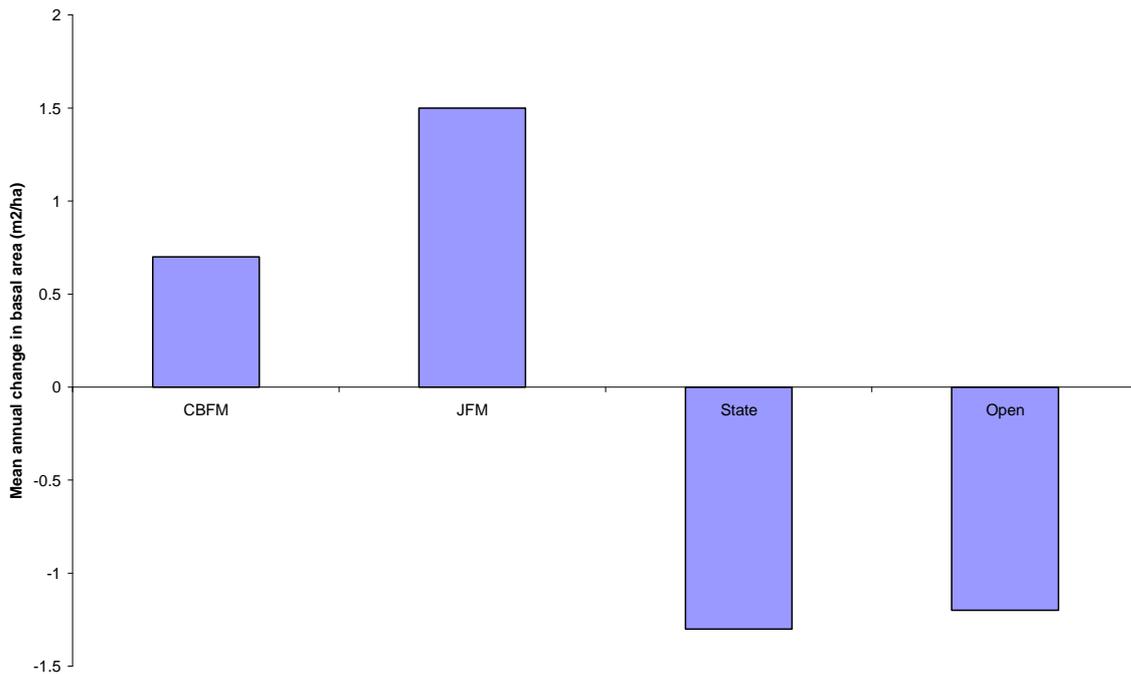
N = Number of stems per hectare (N/ha), G = Basal area (m<sup>2</sup>/ha), V = Volume (m<sup>3</sup>/ha), SE = Standard error; \*\* = Significance at 0.05 level, and NS = Non-Significance at 0.05 level

The study also reported that there was tree cutting going on in the forest and therefore the forest experienced negative human impact. From field observation, fresh cuts of trees of 10-20 cm DBH were observed likely for poles while old big diameter trees experienced gravity fall and are being used as firewood by the surrounding community. Similar trend of decreased stocks was reported by Kajembe *et al.* (2004) at Kwizu Forest Reserve where JFM strategy was operating in a montane forest. This shows institutional failure and low compliancy of rules in these areas because of high population pressure and increased market integration as opposed to Handeni hill case study as shown in Table 2.

Zahabu (2008) assessed the impact of participatory forest management on carbon sequestration in Tanzania and concluded that, both CBFM and JFM resulted into

significant reductions in degradation and increase in carbon sequestration. However his conclusions are based on two years data. Chingonikaya (2010) reported significant improvement of stocks and livelihood in Mgori Forest Reserve which is under CBFM.

Similarly, in a study that compared growth characteristics of 13 forest areas under varying management regimes, forest conditions appeared to be better in those forests managed either wholly or jointly by communities as evidenced by higher basal area, mean annual increments and stems per hectare (Bromley *et al.* 2008 and 2009), ( fig 3).



Fig

3: Mean annual change in basal area in thirteen forests under different management ownership regimes

Source: Bromley *et.al* 2008

Success in Community-Based Forest Management in Tanzania is perhaps related to the resurgence of interest in grass-roots democracy, public participation and local level planning and secure forestland tenure (Chingonikaya, 2010).

Forest quality in Uganda as indicated by stem density and biomass also significantly declined across all tenure regimes. Forest surveys undertaken in 1994, 2000 and 2008 from 27 forest sites with a total of 762 plots showed a decline in sapling and tree population but an increase in an increase in ground cover (Fig.4 ) and table 4.

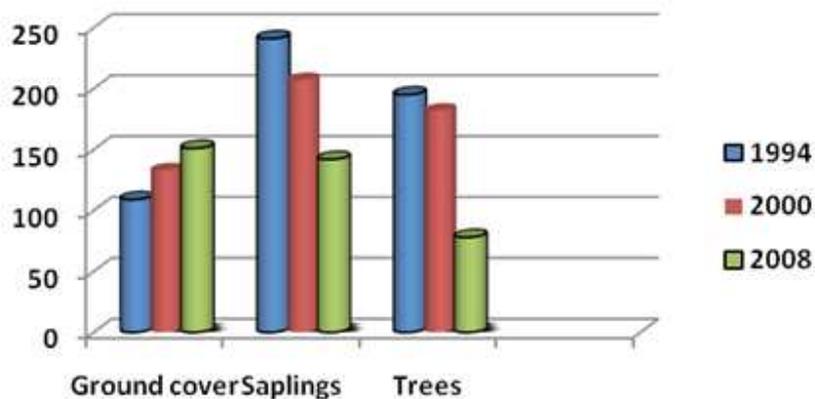


Fig. 4: Change in ground cover, sapling and stem density in Uganda's forests between 1994 and 2008

Table 4: Decline in total biomass

Forest tenure	Rate of annual decline (%)	Min (tons ha <sup>-1</sup> yr <sup>-1</sup> .)	Max (tons ha <sup>-1</sup> yr <sup>-1</sup> .)
Private forests and local FRs overseen by District Forest service	8.5	-33.5	-1.7
Central government forest reserves	7.6	-35.7	3.9
FRs with collaborative Forest management			
• Mpanga	+2.0 (3.9 tons ha <sup>-1</sup> yr <sup>-1</sup> .)		
• Malabigambo	+5.9 (3.6 tons ha <sup>-1</sup> yr <sup>-1</sup> .)		
• Butto-Buvuma	3.9 (4.4 tons ha <sup>-1</sup> yr <sup>-1</sup> .)		

The average rate of annual biomass decline change for the government forest reserves managed by the National Forest Authority was of 7.6%. This level of resource decline indicates continued high degradation rates following the governance reforms in the government Forest Reserves.

The rate of degradation and deforestation was significantly higher in the local government forest reserves and private forests that are overseen by the district forest services. The average rate of annual decline within these two tenure regimes was 8.5%. We observe extremes in biomass changes across these tenure regimes ranging from annual reductions of 1.7 to 33.5 tons ha<sup>-1</sup>yr<sup>-1</sup> (table 3). This indicated that important variations occur within tenure type. For example, this may suggest that some private

owners and some local governments continue to conserve their forests despite the high demand for timber and commercial fuel wood (Namaalwa et al., 2001).

Forest reserves under the management of NFA in collaboration with local communities under CFM exhibited positive annual increments and Butto-Buvuma Forest reserves in this period. For example, Butto-Buvuma FR exhibited an average annual reduction of 3.9 % reduction ( $4.4 \text{ tons ha}^{-1}\text{yr}^{-1}$ ), which is evidently much lower than the mean value for FRs ( $- 9.2 \text{ tons ha}^{-1}\text{yr}^{-1}$ ) until 2008, when this forest was leased to private investors and transformed into a pine and eucalyptus plantation. On the other hand, Mpanga and Malabigambo exhibited an average annual increase in biomass of 2% and 5.9% ( $3.9$  and  $3.6 \text{ tons ha}^{-1}\text{yr}^{-1}$ ) respectively. The improvement in forest conditions in these forests could be attributed to the ongoing conservation efforts devoted to these reserves by several government and non-government bodies and the local communities thus resulting in improved law enforcement, better relationship between the communities and forest managers both leading to a reduction in illegal access and utilization and enhancement of ecological integrity.

### ***Challenges of implementation of decentralized governance in the region***

Decentralization is a complex and dynamic process that evolves over time and need adjusting and adapting to changing contexts. As the forest sector intersects with many other sectors of the economy, decentralization in other related policy areas can have significant influence.

Conversely, decentralization in the forest sector may give the local community a lever with which to address their interests in other areas. Thus many challenges of implementation of decentralized governance of forest resources in region lie outside the forestry sector. For example the weak governance structures, political interference, pervasive economic incentives that favour deforestation, and conflicting policies within the natural resources sector make it difficult to effectively implement governance reforms in the region (Banana *et al.*, 2010). Challenges that lie within the forest sectors of the region include:

- Limited financial and human capacity at local government level, Revenues collected from forest product taxation and permits are not ploughed back into local governments or communities to pay for or reward community managers involved in patrolling and forest improvement activities. This has led to increase in forest-related corruption that renders management of decentralize natural resources very ineffective.
- Limited incentives for local governments, local communities and individual farmers to participate in sustainable forest management since most of the high-value forests resources were never decentralized but instead they are managed by the central governments.
- Lack of knowledge among local communities of the opportunities that CFM, JFM or CBFM provides and
- Emphasis by the regional governments on conservation and restoration instead of sustainable utilization.
- Lack of transparency in benefit-sharing between forest adjacent communities, local elites and local governments. Groups that have traditional rights and those who live near the forest must be given due consideration so that none of them is

excluded from the benefit sharing. Community participation has been criticised in the region that it does not lead to development as it mostly benefits elites (Meshack *et al.*, 2006). Others argued that there is a gap between rhetoric and practice (e.g. Brockington, 2007).

Ethiopia has several policy provisions that call for people participation in forest management but there are inadequate proclamations, guidelines and strategies to implement these policy provisions. A strong institutional framework is needed to include PFM in the action plans of regional governments. This would help institutionalize the implementing PFM in the regular government programs instead of being limited to donor projects. The objective of most PFM projects is to reduce poverty consequently; the conservation aspect of these projects is given a very low profile. There is a need to develop non extractive products such payment environmental services (particularly water protection, ecotourism, climate change and biodiversity), based on secure property rights in order to provide the revenue support for the provision of those services and as a more equitable way for society to exert influence over which national and global values are delivered.

Since decentralization reforms in Kenya are still in their infancy, the extent of involvement of the community members and individuals is still very low and their direct participation is sometimes hijacked by the local politicians and the elite members of the community (elite capture). In addition, the roles and responsibility between the community, the central and devolved government units and mechanisms for sharing resources have not yet been worked out in the subsidiary legislation. As a result, the quality of citizen engagement is still generally poor. Cultural practices in major forest areas in Kenya exclude women and the youth in major decision making processes at community level (Obonyo *et al.*, 2009). Exclusion has also been noted in the management of CFAs, where the majority of those who control such associations are usually of male gender with minimal participation by women and the youth (Mbuvi *et al.*, 2005).

Lastly, the Land use policy of Kenya until recently did not recognize communal ownership of land and yet majority of forests are found on land owned by local communities. The lack of recognition of communal land tenure has greatly contributed to the poor functioning of the CFAs and the continued degradation of forests in many parts of Kenya.

Although the Tanzanian central government has effectively decentralized the management of large forest areas to rural villages, many local authorities in Tanzania do not want to decentralize large forest areas to villages. The transfer of poorly managed forests to mandated local institutions with clear roles and responsibilities often undermine some of the corrupt networks that perpetuate illegal logging, leading to declining benefit flows to those higher up the chain (Blomley *et al.*, 2008). In such cases, district staff and councilors find that they face a clear conflict of interest – over the continued benefits they enjoy from illegal harvesting in unreserved forests vis-à-vis their responsibilities to assist communities in securing tenure and forest management rights under CBFM (Persha and Blomley, in press). This conflict of interest often manifests itself through the slowing down (and often halting) of key stages in the legal process of CBFM establishment, such as district council approval of bylaws and management plans

(Mustalahti, 2007). The process formalizing JFM and CBFM has been very slow due to lack of resources to carry out cadastral surveys and land use planning in villages and general land.

In Tanzania a lot has been written about success stories in community based forest management such Duru Haitemba and Mgori and Suledo forest reserves (Willy and Mbaya, 2001; Lissu and von Mitzlaff, 2007) while little has been written about cases which are not successful is because many analysts prefer to report successful forest management ventures than failures (Acheson, 2006).

Uganda's decentralization reforms are beset with certain internal contradictions. For example, the leasing of forest patches for plantation development at the expense of forest access by local communities. This policy marginalizes the poor households and favours large scale investors. Instead of leasing forests only to private investors, a given percentage should be leased to farmers for tree planting and management while retaining a portion of the forest reserve in its natural state so that farmers can continue to harvest forest products.

Unlike Tanzania, where vast areas of unreserved woodlands with significant timber values have the potential to be managed by village governments, only small degraded forests amounting to 6000 ha have been transferred to the Local Government Authorities in Uganda. Although Uganda's decentralization reforms are beset with internal contradictions, it has a lot of lessons to offer to Ethiopia Kenya and Tanzania. For example, because the District Councils which are the official managers of local forests are subject to an electoral process, there is scope for enforcing some political accountability through electoral rewards or punishment for their performance (Banana *et al.*, 2009).

Second, local actors have an assortment of options for seeking redress over grievances and/or advisory support for their activities through the various tiers of the local government hierarchy. These elements are fundamental for enhancing community interest in sustainable forest management.

Table 5 summarizes the findings of this study.

Table 5: Decentralization outcomes in the Region; A Summary

Country	Form of Decentralization	Security of tenure	Livelihood outcomes	Forest Condition	Challenges
Ethiopia	Deconcentration to communities (PFM)	-Weak for communities	-Limited	-Improving	-PFM is not institutionalized -No guidelines on decentralized management of forest resources More emphasis on exploitation rather than conservation
Kenya	Deconcentration to -Local governments -Semi autonomous bodies -PFM	-Weak for communities under PFM -Strong for local governments and semi autonomous bodies	-Limited for PFM	-Mixed results under PFM	-Weak local governance structures -Underfunding to support preparation of management agreements -Complicated process in forming CFAs
Tanzania	Devolution to communities (CBFM) Deconcentration to communities ( JFM)	-Weak for communities under JFM -Strong for communities under CBFM	-Positive for CBFM -Limited for JFM	-Improving under CBFM -Mixed results under JFM	-Underfunding for demarcation and registration of village forests -Resistance by district councils to transfer forest land to village governments
Uganda	Deconcentration to -Local governments -Semi-autonomous bodies -CFM	-Weak for communities -Strong for local governments and semi-autonomous bodies	-Limited under CFM and local forest reserves - Negative where CFR were leased to private investors	-Mixed under CFM	-Under-financing (FSSD and DFS) -Privatization of some CFRs -Limited and degraded forest land decentralized -Complicated process in forming CFMs

## CONCLUSIONS

Decentralization of the forest sector in the region has taken many different forms; from partial devolution of management responsibility to more profound devolution of ownership to communities. The outcomes from these reform efforts vary within and

between countries. Livelihood outcomes are limited in areas where CFM, JFM and PFM are practiced and positive where CBFM is practiced. The limitation in the improvement of livelihoods may be attributed to the land tenure conditions whereby communities do not have strong security of tenure.

Similarly, the outcomes of forest conditions under CFM, JFM and PFM are also mixed within and across the countries. Some forests have shown some improvements while others are continuing to be degraded. Most forests under CBFM are showing improvement. Again, this may be due to improved enforcement of forest rules by the local communities because of strong security of tenure.

### **POLICY RECOMMENDATIONS**

A strong and enabling policy and legal environment provides strong incentives for local participation, which, coupled with a thriving timber market, has the potential to generate significant economic benefits at the very lowest levels of government.

Commitment by governments to the decentralization process through improved funding, capacity building at all levels and completely devolving forest landscapes to communities should be improved.

The process of formation of local institutions and preparation of management agreements should be made simple and less costly on time and funds.

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