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# Has the evolution process of forestry policies in Uganda promoted deforestation?

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## SUMMARY

The dynamics in livelihood needs of people at the fringes of tropical forests have increased the stakes and management challenges of biodiversity worldwide. Since the adoption of the Convention on Biological Diversity in Rio de Janeiro in 1992, the importance of biodiversity has been emphasized in several international agreements. However, the incentives to implement such agreements in poor countries are lacking. The present study characterised the determinants of deforestation, and forest management practices within Mabira Forest Reserve (MFR) in central Uganda. This was done within the context of the evolution of the policy and legal frameworks of Uganda. Literature on MFR as well as the policy and legal framework on forests and related resources was reviewed. The results show that evolution of the forest policy was characterised by limited input from key stakeholders. Moreover, there has been political interference and limited sharing of benefits amid failure to harmonize the forestry policy with relevant policies of related sectors. Consequently, deforestation has continued. To address this anomaly, we encourage the involvement of all key stakeholders including local people in designing management guidelines and sharing benefits from forests as an incentive for participation to promote sustainable forest growth. This is crucial for the success of forest restoration programmes in the tropics.

Keywords: protected areas, local participation, forest degradation, local livelihoods

## Le processus d'évolution des politiques forestières en Uganda a-t-il favorisé la déforestation?

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Les dynamiques des besoins des populations vivant à l'orée des forêts tropicales ont accru les défis et les enjeux de gestion de la biodiversité de par le monde. Depuis l'adoption de la Convention sur la diversité biologique à Rio de Janeiro en 1992, l'importance de la biodiversité a été soulignée dans plusieurs accords internationaux. Toutefois, les encouragements manquent pour mettre en œuvre de tels accords dans les pays pauvres. Cette étude caractérise les facteurs déterminant la déforestation et les pratiques de gestion dans la réserve forestière de Mabira (MFR) au centre de l'Uganda. Cette étude a été réalisée dans un contexte d'évolution de la politique et des cadres légaux en Uganda. La littérature concernant la MFR, ainsi que le cadre légal et politique concernant les forêts et les ressources liées à celles-ci a été étudiée. Les résultats montrent que l'évolution de la politique forestière est caractérisée par des investissements limités de la part des acteurs clés. De plus, une interférence politique et un partage limité des bénéfices se sont ajoutés à l'échec d'harmonisation de la politique forestière aux politiques pertinentes des secteurs lui étant liés. En conséquence, la déforestation s'est poursuivie. Pour résoudre cette anomalie, nous encourageons une participation de tous les acteurs clés, populations locales incluses, pour concevoir des plans de gestion et partager les bénéfices issus des forêts, ceci afin d'encourager une participation porteuse d'une croissance forestière durable. Cela est crucial pour le succès des programmes de restauration forestière en zone tropicale.

## ¿Ha fomentado la deforestación el proceso de evolución de las políticas forestales en Uganda?

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Las dinámicas en las necesidades de medios de vida de las personas en los márgenes de los bosques tropicales han aumentado los riesgos y los desafíos de manejo de la biodiversidad en todo el mundo. Desde la adopción del Convenio sobre la Diversidad Biológica en Río de Janeiro en 1992, la importancia de la biodiversidad se ha enfatizado en varios acuerdos internacionales. Sin embargo, faltan incentivos para implementar estos acuerdos en los países pobres. El presente estudio caracterizó los factores determinantes de la deforestación y las prácticas de manejo forestal en la Reserva Forestal Mabira (RFM), en el centro de Uganda. Fue realizado en el contexto de la evolución de

los marcos legales y políticos de Uganda. Se revisó literatura sobre la RFM, y sobre el marco político y legal que regula los bosques y otros recursos relacionados. Los resultados muestran que la evolución de la política forestal estuvo caracterizada por los limitados aportes de los actores clave. Además, ha habido interferencia política y un reparto limitado de beneficios, en medio del fracaso por armonizar la política forestal con las políticas relevantes de los sectores relacionados. En consecuencia, la deforestación ha continuado. Para resolver esta anomalía, motivamos a todos los actores clave a participar, incluyendo a la población local, en el diseño de lineamientos para la gestión y el reparto de los beneficios de los bosques, como un incentivo para la participación, con el fin de promover el crecimiento sostenible del bosque. Esto es crucial para el éxito de los programas de restauración forestal en los trópicos.

## INTRODUCTION

Interest in the management of forests received increased Worldwide attention at the inception of the forestry department of the Food and Agricultural Organization (FAO) in 1945. However, deforestation in the tropics became a widely recognised problem by 1980 when protecting natural forests became a politically controversial issue (SIFI 2010). Currently, international forest policy issues are addressed in several global treaties and conventions on natural resource management as well as climate change. Further, the need to preserve ecosystems and species as well as reducing the causes of deforestation are, for example, among the issues articulated in the Brundtland Commission's report of 1987 and subsequently the 1992 UN Conference on Environment and Development in Rio de Janeiro (FAO 1999). After the conference, several global and regional efforts to implement the Agenda 21 were initiated (Luukkanena and Kaiyo-Ojaab 2010). Internationally, forest policy has therefore evolved over two decades to protect the fragile forest ecosystems on earth.

The 1992 Convention on Climate Change (CCC) for example, focused on stabilizing greenhouse gas concentrations in the atmosphere whereas the 1994 International Tropical Timber Agreement's main purpose was to ensure sustainable forest management. On the other hand, the 1992 Convention of Biological Diversity (CBD) targeted the forest biological diversity, marine and the coastal area ecosystems, while the 1973 Convention on International Trade in Endangered Species of Wild Fauna, and Flora (CITES) prioritized protecting the endangered plant and animal resources from the negative effects of trade. The Kyoto Protocol of 1997 is among the other relevant legal frameworks that make explicit reference to land use change and forestry (FAO 1999). Throughout the 1990's therefore, a complex global policy and legal framework was developed to prevent forest loss and protect a wide range of biodiversity and livelihoods.

Unfortunately, changes in the forest cover have occurred all over the world with tropical regions being most devastated (FAO 2001, FAO 2012). By 1990, up to 1 150 million ha of tropical rain forest were degraded, and close to 2.3 million ha of forest was lost through habitat destruction, fragmentation, logging and fires (Mayaux *et al.* 2005). Between 2 000 and 2 010 annual estimates of forest vegetation decline was at 15.2 million ha in the tropics and 16.1 million ha worldwide (FAO 2012). Rates of Tropical rain forest loss are clearly high due to increase in global food demands amid dwindling fertility

of agricultural land (Heywood and Watson 1995, Steyaer and Jiggins 2007). This has increased the stakes and challenges to management of biodiversity. The existence of immense economic pressures to exploit the nutrient rich forest soils for commercial agriculture has been in the limelight for decades. Moreover, the negative impact of agriculture on biodiversity extends beyond newly opened agricultural fields to adjacent landscapes including protected areas (Baudron *et al.* 2009). The landless farmers or shifting cultivators account for more forest destruction in the tropics (Myers 1992).

Since Rio de Janeiro 1992, the importance of biodiversity especially in protected areas, has been emphasized. However, the incentives to implement the international commitments are inadequate especially in poor countries. In Uganda, several forestry and related resources policies have been formulated to counter forest and biodiversity loss in protected areas, but these have not been very effective. The decrease in forest cover amid improved forest restoration measures implies that the policy interventions are not addressing the real problem (Myers 1992). The case of Mabira Forest in central Uganda, which is the focus of this paper, is a good example to illustrate this problem given the current tensions between central government and the local peasant farmers who depend on this forest for their livelihoods. If the disharmony between the politicians and the local people living near or within the forest is not resolved, then deforestation rather than restoration is more likely (Obua *et al.* 2010).

Before political interference intensified in the 1970s and the introduction of commercial agriculture in Uganda, (late 1890's), a considerable part (up to 10.8 million ha) of Uganda land surface was covered by forest vegetation (Kayanja and Byarugaba, 2001, Langdale-Brown *et al.* 1964). Within approximately 100 years however, the forest cover reduced by approximately 45% (MWLE 2001) from 10.8 million ha in 1898 to about 4.9 million ha by 2003 (NBS 2003). The Mabira forest has faced a similar trend. Moreover, the loss is currently thought to be even higher given the rapidly growing human population near protected areas in Uganda and political interference in management of such areas. Generally, studies (e.g. Carr 2004, Carr *et al.* 2005, Laurence 1999) in the tropics have attributed deforestation to population explosion and the search for fertile agricultural land. Some reports (e.g. Bazaara 2003, Hamilton 1987, Kamugisha 1993, MWLE 2001) in Uganda however, have attributed the trend of declining forest cover to the absence of a favourable policy environment, but without showing a clear link. It is generally believed that the policies are good but the problem is with the implementation.

A large body of existing literature holds tropical forest loss on the effectiveness or ineffectiveness of restrictions on access to forest resources (e.g. Robinson and Lokina 2011, Obua *et al.* 2010). There is however limited research on the relationship between the evolution of forest policy and deforestation or restoration. In view of this, the policy related factors determining deforestation and forest management practices are generally, not well understood. Moreover, policy related strategies for dissuading the local people from degrading forests and enhancing their participation in restoration are unclear. The importance of policy and legislation has, nonetheless been highlighted, as critical for the design of future projects aimed, for example, at climate change mitigation and adaptation (Poiani *et al.* 2011). The evolution process, however, has received very limited attention.

To address this gap in literature, this study examined the factors determining forest and allied tree-based system degradation and the choice of management practices. The study characterised i) the determinants (socio-cultural and political or ecological drivers) of deforestation, ii) management practices in relation to changes in the forest policy and iii) legislative frameworks over time (about 80 years). The relationship with related natural resource policies e.g. in agriculture, tourism and wetlands management (emphasised by Kalame *et al.* 2009) is also addressed. The need for considering socio-cultural drivers and political differences in the management of forests and trees is crucial (Galabuzi *et al.* 2014, Kalame *et al.* 2009). Various socio-cultural drivers (e.g. participation of local

people in policy development and their access rights to forest resources), political drivers (e.g. changes in governments), and ecological forces (e.g. impact of invasive alien plant species) affect forest use based on needs of different stakeholders. Any integrated conservation strategy should consider as a minimum, the empowerment of local people who live closest to the resource (Galabuzi *et al.* 2014, Burgess 1994).

The humid tropical forests deserve special attention because demographic, economic, political and social changes continue to exert considerable pressure on them (Carr *et al.* 2005, Geist and Lambin 2002). The specific questions and corresponding variables assessed during the study are summarised in Table 1.

In Uganda, for example, during the colonial, (1894 to 1961) and post independence governments (1962 to 1995), a precedent for managing forest and related resources was set whereby policies or guidelines were developed through a non consultative process (Turyahabwe and Banana 2008). There was limited input from stakeholders especially those living adjacent to protected areas (Turyahabwe 2006). This perhaps alienated the local people with negative consequences on the forest. The consultative process has changed in rhetoric but not clearly seen in implementation.

Characterising factors that cause deforestation is perceived to be important for devising ways of managing such forest and generally strategies for forest policy development or implementation. Understanding the factors that cause deforestation could be helpful for initiating restoration and sustainability in

TABLE 1 Questions used to guide the review and corresponding variables assessed during the investigation of drivers of the degradation of Mabira Forest Reserve

Question	Qualities	Aspects assessed
1) Is the policy review process regular and adequate?	Stakeholder level of participation	<ul style="list-style-type: none"> <li>• The number of and duration between forest policy reviews</li> </ul>
2) Is there a clear relationship between the forest policy and other policies of related sectors such as agriculture, wetlands, tourism and infrastructure development?	Links between related natural resource sectors	<ul style="list-style-type: none"> <li>• Evidence of harmonization of formulation and implementation of different policies</li> </ul>
3) Does the forest policy spell out the roles of local people as key stakeholders clearly?	Stakeholder level of participation	<ul style="list-style-type: none"> <li>• Statement on roles of local people</li> </ul>
4) Are the forest management guidelines in the policies clear?	Clarity of guidelines	<ul style="list-style-type: none"> <li>• Nature of guidelines and clarity</li> </ul>
5) Are the guidelines favorable to forest dependent people e.g. do they stipulate benefit sharing with local people?	Stakeholders Rights	<ul style="list-style-type: none"> <li>• Benefits already transferred to local people</li> <li>• Benefits the local people want</li> <li>• Benefits that will maintain the forest</li> </ul>
6) Do the local people abide by the guidelines and legislation?	Roles of stakeholders in forest degradation	<ul style="list-style-type: none"> <li>• Perceptions of forest degradation by local people</li> <li>• Responsibility for degradation</li> </ul>
7) Do the local people practice or promote restoration practices?	Roles of stakeholders in forest restoration	<ul style="list-style-type: none"> <li>• Perceptions of forest restoration by local people</li> <li>• Evidence of involvement of local people in restoration activities</li> <li>• Practiced forest restoration strategies</li> <li>• Actions that could restore the forests</li> </ul>
8) Would the degradation of forest be minimised if the policy formulation process was participatory through all stages?	Stakeholder participation	<ul style="list-style-type: none"> <li>• Willingness of local people to abide by the policy</li> <li>• Strategy for improving policy implementation</li> </ul>

degraded forest sites. The Mabira Forest Reserve provided an ideal site for this study because of the current political pressure it faces and its history of degradation. These aspects of pressure on the forest are further explained under the study area.

STUDY AREA AND METHODS

The study area

The study was carried out in and around Mabira Forest Reserve (MFR) located between (0° 24' - 0° 35' N and 32° 52' - 33° 07' E), (Figure 1).

The forest covers 306 km<sup>2</sup> (Baranga 2007) divided into three management zones (i.e. strict nature reserve, production area and buffer or recreation area). Before the forest was gazetted in 1932, villages (human settlements) were enclosed within the forest as enclaves. Up to 3 000 families lived in the enclaves and by 1988, about 25% of the forest had been degraded. Since then, the population has increased in the village enclaves from about 50 000 people in 1995 to 120 000 by 2002 (NFA 2006) putting more pressure on the forest. Since the 2002 national census, no further population

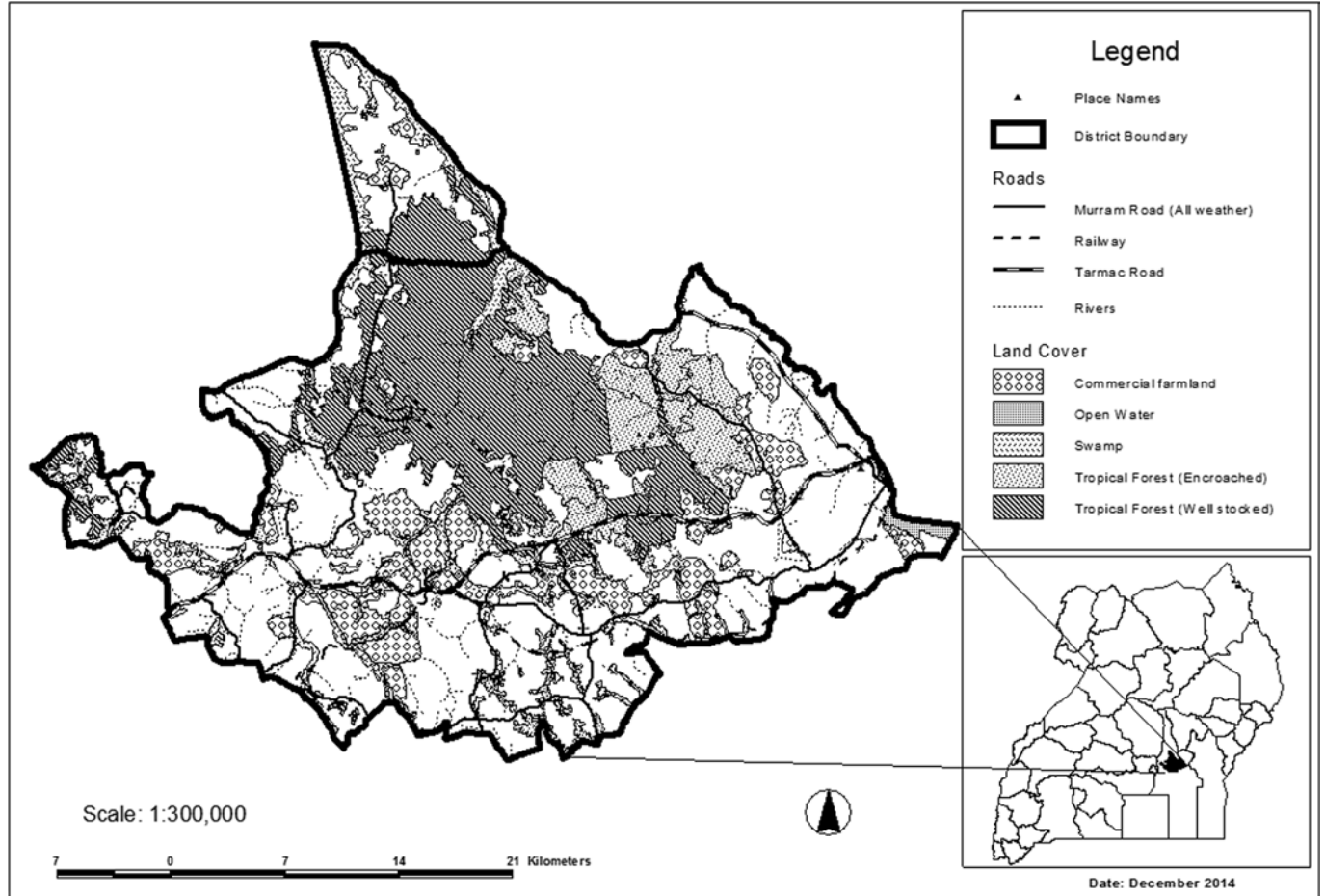
census was carried out until 2014. The people residing in the current 27 villages within the enclaves of MFR are mainly of Bantu sub-ethnic groups with the Baganda and Basoga dominating. The local people are mainly subsistence farmers cultivating annual and perennial crops. The others work in the sugarcane or tea estates surrounding the forest. The estates occur as extensive monoculture plantations established by the Sugar Corporations or Tea companies. The estates occupy a substantial portion of the land outside the reserve and the owners are always keen to convert more gazetted forestland into agricultural land.

Mabira Forest Reserve is one of the “victims” of deforestation in Uganda, and is now considered a secondary forest (Baranga 2007). Local people have utilised the forest for about 80 years since its gazettement (Nature Uganda 2004) but unless strategies are designed to enlist their support in its protection, degradation will continue.

Methods

We reviewed literature on Mabira Forest Reserve including the management plans and research reports. In addition, past and current policies, bills and legislation on forests

FIGURE 1 Map of Mabira Forest Reserve in Uganda showing location of degraded and un-encroached forest areas



and related natural resources spanning over 80 years were reviewed. Information on previous and current management regimes, use patterns, as well as the status of forest and allied tree based systems were analysed. The information was compared with data from 12 key informant interviews as well as observations of the research team in the field. Comparing the information obtained from various sources using different methods is useful for checking the missing links and clarifying unclear issues (Martin 2004).

Due to the qualitative nature of data required, the study also employed an interactive and inductive approach to characterise determinants of forests and allied tree systems loss around MFR. A total of 12 village meetings and 15 focus group discussions was conducted using pre-generated questions and new questions added after debriefings (Sibelet *et al.* 2013). Subsequently, a new list of questions generated with the local people during the village meetings, was used to develop a checklist to guide the discussions with the key informants.

Qualitative data were obtained using key informant interviews following Cheng *et al.* (2011). The key informants were mainly identified from the local government institutions. These included the District Forestry Services (DFS) of local governments, the Forest Sector Support Department (FSSD), National Forestry Authority (NFA), National Environment Management Authority (NEMA) and the Wetlands Inspection Division (WID) now Wetland Management Department and former Uganda Forestry Department (UFD). The participants from these institutions had either been involved in natural resource policy evolution and implementation or witnessed the transformations the forestry sector in Uganda has undergone. All these institutions play various roles with regard to management of MFR.

The District Forestry Services play several roles: (i) prepare the District Forestry Development Plans (DFDP), (ii) collecting revenue from taxes and licences on forestry activities, (iii) providing or supporting delivery of extension services, (iv) developing and enforcing bye-laws governing the management of forests and trees in the district, and (v) mobilising funds, encouraging tree planting as well as protection of the vulnerable areas including watersheds in their specified areas of jurisdiction.

The National Forestry Authority on the other hand, is mandated to manage the country's Central Forest Reserves (CFRs). The FSSD has the overall responsibility for formulation and implementation of national forestry policies, standards and legislation and overseeing the implementation of forest management principles by the DFS and NFA. The Wetland Management Department and NEMA are empowered to protect the wetlands and environment respectively. The former UFD staff managed Uganda's forest sector between 1932 and 2004. The activities of the UFD became more conspicuous especially between 1986 to 2004 when the central government started to re-organize and fund the forest sector.

The key informants provided information on management operations and practices carried out in the forest sector between 1986 to present times of government involvement in forest management in Uganda including the transformation

and the evolution process of the sector. Information about the policy environment during the period the key informant served in the organisation was analysed and compared with the information obtained from literature. Based on the purpose of our investigation, we are confident that our findings are a reflection of the evolution of policy and legal issues relevant to the management of forest resources in Uganda and Mabira Forest Reserve in particular.

## RESULTS AND DISCUSSION

### Forestry policy, legal framework and political environment

#### *The Policy Framework (1929–1947)*

Ugandan forests are prone to degradation because of the high demand for forest resources (Kayanja and Byarugaba 2001). The first forestry policy of Uganda was developed in 1929 (Grove 1998, Pitman 1934). Under this policy, the first forest reserves such as MFR, were gazetted in 1932. The main purpose of gazetting forest reserves was to protect the forest resources including timber tree species from exploitative harvesting, water catchment areas from encroachment by shifting cultivators and the generation of financial resources (Forest Department 1955). The forestry policies have undergone several revisions influencing utilization and management of forests and allied tree based systems (Table 2).

Approximately 20 years before the 1929 forest policy came into force, Mabira forest covered about 1 240 065 ha (Schaab *et al.* 2010). From 1932, considerable changes occurred in Uganda's forestry sector also affecting MFR. The policy environment promoted the protection of water catchments (in view of the threat of agriculture) but enhanced the degradation of forests such as MFR. The reason is that other natural resource policies and legal frameworks overlooked the importance of forests. This policy was in force for over 15 years without renewal. The guidelines stipulated for policy reviews were inadequate, catering for only limited input from the local people. Hence, the policy could not be properly implemented because the local people had needs and cultural values deviant from the objectives of management, which had been focussed on timber production and protection of water catchment. The policy denied the local people a communally shared responsibility of managing forests, by shifting ownership to the colonial government. Prior to the involvement of the colonial government, management of forestry resources was mainly based on traditional values and norms (e.g. the sacred forests and trees) in different parts of the country (Government of Uganda 1999a, Nabanoga 2005, Namaalwa *et al.* 2009), but this could not be provided for in the policy.

#### *The Policy Framework (1948–1969)*

The 1929 forest policy was revised for the first time in 1948 emphasising protection of forests, climate regulation and other non-extractive values. The policy provided avenues for forestry extension with a view of sensitising the people about the value of forests, and the need to establish forest

TABLE 2 Characteristics of past and existing legal frameworks and implications for natural resource management around Mabira Forest Reserve

Period	Policy and Laws	Objective/Characteristics	Prevailing Environment
1929 – 1947	The Uganda Forestry Policy of 1929	<ul style="list-style-type: none"> <li>• Protect the forest resources from exploitative harvesting</li> <li>• Protect water catchment areas from encroachment by shifting cultivators</li> <li>• Generate revenue for the government</li> </ul>	<ul style="list-style-type: none"> <li>• Traditional law and management system getting phased out</li> <li>• Local people needs and cultural values suppressed by management objectives</li> <li>• Local people denied a communally shared responsibility of managing forests</li> </ul>
	The 1948 Forestry Policy	<ul style="list-style-type: none"> <li>• To reserve in perpetuity, for the benefit of the present inhabitants of Uganda and of posterity, sufficient land to maintain climatic conditions suitable for agriculture</li> <li>• To preserve water supplies for agricultural, industrial and domestic purposes and maintain soil stability</li> <li>• To foster by education and propaganda, a real understanding among the people of Uganda of the value of forests to them and their descendants</li> <li>• To encourage and assist the practice of sound forestry by local authorities and private enterprise; and to educate selected Africans in technical forestry.</li> </ul>	<ul style="list-style-type: none"> <li>• More awareness was created on the importance of forests</li> <li>• Traditional farming practices such as shifting cultivation were disrupted.</li> <li>• Sustainable agricultural and soil management techniques were introduced</li> </ul>
1948 – 1969	The 1966 Constitution of Uganda	<ul style="list-style-type: none"> <li>• Mostly silent about forestry and other natural resource issues</li> <li>• No clear guidelines on land use and ownership.</li> <li>• Limited technical human resource to run the country including management of forestry resources</li> </ul>	<ul style="list-style-type: none"> <li>• The silence on natural resource management created a loophole for forest degradation</li> <li>• Increase in commercial exploitation of forest (e.g. logging of valuable timber species)</li> <li>• Commercial tea and sugarcane estates introduced and competing for forest land</li> </ul>
	The 1970 Forestry Policy	<ul style="list-style-type: none"> <li>• Retained the main objectives of the 1948 Forestry Policy</li> <li>• The policy included provisions for efficient conversion of wood and wood products.</li> </ul>	<ul style="list-style-type: none"> <li>• During this period, Uganda faced political turmoil that affected wildlife in protected and unprotected areas adversely</li> <li>• Permitted the use of land categorised as ‘free land’ encouraged peasant farmers to clear, cultivate and settle in the forest</li> </ul>
1970-1986	The 1975 Land Reform Decree	<ul style="list-style-type: none"> <li>• Focussed on economic and social development by increasing agricultural production</li> </ul>	<ul style="list-style-type: none"> <li>• Accelerated forest degradation</li> <li>• Increased settlement in the forest</li> <li>• Immigrations and extensive cultivation large commercial plantations of tea and sugarcane</li> </ul>
	Forestry Policy 1988	<ul style="list-style-type: none"> <li>• To promote forestry outside Forest Reserves</li> <li>• To balance protection and utilisation in Forest Reserves</li> <li>• Streamlining of roles stakeholders in forestry</li> </ul>	<ul style="list-style-type: none"> <li>• Encouraged forest establishment on private land based on exotic species</li> <li>• Inadequate incentive to protect natural forest on private land</li> <li>• Role of central government still dominant in forest management</li> </ul>
1987-1990	The 1994 government order	<ul style="list-style-type: none"> <li>• Stop exploitation of selected forest resources (e.g. timber)</li> </ul>	<ul style="list-style-type: none"> <li>• Created a discontent because logging was licensed in some Forest Reserves and not others</li> </ul>
	The Constitution of Uganda 1995	<ul style="list-style-type: none"> <li>• To promote public awareness in management of natural resources</li> <li>• To promoted utilization of natural resources to achieve economic development</li> <li>• To recognise the importance of energy policies for utilisation and conservation</li> </ul>	<ul style="list-style-type: none"> <li>• Failed to promote forest protection</li> <li>• Conflicts over use and management of specific resources escalated</li> </ul>
1991-2000			

TABLE 2 (Continued)

The 1995 National Policy for Conservation and Management of Wetland Resources	<ul style="list-style-type: none"> <li>• Establish principles for sustainable wetland resource utilization</li> <li>• Stop practices which reduce wet land productivity</li> <li>• Maintain the biodiversity, functions and values of wetlands</li> <li>• Integrate wetland management in planning and decision making</li> <li>• Integration of wetland management in other natural resource policies</li> </ul>	<ul style="list-style-type: none"> <li>• Increase in commercial activities within wetlands</li> </ul>
The 1995 National Environment Statute	<ul style="list-style-type: none"> <li>• Conserve biodiversity and promote good environmental practice.</li> <li>• Sensitize public on environmental issues</li> <li>• Promote environmental auditing and environmental impact assessment.</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of guidance on collaboration between different natural resource sectors created competition and conflict</li> <li>• Some EIAs probably used as tools to justify implementation of projects allowing forest loss.</li> </ul>
The 1998 Land Act	<ul style="list-style-type: none"> <li>• Provided security of land tenure</li> <li>• Provide a framework for land management under decentralisation</li> <li>• Ensure proper planning and co-ordination in urban development</li> <li>• Conserve natural resources through sustainable land use and development</li> <li>• Provide for governments to acquire land</li> </ul>	<ul style="list-style-type: none"> <li>• Preceded the land use policy and so no clear guidelines were in place for implementation</li> <li>• Resulted in land wrangles in some enclaves of Mabira forest reserve</li> <li>• Development had minimal consultations with stakeholders</li> </ul>
The 2001 Uganda Forestry Policy	<ul style="list-style-type: none"> <li>• Halt degradation of forests in the country and promote restoration</li> <li>• Meet international obligations e.g. Convention on Biological Diversity (CBD, Agenda 21)</li> <li>• Identify and coordinate roles and interests of stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>• Promoted livelihood improvements as a core requirement for sustainable forest management</li> </ul>
The National Forestry and Tree Planting Act 2003	<ul style="list-style-type: none"> <li>• Guided and augmented tree planting and ownership</li> <li>• Promoting livelihood improvement based on forest/tree resources</li> <li>• Encourage public participation in forest management</li> </ul>	<ul style="list-style-type: none"> <li>• Expansion of commercial agriculture</li> <li>• Extensive pine and Eucalyptus planting in the area</li> <li>• Core part of Mabira still under natural forest, interrupted by enclaves</li> <li>• Forest patches degraded while the eastern third of the forest is covered by plantation of exotics</li> </ul>
The 2003 Uganda Tourism Policy	<ul style="list-style-type: none"> <li>• Promote tourism for poverty reduction using natural resource base</li> </ul>	<ul style="list-style-type: none"> <li>• Stakeholders in the tourism industry not clearly identified</li> <li>• Emphasised infrastructure development causing forest loss</li> <li>• Underestimated role of local communities in protection of forests hence limited participation in management</li> </ul>
The 2007 National Land Use Policy	<ul style="list-style-type: none"> <li>• Achieve sustainable and equitable socio-economic development through optimal land management and utilization.</li> <li>• Develop adequately planned land use systems that provide for orderly and sustainable urbanization, industrial and infrastructural development</li> <li>• Adopt improved agriculture and other land use systems Reverse and alleviate adverse environmental effects at local, national, regional and global scales</li> <li>• Update and harmonize land use related policies and laws, and strengthen institutional capacity</li> </ul>	<ul style="list-style-type: none"> <li>• Conflicting interests between socio-economic and natural resource management presented a challenge</li> <li>• Strategies for striking a balance between agricultural land, human settlement, infrastructural development and forest land still unclear</li> <li>• Forestry is always compromised to achieve short term needs and as a result, a steadily reducing forest vegetation cover is realised</li> </ul>

plantations. The policy was right (i.e. there was a need for plantations to sustain timber supply) but unfortunately, accelerated deforestation as some natural forests were converted to plantations of exotic tree species, while logging intensified in others. Silvicultural practices such as refinement to favour high value timber species were encouraged. Hence, there was a focus on maximizing government revenue from the forests. In addition, some forest reserves were illegally cleared for agriculture (Kamugisha 1993). The policy seems to have given relatively little prominence to the role of local people in conservation thereby fuelling deforestation and degradation. Consequently, the natural forest extent particularly Mabira forest reduced.

Several laws that are relevant to the management of forests came into force between 1948 and 1969. These include the Town and Country Planning Act of 1964; the Survey Act of 1964; and the Registration of Titles Act 1964. Implementation of these was resisted by registered forest owners citing expropriation of their property rights, and limited awareness of the provisions in the laws. There was inadequate institutional capacity for implementation. Absence of a land use policy contributed to these challenges.

The 1966 Constitution of Uganda came into force thereafter, but was mostly silent about the general use of forest and related resources (Government of Uganda 1966). Management of central reserves such as Mabira was, however, relatively easier because employees of the Forest Department had gained experience and had better control over illegal activities. Unfortunately, during this period, the FD staff had inadequate knowledge of wildlife management. Moreover reviewing the constitution to provide for capacity building in the relevant sectors was not a government's priority because the focus in the preceding had been on the struggle for independence. The constitution was therefore, not reviewed for over 20 years, leading to a gradual loss of control over natural resources.

#### **The Policy Framework (1970–1986)**

The 1948 forest policy was renewed in 1970, retaining the main objectives of the earlier policy but making provisions for efficient conversion of wood and wood products. During this period, (particularly the late 1970's and early 1980's) Uganda faced a political turmoil that affected wildlife in protected and unprotected areas adversely (Government of Uganda 2003a). In the late 1970s, for example, the army considered the forests to be a security risk or hiding place for rebels. Consequently, a presidential decree was issued in 1975 permitting the use of land categorised as 'free land' to allow farmers clear, cultivate and settle in the forest. This encouraged many people to settle in or harvest natural resources from the forest. Mabira forest being close to Kampala, the Capital City of Uganda and the country's main market for wood products, suffered heavy degradation over this period particularly in the eastern part of the reserve.

Settlement on public land (from 1964–1979), and insecurity (during the guerrilla war of the National Resistance Army and other rebel groups, from 1980 to 1986), accelerated deforestation in Mabira and other forest reserves in Uganda.

The government appears to have deliberately shifted focus from management of forest reserves to transforming them into other land-uses. The government was overthrown in 1986 giving rise to several changes in the management of the national resources sector.

#### **The Policy Framework (1987–2001)**

In 1987, there was a policy change towards rehabilitating the forest estate and evicting encroachers. The policy was revised in 1988 aiming at: i) providing more robust guidelines and strategies for the management of forests outside protected areas, ii) attaining a balance between conservation and production in protected areas; and iii) streamlining the roles of different stakeholders in forest management (Government of Uganda 1988). Among the objectives, the policy included the conservation of biodiversity, as well as active protection of forests (for research and tourism, promotion of agro forestry, and environmentally sustainable forestry). Generally, up to 20% of the forest cover in Uganda was zoned into the strict nature reserves, 30% buffer zone, with 'limited' harvesting, and 50% for management and sustainable utilization (Grove 1998).

The roles of stakeholders were spelt out, but government dominated management partly resulting in an unfair sharing of benefits from the forest. Some authors (e.g. Burgess 1994, Galabuzi *et al.* 2014) proposed the elevation of indigenous persons into advisory positions in committees managing protected areas to enlist their involvement. The 1988 policy, nonetheless, contained some guidelines and strategies for managing forests outside protected areas, and balancing conservation with production in the protected areas but these were limited (MWLE 2001). The Policy also lacked linkages with other relevant sector policies. There was confusion coupled with a struggle over management between local people and government causing the degradation of MFR just like other protected areas (Government of Uganda 1988). Consequently, the Mabira forest vegetation cover significantly reduced by more than half of its original coverage (i.e., from 1 240 065ha to approximately 496 026 ha) Schaab *et al.* (2010). It is paradoxical that this magnitude of loss occurred when Uganda seemingly had a good forest policy.

In 1994 there was a general ban by government on harvesting from forest reserves but residents neighbouring the reserves had access and use of some forest resources (e.g., firewood, forest foods, medicinal plants, poles and water) for subsistence purposes (Bahati *et al.* 2008, Baranga 2007, Namaalwa *et al.* 2009). However, there arose a contradiction that, licensed logging was allowed in some forest reserves including MFR. The local people thus interpreted this as a deliberate effort to deny them rights over timber harvesting, hence illegal activities in the forest reserves escalated.

In 1995, however, community involvement in the management of MFR started. Through their Local Councils, a few people from the community were employed in jobs relating to Eco-tourism. In 1997, the Mabira Forest Advisory Committee, composed of two representatives from each village, was formed. This was hopefully an opportunity for the local people to benefit from the forest but the jobs were too few to

include every member in the community. At the fringes of tropical forests benefits from natural forests are more appreciated at the household than community level. For MFR, degradation instead of restoration was promoted.

In 1998, Government took a political decision to reform the forestry sector, even though stakeholders had been discussing the subject since 1995. After the government decision, a sector review, followed by participatory processes, resulted in a new Forest Policy in 2001 and National Forestry and Tree Planting Act in 2003. These instruments provided for the institutionalisation of responsibilities for managing forests to four principal actors: the NFA, UWA, the local governments and private forest owners. The responsibilities of the Local Governments (LGs) and private forest owners have been vested in the District Forest Services, the forest management arm of the LGs.

In 1999, the Mabira Forest Advisory committee was broadened to cover the seven parishes around Mabira Forest Reserve to ensure more involvement of local people in the communities in management, but was disbanded when the NFA took over management of forests from Uganda Forest Department by 2003. This sent a bad signal to the communities who interpreted it as termination of their involvement in forest management.

From 1988–2000 forceful evictions to rid MFR of encroachers were carried out (Government of Uganda 1999b). The areas from which people were evicted were planted with tree species such as *Maesopsis eminii* Engl. and *Terminalia* spp. In some areas however, the planting of *Broussonetia papyrifera* (L.) Vent, an invasive species, was surprisingly carried out near the forest reserve (Galabuzi *et al.* 2014). The planting of *B. papyrifera* (Paper Mulberry) was promoted as an alternative source of firewood to the forest wood biomass by the Sugar Corporation of Uganda Limited (SCOUL) and tea companies in the area. There is also a belief that the paper mulberry was originally planted for paper production. Further, there were efforts to reduce pressure on the forest, by encouraging people to plant trees on private land. The local people were encouraged to plant *Calliandra* sp. and *Albizia* spp. on their land outside the forest (or on farm using agroforestry practices). Boundaries were opened and inventories carried out to assess the status of forest. The Forest Department initiated nursery gardens of *M. eminii* and *Cordia millenii* Bak in the adjacent villages to encourage plantation establishment, and embarked on Environmental Education targeting local communities and schools. In 2004 the NFA, embarked on a large project to restock the forest by planting introduced species and promoting less utilized species or adopting exotic species (e.g. *Terminalia* spp., *Eucalyptus* spp., *Pinus* spp., *Grevillea* sp. and *Araucaria* spp.) which are easier to manage.

Other initiatives included allocating parts of the reserve to people to plant *Eucalyptus* species. Some stakeholders, for example, Mabira Forest Integrated Community Organisation (MAFICO) attempted to domesticate *Acalypha neptunica* Muell. Arg. (a shrub used to make the sticks for roasting meat within MFR) and promoted it as a live fence. Some of these strategies (e.g. promotion of planting indigenous species on farms, local capacity building in soil fertility management,

increasing local benefits from the forest and collaborative forests management) yielded positive results, partly because there was evidence of more willingness to involve the local people (Galabuzi *et al.* 2014).

During this period, there were several related natural resource policies, statutes and laws put in place as highlighted in Table 2, but these were formulated without a clear vision of the future state of land resources. For example, the 1998 Land Act preceding the 2007 Land Use Policy (Government of Uganda 1995 a, 1995b, 1995c, 1998) surprised everyone especially the managers of PAs. Logically, it should have been the policy to precede the law. In this case, it was the reverse. The law authorised establishment of additional institutions such as the National Environment Management Authority (NEMA) and the Wetlands Inspection Department (WID) to manage the environment and wetland resources respectively.

Confusion was created partly by the various policies and legislations. There were several contradictions, which needed to be harmonised to create a clear and favourable implementation environment. The division of power, between relevant ministries (e.g. Lands, Water and Environment and Trade, Tourism and Industry) was not clear. This led to conflicts between institutions (e.g. NFA, WID and UWA). Examples from Burkina Faso and Ghana (Kalame *et al.* 2009) show similar problems where Forestry officials for example, encouraged farmers to plant and maintain trees on their farmlands while the Agricultural officials encouraged them to cut down the same trees to give way for cultivation. The tropical forests and related resources continued to be degraded under these circumstances.

### **The Policy Framework (2000–2008)**

The Uganda Forestry Policy of 2001 was formulated as a strategy to restore the declining forest cover and related resources (Government of Uganda 2001). This policy formulation process was more participatory than earlier policies. The goal was to build ‘an integrated forest sector that activates sustainable increases in economic, social and environmental benefits for all the people of Uganda. The new policy institutionalized community forestry and addressed the management of forests on private land.

Within two years of development of the 2001 Forestry Policy, the National Forestry and Tree planting Act (2003) was enacted (Government of Uganda 2003b). This was timely to enforce implementation of the new policy. Within this policy and legislative framework, the local people living adjacent to the forest reserves were accorded clear roles through Collaborative Forest Management (CFM). CFM is a mutually beneficial arrangement in which a local forest user group and responsible body share roles, responsibilities and benefits in a reserve or part of it (Obua *et al.* 2010). Collaboration between stakeholders in the management of central forest reserves is thus encouraged and promoted. Based on these laws and guidelines, from 2006 agreements have been signed between NFA and CFM committees around Mabira and other Forest Reserves (e.g. Budongo and Sango Bay), where CFM activities were piloted.

For over 10 years (from initiation of the CFM idea to signing agreements), local people had been unofficially involved

in management of the forest reserve, and deforestation was perhaps encouraged because the local people were not officially held accountable for the forest resources. During this time, harvesting of resources ranging from timber to non-timber forest products (e.g. medicinal herbs, mushrooms and fruits) by the local peasants faced a “tragedy of the commons” scenario (Hardin 1986). The farmers cleared more forest-land to grow crops while the timber traders salvaged more valuable tree species to critical levels. The politicians on the other hand encouraged more encroachment on the forest in the advent of settling the landless. Consequently, the human population in and around MFR increased.

Discussions with members of the forest user groups involved in CFM and managers of MFR however, revealed that the roles and responsibilities are shared among the stakeholders but the distribution of benefits is non-existent or unfair. Only when the basic needs and rights of a community are met, will the community attain the basic security and capacity to cope with risks and uncertainties, to promote forest conservation (Walpole 2014). Besides the basic household needs of energy, medicine, clothing, shelter and food (MWLE 2001), local people continuously search for valuable products to earn money (Kayanja and Byarugaba 2001). Exploitative activities are consequently common in and around MFR. The exploitation is two way including the legal and illegal extraction on the side of government and the local people respectively. Despite being mostly illegal, charcoal production is one of Uganda’s most important economic activities (Kayanja and Byarugaba 2001). The local people argue that forest conservation is being implemented at a cost of local livelihoods while the government accuse the peasants to be responsible for even destruction caused by legal activities.

Under the circumstances of no clear agreeable terms of forest use on both government and the local peasant farmers, degradation is encouraged. Moreover, it is suspected that participation of local people in forest patrols is used as an opportunity to identify resources for illegal extraction. Again, under the circumstances, it is difficult to rationalise the benefits from the forest. Up to 40% of the revenue collected from ecotourism is “returned” to the local people for community development projects (Mupada 2005, Mulopa 2008). Currently, it is difficult to determine whether there is commitment to this “agreement” since there are no tangible benefits for individuals or the community at large, except those who are “directly employed” by the eco-tourism project.

The local people subsequently abandoned their roles and responsibilities stipulated in the agreements and instead compete with government agencies (e.g. NFA) to extract benefits from the forest reserves illegally on their part. The current state of Mabira Forest Reserve can, to a large extent, therefore be attributed to greed on the government side and poverty among the neighbouring local people. The extent of deforestation has to some extent been accelerated by the population growth in the 27-village enclaves (Galabuzi *et al.* 2014) or the population explosion in the neighbouring human communities especially in Kampala and Jinja. Within such communities, conservation is not valued unless they are permitted to utilise the forest and extract resources to supplement

their incomes (Vosti 1995). The policy seemed clear on the roles of various stakeholders but the strategies for its implementation appear inadequate. Government commitment to effective implementation of the new policy is also limited.

Thus deforestation has continued in Uganda (Obua *et al.* 2010) despite the development of a National Land Use Policy of 2007 and the related laws/ policies. There is, for example, over-exploitation of locally utilised plant species such as *A. neptunica* sticks used for meat and chicken roasting. According to the local people, illegal harvesting is making many plant species scarce. Consequently, the local people travel up to 8 km inside the forest to collect species such as *Alchornea* sp. and others (e.g. *C. millenii* *Alstonia boonei* De Wild., *Citropsis articulata* (Spreng) Swingle & Kellerman, *Antiaris toxicaria* (Rumph. ex Pers.) Lesch., *Celtis* spp.) for forest land that are locally demanded for housing, craft material, medicine timber and firewood.

The National Land Use Policy of 2007 foresaw the current competition from different sectors (e.g. agriculture, forestry, industry and urban development) for forestry land. The conflicts and disharmony over land use allocation between the sectors has increased deforestation (Government of Uganda 2007). The policy recognized the need for consultations between institutions and stakeholders on land use allocation and formulation of laws. Strategies are laid out to review, develop and harmonise the different sectoral laws and policies relating to land use and management. District land use plans are developed in line with the national land use plan to promote coordinated, integrated land use planning and management. The poor management of government land and the fact that public land is not titled was identified as a major loophole in the previous policies. Encroachment and misuse of land in forest reserves such as MFR is a result of this weakness, leading to escalation of conflicts between local communities and government institutions.

There is now a general feeling among the government officers that economic viability should be the main criterion used to allocate land to different uses. Recognition of the heterogeneity of forest users and uses is a condition for forest policy efficiency (Rives 2013). Timber is the most highly valued forest resource by government and limited attention is given to the non-timber values (including cultural and environmental services). It is necessary to change this view as policies are reviewed. There is hope for the forests if emphasis is put on restoration. The major restoration practices recorded around MFR that provide avenues for the involvement of local people are described in the subsequent sections of this paper.

## **Current forest and allied tree based management practices**

### ***Management of the forest***

The NFA manages the forest based on various silvicultural principles. Some of the recent practices include dividing the forest reserve into management zones. Others include integrated stock mapping and survey inventories for determination of timber stocks and regeneration potentials and enrichment planting. The aim is to stop illegal exploitation

(e.g. unlicensed timber harvesting and charcoal burning). However, there are challenges such as the need to harmonize the changing local peoples' priorities, poverty, confusing policy environment and political pressure (e.g. National Resistance Movement's government efforts to degazette part of Mabira forest reserve to expand private sugarcane growing) with management objectives.

### *Eco-tourism in the forest*

Eco-tourism was recommended by the 1988 Forestry policy as one on the environmentally friendly activities for income generation. Between 1994 and 1995, ecotourism was introduced in MFR as a strategy to generate revenue and create awareness among the local people about the potential values of non-extractive forest use. Eco-tourism is now one of the activities permitted within the CFM arrangement. Under this arrangement, guided forest tours are conducted with the help of a few local people selected by NFA. According to NFA officials, the local people benefit from ecotourism through establishment of community resource centres such as schools using the revenue collected from ecotourism. The local people however, feel that benefits from the forest make more sense at the household level rather than provision of shared facilities. The shift from collective to household prosperity affects critical resources in the forest and accelerates degradation as the local people abandon the monitoring role and compete for the resource to improve their livelihoods. In Mabira forest for example, some important timber and medicinal plant species (e.g. *Milicia excelsa* Engl. and *Prunus africana* (Hook. f.) Kalkman.) are reported to be threatened (Baranga 2007, Howard and Davenport 1996).

### *Domestication and management of important indigenous plant species*

This is one of the main restoration approaches used by the Community Based Organisations (CBOs) such as MAFICO, which have tried to domesticate *A. neptunica* and promoted it as a live fence. Another CBO, the Centre for Integrated Development (CIDEV) through Nagojje collaborative forest management association (NACOB) has promoted re-planting some degraded sites with *C. deeratus* used for making stools. In some areas within and outside the reserve, trees of *Pinus* spp. and *Araucaria* spp. have been promoted by NFA for timber production. Indigenous species such as *P. africana* and *M. eminii* are less popular and been tried out by the NFA on a small scale. There is however, no clear policy guiding forest restoration activities such as selecting species to be planted in degraded forest. It is necessary to address this in the policy and legislation issues in order to promote restoration of forests.

### CONCLUSION

A key factor influencing the dynamics of natural forest cover in Uganda is the delay in reviewing policy guidelines and regulations as well as limited involvement of local people

in the review process. The present review covering the last century shows that the evolution of policy may either promote the conservation of forests or cause deforestation. Even if the policy has good provisions to favour forest protection, inadequate involvement of local people jeopardises its implementation. The forest policy reviews should preferably take place within 5–10 years rather than durations of over 10 years shown to be unfavourable for forest protection in the present review.

Involving local people in designing guidelines for management and equitable sharing of benefits from forest resources could halt deforestation and promote restoration. This is vital for ensuring restoration and sustainable management of forests and allied tree based resources.

To effectively manage the Forest Reserves therefore, forest managers need to engage in rational collaboration with key stakeholders, in particular, the local people whose commitment cannot be taken for granted. It is necessary for the forest managers to work closely with the local people to improve the relationships and collectively minimise illegal activities in the forest.

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