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Contribution of traditional institutions to the sustainable management of sacred forests: Case study of Mankon sacred forests northwest region, Cameroon

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Abstract

This study was carried out during the period of July to December 2013, with the aim of determining the contributions of traditional institutions, knowledge and practices on the sustainable management of sacred forests. Participatory Rural Appraisal (PRA) approach, questionnaires, semi-structured interviews and focus group discussions were conducted to128 inhabitants in seven quarters in the Mankon fondom. The results showed that traditional, administrative and political institutions such as the *kwifo, FO'* (king of Mankon), and the Mankon Traditional Council were the major actors protecting the potentials of the Mankon sacred forest and the socio-economic development of the fondom. Forty eight percent (48%) of the respondents did not have access and control over the sacred forest due to the cultural beliefs, taboos, customary laws and myths. The main motivation was the belief that the destruction of the sacred forest will result to cultural ethnocide. It was also discovered that the statutory law recognized the existence of traditional institutions especially the *FO'* but failed to state specifically its exact position in the scheme of forests governance, thereby weakening these institutions that ought to contribute in protecting sacred forests. The factors found to affect the efficiency of traditional institutions; knowledge and practice were age, gender, education, modern religion and westernisation. The study concluded that traditional institutions have made significant impact on the sustainable management of sacred forests, governance and administration of the Mankon fondom. It recommends that the government should incorporate sacred forests into the protected area system of forest management in Cameroon.

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Introduction

One of the features of Cameroon is its multiethnic and multicultural diversity. There are over 250 ethnic groups which speak more than 250 mother tongues and a bilingual culture of French and English as the official languages (Egute, 2012). These ethnic groups have unique traditional customs, institutions and cultural taboos which together make up Cameroon's rich cultural heritage. Her forests (47.5 million ha) are also exceptionally rich in biodiversity. The network of protected areas in Cameroon accounts for 8.13 million ha with 17 National Parks, covering 19.2% of the national territory (MINFOF, 2010). The legal system of Cameroon is made up of the statutory and customary law (Thomas and Simone, 2011), but the villages are governed largely through customary law by traditional rulers who are held in high esteem especially in the Southwest and Northwest regions of the country.

There are over 1,361 sacred forests in Cameroon covering a surface area of 46,920 ha or 0.46% of the total land area (Kounga, 2013). The Mankon sacred forest is the largest sacred forests (85ha) in the Bamenda highlands in the North West Region (NWR) of Cameroon. This area is one of the top 200 world's ecoregion (WWF, 2010). A sacred forest is a forest reserved by traditional authorities for posterity, socio-cultural and religious practices. The Mankon Sacred Forest (MSF) has multiple potentials which are of great significance for the wellbeing of humanity and represents a natural heritage of great value (Himberg, 2006). Religio-culturally, it is believed that the ancestors reside in them, thus the sacred forest serve as home to the gods of the fondom (*Kwifo)* and royal ancestors. The MSF protects the FO, the royal family and village serving as a means of escape in case of war or any attack. It is also important as part of local history and identity; providing a reminder of the people that lived in the area, sense of place and the evolution of biodiversity (Bhagwat and Rutte 2006). Despite the importance of sacred forests, the main problem is the unsustainable management of sacred forests.

This is caused by the weakening of traditional institutions, poaching for posterity, deforestation and poor agricultural practices; low levels of environmental education, and poor institutional framework.

Traditional institutions have remained a dominant part of local communities and recognized by the people for homage and reverence. In Mankon fondom, the existing traditional system, which has been before her colonization, is one institution that has performed a significant role in the management of natural resources. More so, articles 8(j) and 10 (c) of the Convention on Biological Diversity (CBD) calls for parties to respect, preserve, and apply knowledge and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity (UNCBD, 2007). Despite these recommendations, the statutory law does not recognise the existence of traditional institutions and does not specifically state their exact position in the scheme of forests governance. In the modern system, the roles, and authority of traditional institutions have been greatly reduced to traditional rites performance (Bonye and Millar, 2004). This has greatly weakened these institutions that ought to contribute in protecting sacred forests. Traditional institutions contributed in the use and control of forests resources but today this traditional system of forest management is proving less effective. They have been undermined in many respects with the advent of religion, westernization and modern governance systems handed down from colonialism. However, few studies have investigated traditional institutions, knowledge and practices concerning sacred forest and how they could be integrated into conservation strategies (Saj *et al.*, 2006). As a result, the assessment, revitalization, documentation and promotion of these practices, are very exigent (Lelewal, 2011).

This study is a precious addition to the existing knowledge on traditional institutions as well as the political, economic and socio cultural history of the Mankon communities.

It will enable scholars to make adequate comparative analysis in their governance and administrative system. The main objective of this work was to improve on the conservation and sustainable management of sacred forests by (1) examining the roles of traditional institutions involved in the sustainable management and conservation of biodiversity in the Mankon sacred forest, (2) assess their knowledge systems and practices, and (3) identify the factors affecting the efficiency of traditional institutions.

Materials and Methods

Description of study site

This study was carried out from June to November 2013 in the Mankon fondom. The Mankon sacred forest (MSF) is located between latitudes 10°5'22" N and Longitude 10° 6'21" E. Mankon is an ideal fondom with first class traditional ruler and has a history of development and natural resource management to which the contribution of traditional institutions cannot be undermined.

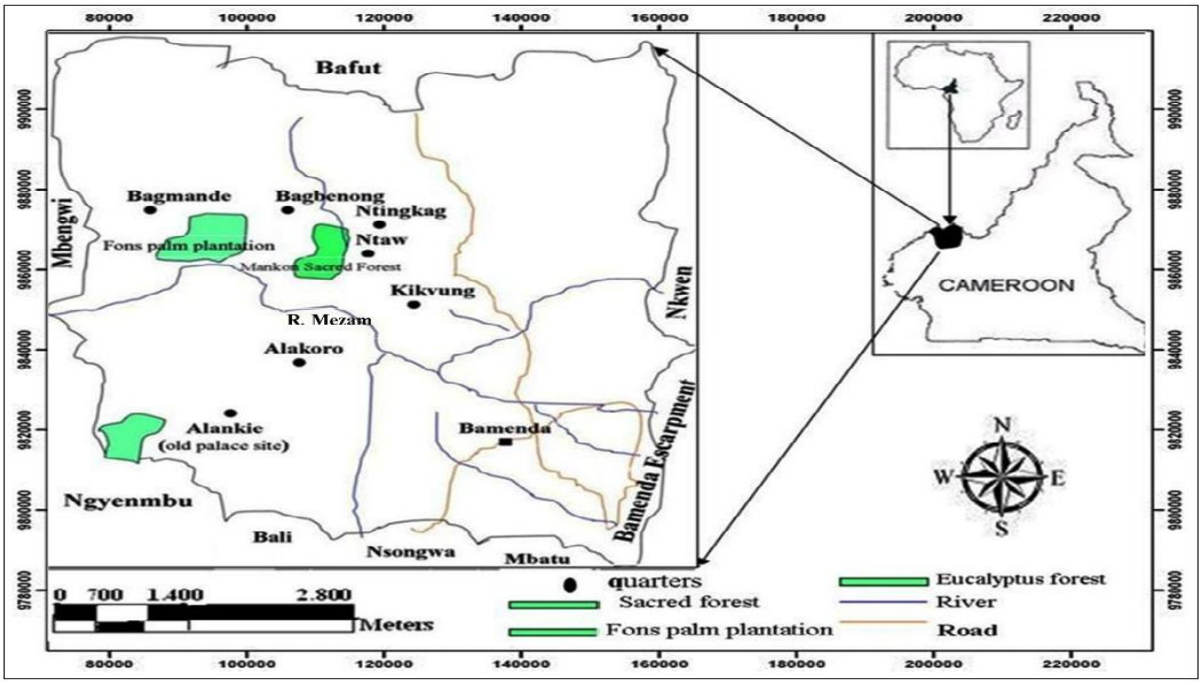

Fig. 1. Map of Africa showing the location of Mankon sacred forest in the Northwest region of Cameroon. Source: Adapted from Ntumnifor, 2013.

With surface areas of 85ha the Mankon sacred forest also known as the *kwifo* sacred forest is the largest montane sacred forest in the NWR situated at an altitudinal range of 1300 m above sea level. The area has equatorial climate with little variation in temperature, humidity and winds throughout the year. Rainy season is over eight months from March to October with average rainfall of 2300mm and dry season from November to February. The dry season is characterized by dry Harmattan winds with average temperature of 21°C. This special convergence of temperature and rainfall has led to an impressive diversity in mammals, birds, reptiles, butterflies, and plants.

The landscape is generally a mountainous, spherical in shape and rugged topography with gentle to moderate hill slopes.

The soils are hydromorphic and ferralitic (Hawkins and Brunt, 1965). The climate and good loamy soils favors the growth of a variety of food and cash crops as well as wildlife. Even though the sacred forest is small (85ha) in size, about 120 bird species with endemic bird species such as *Barnama tauroco* (*Tauraco bannermani*), Bamenda Apalis *(Apalis bamendae)*, Banded Wattle-eye (*Platysteira laticincta*) have been identified in the forest.

Similarly, 160 species of plants *such as* Ewa (*Schefflera mannii),* Ngaah *(Dissotis bamendae),* kieng *(Xylopia africana),* Pygeum (*Prunus Africana*), (OCOTONAP, 2006) as well as animals such as Preuss's Monkey (*Cercopithecus preussi)* declared threatened under the IUCN and MINFOF classifications (IUCN, 2010; MINFOF, 2013). Mankon has a land area of about 315km² and an estimated population of 350,000 inhabitants with population density of 158p/km² (OCOTONAP, 2013). Agriculture is the predominant activity followed by animal husbandry, cereal farming, and small-scale vegetable gardening. Figure 1 below shows the location of the Mankon sacred forest in the Northwest region of Cameroon.

Data collection

Field data collection began with a recognisance visit to the study area in order to ascertain the possibilities of carrying out the study, the difficulties anticipated, and the availability of information. Pre-investigations by open discussions were conducted with the *FO'* of Mankon, his secretary and a prince in order to select appropriate study sites and key informants. A 1:100.000 topographic map of Mankon was used to delimit the study area and to guide the sketching of the sacred forest concept map (Fig. 1).

Two research assistants were equally selected and trained on the subject matter. Data for the study was obtained from secondary and primary sources.

Secondary data

Secondary data were obtained from the archives of the Mankon fondom in the keeping with the FO', NGOs such as OCOTONAP and WA Cameroon that has been working in the Northwest of Cameroon in the domain of conservation, as well as from review of works from the Mankon library, FASA and University of Dschang. Documents related to the 1994 Forestry and Wildlife Law, and decrees of applications were also consulted. Additional documentary sources such as books, journals, magazines, and the internet were also consulted.

Primary data

This study employed a participatory rural appraisal (PRA) approach (Himberg, 2006; Tchamou, 2007), which consist of participating in activities related to natural resource management organized by the villagers. The advantage of PRA was its strength to build the trust and friendliness with participants which are keys in sacred forest research as the management of these forests is based on taboos and myths that local communities are often reluctant to share.

Twelve (12) closed ended test questionnaires and semi structured interview guides were designed and shared to 2 research assistants and 10 students at the University of Dschang campus. The purpose was to identify difficulties in order to fine-tune the questions for easy understanding by respondents. After testing and fine-tuning, 100 closed ended questionnaires were administered randomly to 23 farmers, 12 traders, 20 students, 18 teachers, and 27 ordinary members of the community from 7 quarters out of 67 quarters in the fondom. The 7 quarters which comprised of Ntaw, Ntingkag, Kikvung, Bagbenong, Bagmande, Alakoro, and Ala'nki were purposively selected due to their proximity to the sacred forests, low population density, have sacred forest in relatively intact status and emphases on traditions. The questionnaires were serially distributed (after every third household) according to the population size of age groups which ranged between 15-35, 35-55, and more than 55 years old. Coloured papers of the colours pink, green and yellow were used to multiply the questionnaires and enhance their response.

Twenty eight (28) semi-structured interviews were conducted with the *FO* of Mankon (1), 8 notables (comprising of 2 clan heads, 3 quarter heads, and 3 family heads), 2 palace retainers and 5 women, 2 NGO's, 2 youths, 2 pastors, 2 herbalist, 2 lawyers, 2 delegates from the divisional delegations of MINEPDED and MINFOF. These key informants were selected on the recommendation of the community during participatory rural appraisal (PRA) based on their local and scientific knowledge of sacred forests,

Mankon culture and the laws governing forests and local communities in Cameroon. 128 people were successfully sampled out of a population 20.000 inhabitants in the study area. In general, the questionnaires and semi structured interviews were administered on Sundays after church services and Nzenkane (Main traditional Sunday) which were off days with restricted activities. The interviews were done with the help of a translator at the palace, homes, church and schools. Some of the interviews were recorded using phone tapes of mark Itel BL-5c, videos and digital camera (cannon 1500 PX) to which the interviewees had consented and were useful in spatial analysis.

Five (5) focus groups discussions were conducted with meeting groups (*Ngang, Bombe Sanyom, Asuk, Asamba* and *Akyanti*) in each of the seven quarters. The aim was to make the communities proposed practical intervention measures (logical framework) for the sustainable management of the Mankon sacred forests. Other method used to collect data were personal observations and physical confirmation of the communities' way of life and usage of natural resources and recording the different types of species present in the sacred forest.

Data analyses

Data from the questionnaires and interviews were coded by assigning numbers (1, 2 and 0) and entered into Statistical Package for Social Science (SPSS) vs. 17 for analysis and then transferred into M.S Excel in which tables, histograms and charts were generated. Traditional institutions were analysed using institutional analysis. Strategies proposed for the sustainable management of the Mankon sacred forest were analysed using logical framework analysis. During the fieldwork period, information was continually analyzed with the participation of the communities. The data collected for this study was mainly qualitative in type and therefore, analysis and interpretations was largely based on descriptive statistics. Adobe Illustrator and M.S Picture Manager were used to draw maps and treat photos, respectively.

Results and discussion

The roles of Traditional Institutions in the Management of Sacred Forests in Mankon Fondom

Seven (7) traditional institutions were identified to be involved in the management of Mankon sacred forest for biodiversity conservation as shown in table 1 below.

Table 1. The roles of traditional institutions in the management of the Mankon sacred forest.

Traditional institutions	Potential role in sacred forest conservation
KWIFO (sacred society)	Use supernatural powers to control over exploitation of sacred forest resources -Reinforces laws for maintenance of peace; -Discipline and enforces the payment of fines -Enforce customary rules and regulations over sacred forests
The *FO*' (King of Mankon)	-The *FO*' is an agronomist thus has a wealth of knowledge on forest conservation; - Ensure effective and efficient management of the sacred forest -Works in collaboration with the traditional council to enforce modern and customary laws on the use of SF resources -Pass local byelaws and ensure their enforcement and above all ensure proper administration of the village -Has control over sacred forest resources and is the only person to authorize timber harvesting for social services.
Mankon Traditional Council (MTC)	- Made up of king makers, elders who are mainly clan, quarter and family heads of each quarter -Serve as traditional courts at the village level by resolving land and other disputes between individuals -Make rules and regulations to protect the sacred forest -Ban the hunting of all endangered and flagship species in the SF -Enact laws which help in controlling deforestation

(*Ngangfo*) -Herbalists - Naturopaths -Soothsayers	-Promote sustainable methods of medicinal plant harvesting by - Using leaves, roots and one side debarking of medicinal plants thereby preserving the intrinsic values of the plants -Purification from evil spirits by invoking supernatural powers
Notables (Clan, Quarter and Family heads)	-Enforce sacred forest resources management policies at clan level - Decree tree planting among members. -Keep sacred shrines around trees, water and forest thus alternatively protect the trees and forests -Plant peace trees to settle disputes -Restrict utilization and cultivation in/ around shrines and sacred forests -Keep trees in farms for shade; Plant trees for pollenization and honey production; surveillance by reporting cases of encroachment
Women union	-Compose songs that regulate the over exploitation of forest resources, pass on experience to children -Work farms on communal bases to raise money for the common interest of the group, hence they reduce pressure on the SF
Youths Groups of the age 15-35 years	- Provides general labour for community development, -Casual labour for operation such as clearing and pruning of trees and grass around the sacred forest boundaries to prevent bush fires

Traditional or Indigenous institutions are social organisations, political or administrative institution, age grade association, trade and professional guilds, village unions, community development associations, women groups and religious organisation using a set of rules, unwritten norms and regulations to prohibit or permit specific types behaviors and actions towards the management of sacred forests and other natural resources (North, 1990). From the foregoing institutional analysis in table 1 above, the main reason for the success of the MSF until now is due to the conservation efforts of the *FO*" of Mankon.

Table 2. Cultural beliefs and Taboos of the Mankon people.

Taboos	Sanctions
Using firewood from the sacred forest	The children of the offenders will be burned by fire
Farming around the sacred forest	The family will be subjected to ill fate in which certain family members can be burned by fire
Encroachment in to sacred forests	Bad luck, sudden illness, or even death, amputation of a member of the offender or abortion in the case of a pregnant woman
Violation of sacred days (Country Sundays)	Poor crop yield
Sacrilege in the sacred forest (getting in with unclean mind such as sorcerer practices)	The offender gets lost in the sacred forest and can spend several days in the forest without finding his way back home until he confesses.
Beat a thief or criminal after the branch or leave a sacred tree Ndzengewa *(Ficus thonningii)* is placed on the person	Strong self-enforced sanctions. Fines of sheep, goats, and gallons of palm wine can be demanded by the *kwifo*.
Killing sacred animals such as python, monkeys and Bannermans Turaco	Strong self-enforced sanctions, bad luck, sudden illness, or even death

As an agronomist, his knowledge in forest preservation as well the strong leadership over his subjects has also influence his efficiency in the sustainable management of the Mankon sacred forests as well as the sustenance of the culture and tradition of the Mankon people. In close consultation with local people through the notables (clan, quarter and family heads) and with the views from the MTC (judiciary), the *FO*' administers the general governance of the Mankon fondom. Traditionally, the Mankon people say that the " *kwifo* (Gods of Mankon) is the owner of Mankon, its trees and animals, as well as the people, though all land and natural resources in Mankon is entrusted to the *FO"*. This saying emphasizes the importance of *kwifo* as the giver of material wealth and the importance of the *FO* as the leader of the fondom. The *kwifo* juju is believed to possess magical powers that could harm anyone who sees it physically and generations yet unborn (Eyong, 2010).

The fear of the *Kwifo* juju's beatings and ill lock contributed in law enforcement enabling culprits to cooperate. A study by Ongia and Epilla (1993) in Lira district, also noted that clans and herbalist preserved special tree species such as *Ndzeng* (*Ficus* spp) and *Ewa* which were used for casting away diseases that commonly attack twins, and as such, these plant species were conserved.

Table 3. Explaining the traditional conservation practices in Mankon using scientific views.

Traditional practice	Scientific implication on Biodiversity Conservation
Traditional rules and regulations -Controlled burning of forest -Seasonal harvesting of natural resources -Preservation of certain species of trees for royal use e.g. for making royal drums,	-Increase regeneration, breeding and improve resilience of species -Avoid over exploitation of natural resources and also to allow regeneration -Preservation of trees with longer rotation period to avoid extinction
Cultural beliefs and Taboos Dos and don'ts without tangible explanations e.g. Pregnant women should not eat certain animals e.g. monkeys -Do not cut whole medicinal plant lest the disease come to you	Enable people to conserve biodiversity where forest and wildlife laws cannot be enforced to regulate over exploitation
Cultivation habits and harvesting methods -Planting trees for shade and pollination; for firewood, cut only dead wood -No cutting of fruit trees -Debarking of medicinal plants should be done only on one side where sun does not shine directly	-Reduces competition among people, birds and fruitvores thereby balancing the ecosystem -Reduces deforestation -Reduces the drying rate of trees after debarking -Reduces harvesting frequency and enhances regeneration -Promotes conservation of biodiversity -Enhances soil fertility
Myths -Forest are considered spiritual spaces -Sacred forest are homes to ancestral spirits -A dense forest is synonymous to "bring rainfall"	-Reduces human induced negative disturbances on forest biodiversity -Promotes water cycle and sustainability of an ecosystem -Promotes sustainable ecosystem functioning through reduced human impact. -Knowledge of nature induces intrinsic respect for conservation
Traditional protected areas (TPA) No harvesting near grave sites to give respect to the dead	-Ethno forest refugia for threatened species -Breeding sites for fauna species -Promotes corridors and dispersal zones
Traditional festivals and rituals	-Engage dialogue with government officials (GOs), non-governmental organizations (NGOs) - Advocacy for development issues, -Action plan for NRM, -Appeal for stakeholders' support and -Disseminate local bye-laws, policies and programmes

These five cornerstones of the Mankon traditional governance system has been in existence since the beginning of the fondom. Their conservatory prescriptive regulations for sacred forest management have ensured the co-existence between humans and plants, animals, mountains and rivers (Bonye, 2006). As Freddy (2006) puts it "resource degradation in developing countries, actually originates from the dissolution of local level institutional arrangements whose very purpose was to give rise to resource use patterns that were sustainable. Traditional institutions enforce rules, incentives and penalties for eliciting behavior conducive to rational and effective forest conservation and use". Eyong, (2010) also describe the MTC institution as the most democratic institution at the village level as decisions are taken democratically even though it is not empowered under the Cameroonian law. This study is also in line with Byers *et al.,* (2001) that forest degradation is low in areas where traditional leadership is strong and effective as compared to forest where traditional rulers were stripped off this function.

Table 4. Age, gender, and educational level of respondents.

Demographic Factors	Frequency	Percentage
A. Age		
15-35 years	21	16. 4
35-55 years	58	45.3
55 years +	49	38.3
B. Gender		
Male	78	60.9
Female	50	39.1
C. Educational Level		
No Formal Education Primary School	12	9.4
Secondary	23	17.9
School University	59	46.1
Others	15	11.7
Total	19	14.8
	128	100

The persistence nature of certain species can be attributed to the level of conscientiousness among the people about conservation. Thus in order to fulfill Cameroon's obligations under international environmental agreements such as the CBD, the potentials of traditional institutions ought to be identified and strengthened by the state government as it contributes in limiting access and rampant exploitation of sacred forest resources thereby contributing to the conservation of biodiversity.

Role of traditional knowledge

Traditional knowledge has been defined as the mental capacity and innovations developed by the local people from experience gained over the centuries and transmitted orally from generation to generation to understand and relate forest issues to practical use, about the relationship of living beings (including humans) with one another and with their environment (UNCBD, 2007). The rich and intact nature of the unique Mankon sacred forest has been maintained through traditional environmental knowledge by;

- Identification varieties of plants and animals
- Selective harvesting,
- Conserving the potential, ritualistic and socio-culturally valued species (Ormsby, 2013)
- Planning of development programs,
- Knowledge of species distribution, which are difficult to investigate by means of scientific studies
- Development of traditional practices.

Observations by local people are central in getting information on aspects of long-term vegetation change. For example in a study done in the Philippines, it was found that an average adult in a group of shifting cultivators could identify around 16,000 varieties of plants. An earlier systematic botanical survey had recorded only 12,000 species (Castro *et al.,* 2001). Another example is a soil survey in Africa where a local agriculturist could generate perfectly usable soil maps much quicker than the soil scientist (Michaelidou *et al.,* 2002). Mankon people also have extensive cultural knowledge about local history, customs, beliefs and mythology (Godbole & Sarnaik, 2004). Unfortunately, as Himberg, (2006) describes, "The loss of traditional knowledge within cultures undergoing rapid change, is a problem which is at least as serious for humanity as is the loss of species". Thus, traditional knowledge should not only be incorporated into ecosystem and community viability efforts, but should also be maintained.

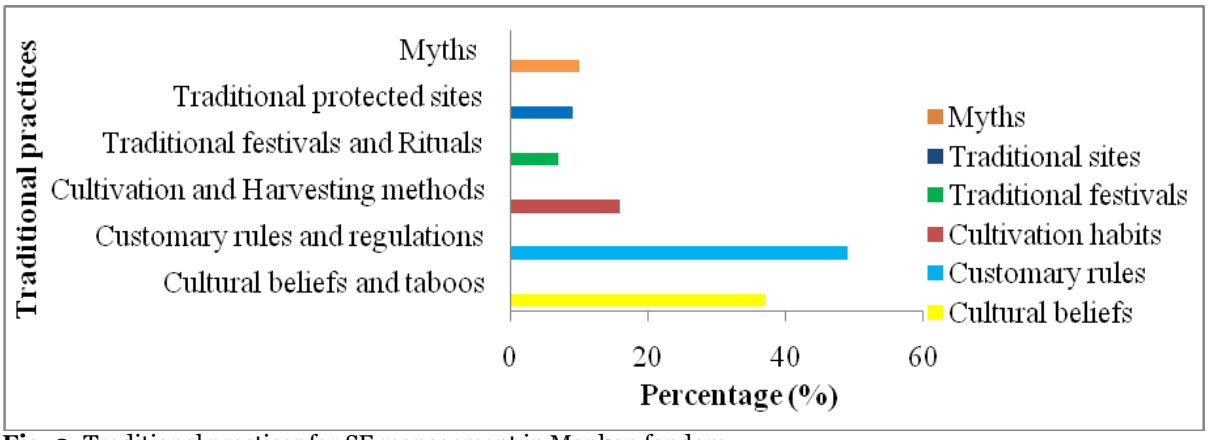

Fig. 2. Traditional practices for SF management in Mankon fondom.

Linkages between modern science and traditional knowledge need to be recognized and acknowledged (Ormsby, 2013). For example, the Mankon people value forest for the spiritual values while science appreciates the economical and biological values. Thus, avenues through which the environmental and cultural knowledge can be passed to new generations should be established since traditional knowledge appears to be a key element in the development of many of the traditional practices.

Role of traditional practices

Traditional practices refers to the activities carried out by local people to control, use and manage natural resources such as land, forests, soils, and water according to traditional systems or customary laws developed by the local community over time in their daily interaction with the environment (UNCBD, 2007). These practices have been put into categories for discussion purposes as shown in Figure 2 below.

From figure 2 above, 37% of respondents indicated that cultural beliefs and taboos as traditional conservation practice, 49% indicated customary rules and regulations, 16% cited cultivation habits and harvesting methods while 7% cited traditional festivals and rituals, 9% indicated traditional protected areas and 10% also mentioned myths as conservational practice. Detailed information on these methods uncovered through interviews and focus group discussions are explained below.

Cultural beliefs and Taboos of the Mankon people

Cultural beliefs and taboos were considered as practices that relate to socially accepted unwritten rules, or social prohibitions, without tangible explanations (Freddie, 2007). Table 2 below shows some cultural beliefs and taboos of the Mankon people.

Indept interviews revealed that cultural beliefs and taboos contributed in regulating Mankon people's behavior towards the use of sacred forest especially its wildlife resources. These restrictions and taboos were laid down by the ancestors and form the basis of the Mankon society and no Mankon man would dare to violate them. Most people (47%) still observe the clan and individual taboos, just as the Muslims interdict pork. Animals such as bush baby (*Galago alleni*), chimpanzee (*Pan troglodytes elliotii*) and preuss's monkey (*Allocebus preussi preussi*) are taboo because they are the closest relation to man of all the animals, totems and also the belief that if eaten by a pregnant woman her child will likely resemble these animals. As a result some hunters may not be willing to kill any animal that will not be eaten by their wives. Mboma (*Python sebae*) were also considered as taboo by 37% of respondents. The reason for this was that the bile of python is believed to be poisonous. Thus, any hunter that kills python would have to sacrifice a goat. In addition, the python will brought to the village centre where the bile would be removed and destroyed in the presence of everybody in order to be certain that no one would have access to it for negative use.

Tumnde, (2001) and Ndeloh *et al., (*2008) reported, similar practices in the Mount Cameroon area as well as in Southwest Cameroon.

Furthermore in the study area, certain trees such as Ndzeng (*Ficus sur*) and Ighum (*Ficus natalensis*) were also considered sacred and were not supposed to be felled without performing rituals. It is believed that they harbour the spirits of the clan ancestors and as such these trees were not exploited. The belief in the consequences of entering the sacred forest prevented the villagers from exploiting its resources and this unintentionally contributed in conserving biodiversity (Saka *et al.,* 2012). This also shows that taboos may contribute to the conservation of vulnerable wildlife habitats, flagship, endemic and keystone species (Tsi, 2006; Yasuo *et al.,* 2012).

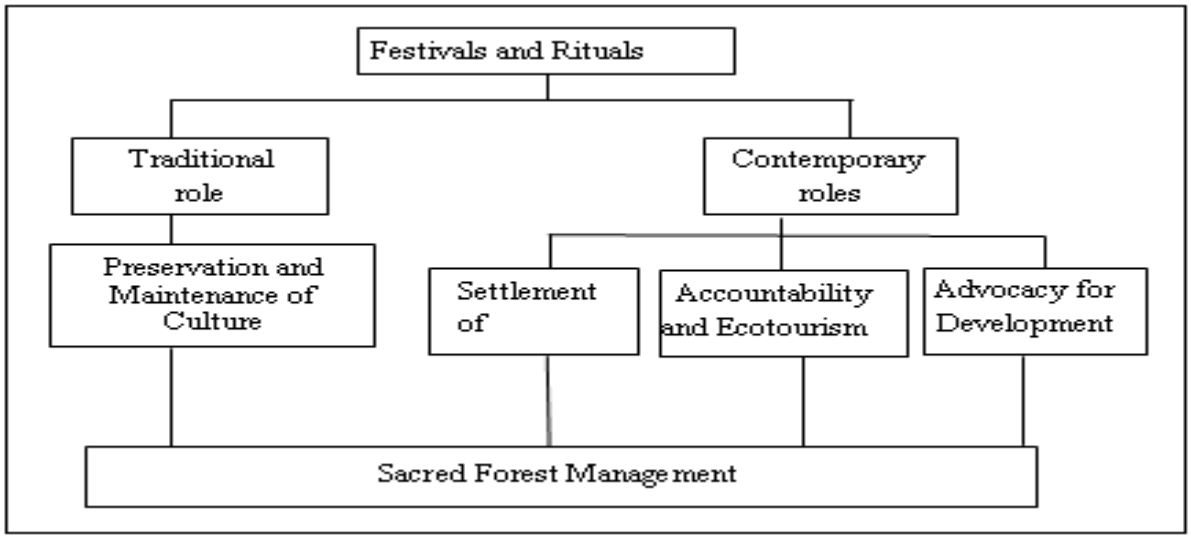

Fig. 3. Roles of festivals and rituals in the management of sacred forest in Mankon fondom Source: Adopted from Bonye, (2006).

Customary rules and regulations

According to 47% of the respondents, customary rules and regulations were set up to regulate access into sacred forests (Freddie, 2007). Mankon community is governed by customary laws stating rules and sanctions for those who do not comply or violate the rules stated therein. Persons who misuse natural resources are applied sanctions determined by the traditional council. Sanctions range from an oral rebuke to fines (gallons of palm wine, goats, cow money) even to the loss of all the status and rights as community member. These rules have been reinforced by the village regulatory institutions (kwifo sacred society) as well injunctions placed at strategic positions around the sacred forests. It is now left for policy makers to identify and strengthen such practices for effective management of sacred forest for CBD.

Cultivation Habits and Harvesting methods

It was observed that trees such as Ewa (*Acacia* spp), Nibi (*Garcina kola*), kieng (*Xylopia Africana*), Lung (*Ficus vogeli*) and Ati nibi (*Cola animalis*) as well as ornamental trees were planted around the village, houses, and farms. Sixteen percent (16%) of respondents acknowledged that the trees served as windbreaks, chase evil spirits, shade and for medicines. This cultivating habits of the Mankon people has enable the people to be able to produce their own tress for fuel wood, construction and personal use and as a result has greatly reduced pressure on the sacred forest resources thereby boosting its potentials for biodiversity conservation. Castro *et al*., (2001) also highlighted local knowledge in tree management for shade, pollination and honey production in the Philippines.

Harvesting methods refers to extraction methods such as fruits collection by picking only without cutting the whole tree, or non-destructive picking. Debarking of medicinal trees during extraction was done on one side only, unlike ring debarking. This was done in order to allow the survival of the tree because the cambium on areas left with barks continues to function in transporting nutrients from the roots to other parts of the plant.

Traditional protected areas

These included sacred forests, sacred caves (*Mbue*) at Ala'mandom, and burial sites at Ala'nkyi and sacred trees (*Ndzeng, Ewa* and *Wume*) where shrines may be located. These areas had spiritual values which were confined either to a certain clan, family or individual's attachment to the forest resource. Information about specific knowledge of forest or tree values is passed on through unique experiences of parents and family members (Cho, 2004). For example, if an ancestor of a clan was buried in a forest or a certain medicinal plant had healed somebody from a chronic illness, or was used to induce fertility in a barren man or woman, family members look at that tree as a spiritual medium for healing. Consequently, such a tree species will be of spiritual value to that family or clan. Although the initial idea was not for conservation, the activity could be appreciated from a conservation point of view because this helps maintain species diversity and abundance thereby the functioning of the ecosystems. According to Dudley *et al.*, (2009) and Ormsby, (2013), these sites survived over several years and acted as reservoir for biodiversity despite the religious battle against them. This practiced also greatly favoured the total protection of certain vulnerable species and wildlife habitats. Similarly, the practice of protecting streams and riverine vegetations helped in preventing the soil erosion and eutrophication. This type of watershed-based management practice should be encourage and included into SF management programmes. The MSF is a treasure to be preserved jealously by both the royal family and the natives respectively.

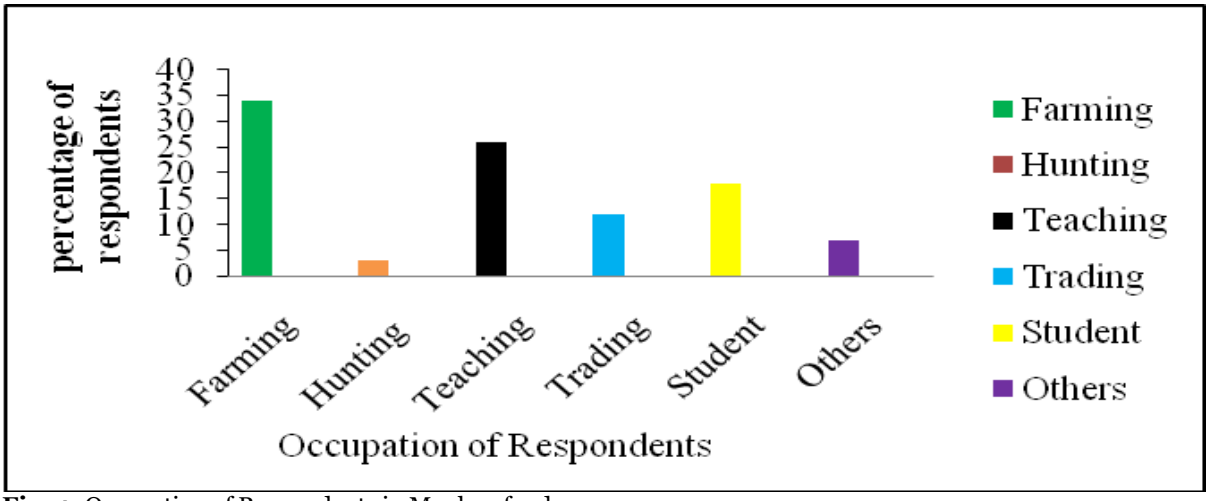

Fig. 4. Occupation of Respondents in Mankon fondom.

Traditional festivals and rituals

Festivals and rituals as indicated by 7% of the respondents where used as a strategy to the revival of traditional knowledge and practices that were previously marginalized and as such were useful for the management of sacred forests and biodiversity conservation (Bonye, 2006). The most prominent among others in the study site were *Nüsa, Ala'nkyi, Ngangfo* and *Nushwim* rituals and Nükwi festival which occurs once in the life time of a FO (Ntomnifor, 2013). The Mboumala and Abuin Afo festivals are performed annually and are considered a unifying ceremony. These festivals enhances the relationship between the community members, nature (soil, water, forest, wildlife), and the supernatural (gods and ancestors of the land) so that ecological balance is maintained (Foncho, 2013).

The *Ngangfo* ritual is performed to prevent any accidents or misfortunes during the festivals. In conducting these rituals, guardian spirit of *kwifo*, the gods of land, forests, water, and animal is invited. The purpose is to give thanks and to propitiate the gods of the fondom who protects and keeps the forest lush and the watershed source flowing for the entire year for the benefit of the community. These rituals are performed every year and are particularly important for communities where water is scarce, so as to ensure a yearlong supply. As a result of these rituals, the sacred forest cannot be disturbed. There can be no hunting, collecting of herbs, or cutting of trees for any reason. The spirit will punish any offenders by making them fall sick and when this happens, the person must perform a ritual propitiating the spirit in order to recover. Fig. 3 below illustrates the roles of festivals and rituals in SFM and community development.

According to Nold (2004), during these celebrations, traditional authorities (TAs) and people use these fora to appeal for funds for development projects such as schools, libraries, health centers, provision of streetlights, and festivals also attract tourist into the community and may earn some income for local development in the area. Politically, chiefs use the festivals as a means to achieve the principle of governance by consent, engage dialogue with government officials (GOs), non-governmental organizations (NGOs) and politicians through advocacy for development, plan actions for NRM, appeal for stakeholders' support and disseminate local bye-laws, policies and programmes. The occasion also offers citizens of the area the opportunity to visit home at least, once in a year to join their families and as a result, in the course of these visits, outstanding disputes and misunderstandings could be settled. This therefore, promotes unity and peace within the family system and the community as a whole. Culturally, the occasions helps to transmit, conserve, learning of traditional dances, songs, drumming, art and project the culture of the area (Foncho, 2013).

They provide an opportunity for elders to pass on traditional knowledge about the management of sacred forests, community resources and the meaning of customs to younger generations.

Myths

The Mankon people have developed interesting myths regarding their beliefs on the sacred forest and forest-dwelling supernatural powers. Based on Oates, 1999; Sherpa *et al*., 2013 and Tchamou, (2007) findings, myths are secrets transmitted from generation to generation highlighting victories during tribal wars or the misfortunes that had befallen the violators of the laws and injunctions of the sacred forests. Myths instilled traditional fear which has grown from age to age and has gone a long way to guarantee the protection of sacred forests and other natural resources in Mankon fondom. According to Eballa and Angamo, (2013) Mankon warriors took refuge in the sacred forest during tribal wars between Dr Eugene Zintgraff "Singere" and the Bali punitive expedition against the Mankon people in January 1891. It was alleged that the spirits of the forefathers (Kwifo) caused whirlwind around the sacred forest to protect them against their enemies and also the gods directed them into dangerous places where they were taken hostage. The Mankon warriors then lodged a massive counter attack and four out of 5 Europeans were killed right in the battle field.

Another informant reported a case where young girl was declared missing and found dead 4 days later in the Mankon sacred forest by the *kwifo* juju halved buried with her head in the ground and legs in the air. She was reported to have been stroked by thunder in the course of fetching fire wood in the central part of the sacred forest.

These myths were also similar to Bahouan village in west Cameroon (Tchamou, 2007) where a newly converted Christian catechist entered the sacred forest without permission with the intent of undermining what he deemed to be the trumped-up sacred character of the forest.

He got lost in the forest for several hours and only found his way out after loudly proclaiming his guilt in the forest. Since then, the entire community strongly believed in the supernatural power of *kwifo* and they believe that they should not enter, yell, whistle or speak in loud voices in the sacred forest, l*et al*one fell trees since these would annoy the sacred forest gods. Sherpa *et al*., (2013) posits that myths did not only reinforce human beliefs on the spiritual aspects of life on supernatural powers, it has also contributed to the maintenance of the potentials of sacred forest for biodiversity conservation.

Explaining the traditional practices in Mankon using scientific views

The traditional practices stated in this study are by no means exhaustive but merely a starting point for further research in the socio-cultural and ecological linkages as well as their contribution to the use of local ecological knowledge for biodiversity conservation. Table 3 below summerises the traditional practices and their likely implication on the overall conservation goals of sacred forests for biodiversity conservation in scientific terms.

Factors Affecting the Efficiency of Traditional Institutions, Knowledge and Practice

Even though trends in developments acknowledge the virtues and capabilities of traditional institutions, knowledge and practices in sustainable sacred forest management (SFM), traditional institutions are still significantly faced with challenges which include;

Modern Religion and Westernization

Changes in the society's structure, economic status and religion also affect the sacred value and environmental functions sacred forests. Traditional institutions, cultural knowledge and practices are gradually disappearing, as younger generations no longer share the same values of older generations and subscribe to modernism (Himberg, 2006). Christians believed that God does not reside in sacred forests and that these forests harbor witches and wizards. According to them God is suppose to be worshiped in churches and not in sacred forests. A good example is a pending case in the Bamenda high court where Afanwi Franklin and his church members destroyed a 600 years old sacred tree under the canopy that the tree was bringing illuck to the Bafut people. Saj *et al.,* (2006) also reported a case in Ghana where the Saviour Church of Ghana, encouraged their members to hunt olive colobus monkeys (*Procolobus verus*) and Diana monkey (*Cercopithecus diana*), which was a taboo among the Ghanaian people. It should be recognized that culture is always dynamic and not artificial as such, the documentation and preservation of the SFs could enhance their evolution

Poor institutional capacity

Poor institutional and legal framework characterized by inadequate or lack of human, material, logistical resources has negatively influence the management of sacred forest and the capacity of traditional institutions to enforce unwritten laws, regulations and implement policies vis-a-vis outsiders if they do not comply with the rules (Ndeloh, 2007). The Forestry Law 94/01 of 20th January, 1994 is complicated firstly in that it is not simplified to the understanding of the local people; secondly there is no legal pronouncement of sacred forests and last but not the least, the notion of customary laws and beliefs in community forest management is omitted in the law.

This explains why the local people are still not convinced about the effectiveness of the application of a community forest. Also the absence of clear demarcation of responsibilities between formal and traditional institutions has often created conflicts of roles set up to manage forest resources resulting in reduced community mobilisation spirit for the promotion sacred forest management (Ormsby, 2013).

Demographic factors

The demographic factors affecting the efficiency of traditional institutions, knowledge and practice and thus the potentials of sacred forest for biodiversity conservation in the Mankon fondom are age, gender, educational level and occupation of respondents as shown in table 4 below.

Age

Table 4 above gives a picture of age status in the study area. The population surveyed ranged in age between 15 and 55+ years. The age groups of 15 to 35 years constituted 16.4 %, 45.3% of the respondents were of the 35-55 age groups while 55 and above age group constituted 38.3%. These age groups revealed that the study area has an active population that may greatly influence the potentials of the SF to provide ecosystem services.

In further follow up discussions to find out how aged effects the structure of the traditional authorities, the study revealed that with the way of life tied to nature, the Mankon people have customs, knowledge, rituals, beliefs, teachings, and proverbs about sacred forests, their usefulness and how they should be managed for biodiversity conservation. The older generation transmits these teachings to the younger generation by not writing it down but through the thought processes and cultural practices of the community in carrying out their daily lives, by means of stories, proverbs, songs, ceremonies and the most important way of learning by doing. Thus, as people grow old and possibly die without these knowledge and customs transmitted to the younger generation, the knowledge and practices used in the preservation of sacred forest and other natural resources will also be lost. In the present time, Children and youth will forget their culture, loose interest in the sacred forest traditions, and instead copy the rising western culture leading to the loss in the potentials of traditional institutions (Chandrakanth *et al*., 2004).

Gender relations in sacred forest conservation

As can be seen from table 9b above, majority of the 128 respondents sampled were males (60.9%); while 39.1% were females.

The discrepancy in the male to female ratio was because most of the respondents targeted were the quarter, clan and household heads who were mostly men. This shows that majority of traditional governance structures in the fondom did not have women occupying positions such as clan and quarter heads and led us to conclude that men dominate the rural scene in the leadership and decision making structures and generally exclude women (Appiah, 2007; WA Cameroon, 2010). This also indicates that more males manage sacred forest than their female counterparts. This is a hindrance to sustainable management which entails that all partners be involved in the decision making. This was because women and young adults, for example were presumed to be represented by their husbands and fathers, respectively, and are customarily excluded from participation in the decision-making assemblies.

Women have developed different expertise regarding the management and use of forest resources, yet their capacity remains insignificant in both the formal and informal institutions in natural resources management (Bonye, 2006). Other challenges faced by women are strengthening of women leadership structures and male dominance in natural resource ownership and control (WACameroon, 2010). The gendered nature of their cultural rights and taboos limits the extent to which they can use land. They lack recognition and representation at institutional levels on NRM decisions and hence, their interests and demands in forest management are given inadequate attention.

Level of education

Concerning the level of education in the study area, table 9c above shows that, 17.9% of respondents attended primary school, and 11.7% attended university while 14.8% of the respondents chose the option others which include other forms of education such as technical and professional education.

However, 46.1% of the key respondents attended secondary school, while respondents with no formal education represented 9.4%. These results revealed that education level in the study area was high and affects sacred forest conservation in that the most educated people in the study area tend to be employed by the government in other services or have other business activities in town and so do not use or bother about sacred forest and traditional practices. As a result, in case of destruction, illegal exploitation and encroachment, traditional authorities lack adequate technical capacity and expert knowledge to evaluate, valorise and award cost of damage to natural resources. As Himberg, (2006) explains, knowledge about traditional use of plants has diminished during the past decades, as people seem to find it easier to buy drugs for an illness from a pharmacy and thus lack of proper knowledge about herbalism makes them unsure of how to treat certain diseases especially those affecting children. These findings however, support the recent call for traditional rulers to have some level of education so as to effectively manage sacred forest like the FO' of Mankon. Hence, in agreement with Georg & Wolf, (2004) that traditional institutions like in Ghana need a high level of environmental and forest education for the sustainable management of sacred forest for biodiversity conservation and community development.

Occupation of respondents

The nature of occupation of respondents may influence the way sacred forest are managed. Figure 4 below shows the analysis of respondent's occupation in relation to sacred forest in Mankon.

The data in figure 4 above shows that, majority of the respondents (39%) reported farming as their major occupation. This shows that farming is an important economic activity in the study area. Farming is followed by teaching 26%. Through follow-up interviews, it was revealed that they were all primary, secondary school teachers as well as university lecturers from the sampled quarters. 12% said they were traders.

This implies that petty trading is an essential economic activity since it serves as a supplementary source of income for the upkeep of some families in the area. Eighteen percent (18%) of the respondents acknowledged they were students while 5% of the respondents reported hunters and 7% chosed the option others. These were probably retired civil servants, artisanship and the unemployed. The low percentages (3%) of hunters were due to the strict ban on hunting, absence of game, the customary rules and regulations in forced and the fear of the kwifo juju. According to Eyong, (2010), the fear of making expensive sacrifices before hunting sacred animals or cutting trees deters many hunter from killing the animals. These results also indicates that due to the lack of access to sacred forests resources, the Mankon people were forced to search for other income generating activities to sustain livelihoods thereby reducing pressure on the SF and consequently, in the intact nature of the MSF. But however, the reported degradation suggests that sacred forest also offers a wide range of resources which could generate income such as medicinal plants, honey, NTFPs, fuel wood and bush meat. For the poor, sacred forest resources are part of a non-farm rural economic activity to those unable to obtain employment.

Poverty, Alcoholism and Land Selling Attitudes

Poverty, alcoholism and land selling were vices also identified by the respondents (20%) to affect traditional institutions, knowledge and practices in SF management. These vices were alleged to be exploited by immigrants, who easily convince these people to sell off their ancestral lands resulting in the lost traditional knowledge and practices. Enchaw and Njobdi (2013) also noted that alcohol consumption and poverty situation of the Baka were alleged to be exploited by urban poachers, who easily convince these indigenous peoples with a high mastery of the forest and its resources, to take them to forest compartments where they could exploit wildlife. Interviews also revealed that immigrants would usually respect sacred forests if they knew about them. In several cases, old immigrants now appear to play strong roles in protecting sacred forests and upholding traditional rules governing their use.

Conclusion

This investigation shows contribution of traditional institutions on the sustainable management of sacred forests. This study hopefully, brought out pertinent and useful issues relating to the matter of sacred forests management for biodiversity conservation. The study revealed that, for centuries, the Mankon people have established traditional governance, practices and endemic knowledge systems that have been managing, nurturing the integrity and complexity of sacred forests in a sustainable and culturally diversed ways. It shows that local people depend on sacred forest for their economic, physical, spiritual and socio-cultural wellbeing.

Sacred forest and trees are regarded as the spiritual home for the ancestors and more importantly a place where special species of trees for carving and construction of traditional equipments are found. Hence, through taboos, totems, cultural beliefs, harvesting methods and myths sacred forests and other natural resources are protected from exploitation. Through these systems, the Mankon people have been able to conserve and sustainably manage their sacred forests and other natural resources thereby conserving biodiversity.

Recommendations

Based on the findings of the study, the following recommendations are proposed:

Local Communities

Use the celebration of festivals as occasions to transfer traditional knowledge and practice to younger generations

Traditional rulers should participate actively in biodiversity conservation programs such as CBD and REDD plus,

Enable women to participate in, and benefit from sacred forests. Local institutions should also ensure that women are recognized as critical to the success of strategies aiming to the sustainable management of sacred forests.

Develop more substitutes to forest resources such as solar power, stoves and electricity to reduce dependence on wood for fuel and livestock breeding to provide meat instead of hunting wild game.

Non Governmental Organisations (NGOs)

Develop programs to support the needs local people for capacity building, networking, sensitisation, education, documentation and training on the potentials of sacred forest for biodiversity conservation,

Help obtain public funding for the conservation and sustainable management of Sacred Forests

-Educate local communities on the essence of Environmental protection,

The Church

Preach on proper use of gift of nature, need for tree planting and sensitize the community on natural resources management

-Preach on the importance of sacred forests for biodiversity conservation,

The Government

Train and put in place careful institutional structure to address internal conflict within communities.

Recognise the importance of traditional institutions, knowledge and practices of indigenous and local communities.

Facilitate the gazettement of sacred forests into the protected area network.

Allocate more resources, appropriate technical support and training to communities for the management of forest resources.

Revitalize and Integrate traditional management systems into Natural Resource Management policies.

The capacity of all modern and especially traditional institutions needs to be strengthened and/or developed by means of short-term and long-term conferences and workshops to fulfill these roles.

Define and implement local conventions, policies, by laws and action plans on the management of wildlife, control of hunting, communication and outreach programs for sacred forest conservation and management.

Set aside funding to support the planning, conservation and sustainable management of Sacred Forests.

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