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COLLEGE OF AGRICULTURE AND NATURAL RESOURCE MANAGEMENT

DEPARTMENT OF WILDLIFE AND ECOTOURISM MANAGEMENT

The Role of Local Institution in Forest Resource Management the Case of Debre Libanos Monastery

Senior Research Submitted to Department of Wildlife and Ecotourism management, College of Agriculture and Natural Resource, Wolkite University for the partial fulfillment of the completion of BSc degree in Wildlife and Ecotourism Management

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JUNE, 2019

WOLKITE, ETHIOPIA

ACKNOLEGEMENT

First all I would say thanks GOD for direct help me with unconditioned life all time with achievement. Secondly, my gratitude goes to thanks my advisor Melese M. (M.Sc.) and also I would say thanks my family for supports by money and other materials. Finally, I would like say thanks my class mate students and my friends, who are help me by giving information.

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Abstract

Since the forest resource of Ethiopia is under great threat. Government and non governmental organizations are trying to improve the condition. But on the ground their effort is not successful. This study concerned about the role of institution in forest management. Because currently institutions are serving as a solution for natural resource management problem in general and forest in particular. For that matter the Ethiopian Orthodox Church is playing greatest role in managing the ruminant forest resource of Ethiopia. However, this doesn't mean that the rules and regulations concerning forest management in the EOTC totally respected by the sounding communities. Rather, there is a challenge in managing the monastely forest also. In order to investigate the role of Debre Libanos Monastery in forest management different tools of data collection like: structured questioner, focus group discussion and key informant interview were held. Then the data was analyzed using SPSS program. The result indicated that Debre Libanos Monastery played the greatest role in managing its jorest resources. However, the result of the study reveled that there are good and bad practices that enhance and hinder forest management by the monastery. On the other hand one of the allributes of the community such as user group size and hetroginty doesn't affect forest management by Debre Libanos Monastery. It was also found that 'Gizit' is a very important religious value that plays the main role in management of the monastely forest. There fore, these church forests didn't come to exist just by mere chance. Results indicated that it is by the commitment of the church based on strong theological thoughts and a biblical basis. It wasfound that, most of the time, the local community respects churchforests, and considers the church as a central institution. In general, ji-om the results, it was concluded that jorests conserved by EOTC and its tradition provide an opportunity to establish conservation sites for forest resources and distribution of seedlings of indigenous tree.

Acronyms

CPRs	Common Pool Resources
EFAP	Ethiopian Forest Action Program
EOTC	Ethiopian Orthodox Tewahido Church
FGD	Focus Group Discussion
ITTO	International Tropical Timber Organization
NSAO	North Shewa Agricultural Office
PFM	Participatory Forest Management
SFM	Sustainable Forest Management
UN	United Nation
WBISPP	Woody Biodiversity Inventory and Strategic Planning Project

1. INTRODUCTION

1.1 Background

Today's world is facing an unprecedented environmental crisis of which deforestation is a typical example. The world is losing its forests at an alarming rate. All over the globe, many people now suffer from the destructive process that deprive them of the benefits from the natural resources on which they have always sustained their livelihood (Arnold, 1992). Even though, deforestation is worldwide problem, the rate of deforestation is very great for developing countries. Africa also experience the highest deforestation rate in the world. Apart from Northern Africa, East African countries show the second highest decline rates of conservation forests in the continent. Wide spread deforestation and subsequent degradation is severely threatening the natural forest resources in Ethiopia. According to EFA P the coverage of natural forest in Ethiopia has been decreasing at alarming rate, from 40 percent of the land area (50 million hectare) just before the turn of this century to 3.6 percent by the early 1980s. By 1988 it had declined to 2.7 percent (3.2 million hectare) (EFA P, 1994). The most up to date information however has been published by WB ISPP in 2004.

According to this source, about 4.07 million hectares, which constitutes about 3.56 percent of the total land area of the country is under the cover of high forest area. It has been estimated that with the present rate of deforestation, 150,000 - 200,000 ha of high forest per year (EFAP) 1994, the remaining high forests will disappeared within few decades. This had and continuous to have series consequences on various ecosystem in the country. The major problem that Ethiopia is facing includes conservation and sustainable utilization of the remaining natural forests, expansion of plantation forests and restoration of degraded lands (Tamrat, 1994).

Given disappointing result of forest conservation policies in developing countries many scholars and practitioners have shifted their focus away from state centered policies towards solution at local level (Gipson et al., 1999). The various ecosystem and species associated with local commons are often managed by way of local level institutions that regulate access and use right to resource in time and place (North, 1990) . Traditional institution includes norms and procedures that shape people's actions (Fisher, 1993) .They consist of codes of conducts that define practices, assign roles and guide interactions. Examples of traditional institution are taboo,

rituals, and other repetitive cultures. Traditional institutions, play key role in natural resource management and rural development, process at large. Many of these institutions were sustainable over periods of hundred years (pretty, 1990).

Many policy studies concerning the relationship between local institution and their role in forest management have indicate that poor natural resource management is attributed to large extent by state policies which are alleged to have interfered too much on local scene and undermined traditional institutions hence preventing these institution from playing their part in regulating resource use.

Even though, Ethiopia lost a considerable coverage of forest. Still the contribution of institutions is significant in preserving the ruminant's considerable area of forest of the country. Particularly considerable patches of forest still exist in some social institution like in Orthodox Church.

Thus the Ethiopian Orthodox Church did a lot in protecting and preserving our forest for centuries Informal institutions are established on different grounds and for various reasons, such as economic reasons (i.e., groups run common economic activities such as labors sharing during harvest seasons, informal healing and hunting (Appiah - Opoku, 1999), and religious reasons (i.e. , groups have common religions and beliefs such as taboos and sacredness (Bhagwat&Rutte, 2006; Alemayehu, 2007).

In Ethiopia religious rules and regulations that are evolved by church are playing great role in guiding the society how to manage natural resource in general and forest in particular. Some of the remaining forests of Ethiopia are located in monastery and church premises of the Ethiopian Orthodox Tewahido Church (EOTC) particularly in the central and northern parts of the country (Taye, 1998).

The Ethiopian Orthodox Tewahido Church has long history of planting, protecting and preserving of trees. If a traveler can see a patch of indigenous old aged trees in the northern highlands of Ethiopia, most probably he/she can be sure that there is an Orthodox Church in the middle. This observation is not only a recent phenomenon, but goes back many years as the event of deforestation has been occurring in the area for centuries. Many travelers on their route have observed and had an impression that old aged indigenous trees were becoming confined around churches (Alemayehu, 2005). However, nowadays the communities are penetrating into

the forest preserve of the church. Which indicate if the disturbance continues even the EOTC will not remain as is land of forest diversity of Ethiopia (Emiru, 2002).

On the other hand, in Ethiopia there are different form all institutions that are established for management of forest in the country. But even with such constraint we failed to effectively manage our forest. For that matter both institutions that are concerned in forest management and the enforcements process can be accounted. A rule serves no purpose if cannot be enforced .So enforcement mechanism IS an integral part of any institution. Rules are not always self-enforcing, and hence their enforcement cannot be taken for granted (North, 1990).

Therefore, besides the effectiveness of formal and informal rules and regulation enforcement mechanism it is also important element which either negatively or positively affects the role of local institution in forest management .Thus these researches focus on investigating the contribution of local institution in forest management in Debre Libanos monastery forest of North Shewa Zone Oromiya Regional State.

1.2 Statement of the Problem

The long duration of human settlement coupled with exploitative land use practice results in high degradation of forest resource of the northern Ethiopia. Most of the forest covered areas are cleared as a result those ruminants of forest are left behind. This is due to managing C PR is very challenging task. Hence, C PR are characterized by difficulty of excludability and sub tractability in management. In Debre Libanos monastery also the areas that had been previously governed under the monastery forest and reduced form the monastery by Derg regime; and currently they are under different management regime such as government and private. Gradually those forest resources that are under private and government lost and ruminant of tree and plantation tree of eucalyptus is left behind.

Even, those areas lost their species diversity. Particularly the government forest replaced with plantation trees of exculpates. In addition, the current privately owned forest areas lost both the diversity and density of species. Therefore once the forest resource was lost returning back the diversity of species is very difficult. As Yeraswork (1995) in such devastated areas, conserving and maintaining woody diversity has been a very challenging task, and most approaches haven't brought any significant results. Land use changes through agriculture, rural and urban development activities have led to the decline and alteration of forest resource, resulting in the extinction to wildlife species and natural areas which serve as their habitat. Tried to address some of the root causes of losses of biodiversity which directly impose forest resource management in the study area.

1.3 Objective

1.3.1 General objective

The overall objective of the study is to contribute to sustainable forest management through local institutions and examine the role of local institution in forest management.

1.3.2 Specific Objectives

- To assess the role of local institution those are relevant for forest management in study area.

- To understand important local institution values, practices and indigenous knowledge that contributed for forest management Debre Libanos Monastery.

1.4 Research Questions

Based on the stated objective the following research question will be answered the study.

- What is the role of local institution those are relevant for forest management in study area?
- What is important local institutional values, practices and indigenous knowledge that contributed for forest management Debre Libanos Monastery?

1.5 Significance of Study

This study was serve as generally, might help in different aspect to provide good in site for wildlife manager, local community, the natural resource management expertise and the society at large. The study baseline information for other researcher to undertake similar study elsewhere. The study will provide the necessarily solutions for problems of the study area. Moreover, the study have the following benefit: -to create awareness of the local communities about how to forest resources manage or conserve in the study area and to motivate the active participation of the local communities about for sustainable forest resources management.

1.6 Scope of the Study

The study is limited to the role of local institution of management Debre Libanos Monastery Forest in Northern Shewa zone, Oromia Regional State.

1.7 Limitation of study

One limitation of the study is that it was not be possible to control the attitude of the respondents during data collection. The study took into account that time and financial constraints may affect Geographical coverage of the study. This study purposes to target the selected Debre Libanos Monastery Forest.

2. LITERATURE REVIEW

2.1 The Concept and Types of Institution

The concept institution is defined by different authors differently. The term institution refers to set of rules that are commonly understood and in use, as to what is required, allowed or prohibited in a given situation (Gibson et al., 2000). This rule can be written or unwritten. They can be formal or informal. What is important in studying institution is whether the rules are in use or enforced. Institutions regulate relationship among actors in conjunction to resource. As such, they exercise enormous influence as to how, when, and by whom a resource is utilized (Gibson et al., 2000). North (1990) described institution as humanly devised constraints/rules/ that shape and guide human interactions both formal and informal. They reduce uncertainty in everyday life by providing a structure to human interaction and behavior.

The same author described; institutions reflect the prevailing characteristics of the society and consequently change and evolve over time. The agent of change, or the player, is the entrepreneur- political or economic- who focuses, according to economic theory, on potential wealth maximizations (North, 1997). Prior theoretical knowledge of CPRs suggests that human institutions are needed to prevent a "tragedy of the commons outcome" in which individual forest users pursue their narrowly defined, short term, self-interest, which ultimately destroys the resource. Collective-action institutions are needed to stymie this short-term self-interest. One of the central aims of forest-resource governance is, therefore, to provide the institutions needed to constrain the individual, short-term incentive to over-harvest. The traditional way of providing these institutions has been for the central government to introduce either command-and-control rules (prohibitions or quotas) or individual forest privatization. However, both of these traditional policy remedies have been largely unsuccessful, especially in developing countries, in regulating access and enforcing exclusion rights to forests (Gibson et al., 2000).

There have been critical debates on the difference between formal and informal institutions. The attribute of institution which is most commonly highlighted in the literature: is their degree of formality. Different institutional theories including Douglas North's new institutional economics approach classify institutions according to formality, which has led to the dichotomous itemization of 'formal' and 'informal '. On the other hand informal constraints are the norms, convention, and code of ethics that society evolves over time. These constraints are more

pervasive than formal rules (North, 1990). Informal institutions are defined as arrangements or rules of behavior such as sanctions, customs, traditions, and code of conduct (Marsh, 2003). Pejovich (1999) draw attention to the evolution of informal institutions by defining them as 'carriers of history' which have passed the test of the historical time. Other authors understand informal institutions to be extensions, elaborations, or modifications of formal ones, and hence disparage them as mere appurtenances (Elnaiem, 2004).

2.2 Sustainable Forest Management

Forest governance refers to the process of formulation ,articulation ,administration and implementation of policies ,legislation , regulations ,guidelines and norms relating to ownership ,access, control ,right and responsibility and practice for sustainable management of forest at local or national level .

Key principles guiding good governance of forest includes: equity and justice; empowerment and accountability;transparency; subsidiary; sustainability (KFS, 2007).

Forest governance is a critical crosscutting issue for communities living in and from forest. The need to address forest governance is this work stems from the fact that forest governance not only impact forest users' livelihoods but also the forest ecosystem .Whether forest land and resource are the property of the state of an individual or a group of individual s a combination of these stakeholders, and weather governance is actually executed, are relevant concern in this regard. The main tools of governance are institutions, here understood as the ' rule of the game' (North, 1990; Ostrom et al., 1994).

Sustainable forest management is a process of managing forest to achieve one or more clearly specified objective of management with regard to production of a continuous flow of desired forest product and service without under reduction of its inheritance values and future productivity and without undue undesirable effect on the physical and social environment (ITTO, 1998).Sustainable forest management according to the meaning to by the general assembly of UN is a dynamic and evolving concept aims to maintain and enhance the economic ,social and environmental value of all type of forest, for the benefit of present and future generations .It characterized by seven elements ,including: extent of forest resource ; forest biological diversity;

forest health and vitality; productive function of forest resource ; socio economic function of forests and legal policy and institutional framework (UN ,200 8).

Sustainable forest management is a concept which is elaborated by different scholars and institutions ' differently. However, they all focus on the same issue of utilizing resource not by reducing its future productivity. In short Sustainable forest management is the forest component of sustainable development. Thus the concept of sustainable development recognizes meeting the need of current generation without compromising the ability of future generation to meet their own needs.

2.3 All overview of forest Policy of Ethiopia

The planet is faced with looming environmental crisis in which 15 million hectares of forests are deforested every year. In order to tackle the problem government issues policies and laws those are important for socio-economics development and environment. In Ethiopia there has been a considerable degradation of forest since the turn of the century. As a response different government formulated various policies and laws. The Imperial Regime the first elaborate and modern legislation came during Emperor Haile Selassie I in 1965 G.C. Recognized two types of Ownership: State and Private. Two types of Forest do existed-State and Protected.

2.4 Factors Affecting Forest Management

2.4.1 Characteristics of Forest Resource: Excludability and Sub tractability of Forest Resource

Forest resource share the attribute with many other resource system that make difficult their governance and management in sustainable, efficient and equitable manner (Ostrom, 1999).

Most scholars who study the institutional arrangement for natural resource governance agree that forest should be considered as CPRs since they are neither public nor private good but share the element of both .This characteristics means that forest are particularly vulnerable to degradation and over exploitation because it is difficult to exclude people from them leading to over consumption that they are ' subtract able 'resources (W inter, 1998; Ostrom et aI., 2002).Forest commons are forests used in common by a large number of heterogeneous users. Essentially, they are forests for which the boundaries of the resource, the identity of the user

group; and property right to benefits from the resource as well defined (Chhatre and Agrawa I, 2008). A very useful way of charactering forest resource as a type of resource is based on excludability and subtracts ability criteria. Excludability refers to the cost of preventing others from gaining access to the resource. Subtract ability on the other hand refers to weather the use of resource by on individual reduces the amount and availability to others (PFM , 2007).

On the other hand forests as common pool resource are sub tractable in consumption. Common pool good are also subtract ability in consumption (like private goods), which means they can be depleted .Without institutional mechanism that a dress excludability and sub tractability then ,common pool resource are essentially open access resource available to anyone very difficult to protect and very easy to deplete (Me Keen, 1996). Both excludability and sub tractability are in turn influenced by other variables, Community including size of the resource, clarity of boundaries and the technology used to remove resource (Ostrom, 1990).

2.4.2 Attribute of the: Size and Hetroginty of the User Groups

The major attribute of the community related to forest management are heterogeneity, size and dependency on forest resources .These all are the attribute of the community which either positively or negatively affect the possibility of success of management of forest.

There are different argument about size and Hetroginty as they influence the likelihood of the success of self-organization for managing forest resource. Useful variable to analyze actors' behavior in collaborative arrangements usually involve their level of dependence on resource and also the level of knowledge available ,as these have bearing the incentive to manage the resource. Such variables as the size of the community, the extent to which the community is homogeneous, proximity to the resource, perception of risk, and prior experience in collective action are crucial elements that directly affect success (PFM, 2007). According to Hardin (1982) one of the problem of focusing on size of group as a key factor is that many variable change as group size increases. There, are two groups of argument: one group is proof small size and others favor large size of user group as precondition of the success of organization in forest management.

2.5 Rule Formation and Rule Enforcement

Many studies advocate that users must participate in formulating rules concerning forest management. They assert that participation of users enhance success in managing forest resource. Successful institutions depend on the ability of users to devise rules for access to and

maintenance of a common pool resource (Stern et al, 2002). Repeated studies in different parts of the world have shown that when the users of a common-pool resource organize themselves to devise and enforce some of their own basic rules, they tend to manage local resources more efficiently than when rules are externally imposed on them (Tang 1992; Wade 1994; Baland and Platteau 1996).

Research done concerning the participation of user group in rule making also strengthened these points which is users must participate in rule making processes.

Accordingly, when the users themselves have a role in making rules ,or at least consider the rules to be legitimate ,they are frequently willing to engage themselves in monitoring and sanctioning of uses consider illegal , even of public property (Ostrom and Negendra , 2006).

2.5.1 External factor

External factor that are the provision of the action are in the land consist of biophysical and material conditions, attribute of the community and rule in use.

1. The Biophysical Environment: Characteristics of forest resource

Characteristics of forest resource system fall under a broad set of biophysical variables. They are set of boundary conditions within which humanly devised rules of the game must be situated .Some of the most commonly cited resource characteristics relevant to effective governance of forest common are size of the resource system, its boundary, whether the resource is mobile ,the extent to which resource unit can be stored ,rate of predictability of flow of benefit from the resource system ,and ease of monitoring resource conditions especially excludability and subtract ability (Argwal, 2007).The physical conditions set the stage for the community attributes.

2. Socio economic condition: Attribute Of the Community

Attribute of the community are important factor affecting the composition of action arena. When resource users from common pool resource share a common set of value and work together with one another in complex set of arrangements ,the probably of developing adequate rules and norms to govern the resources are much greater (Ostrom , 2006) .

3. METHODOLOGY

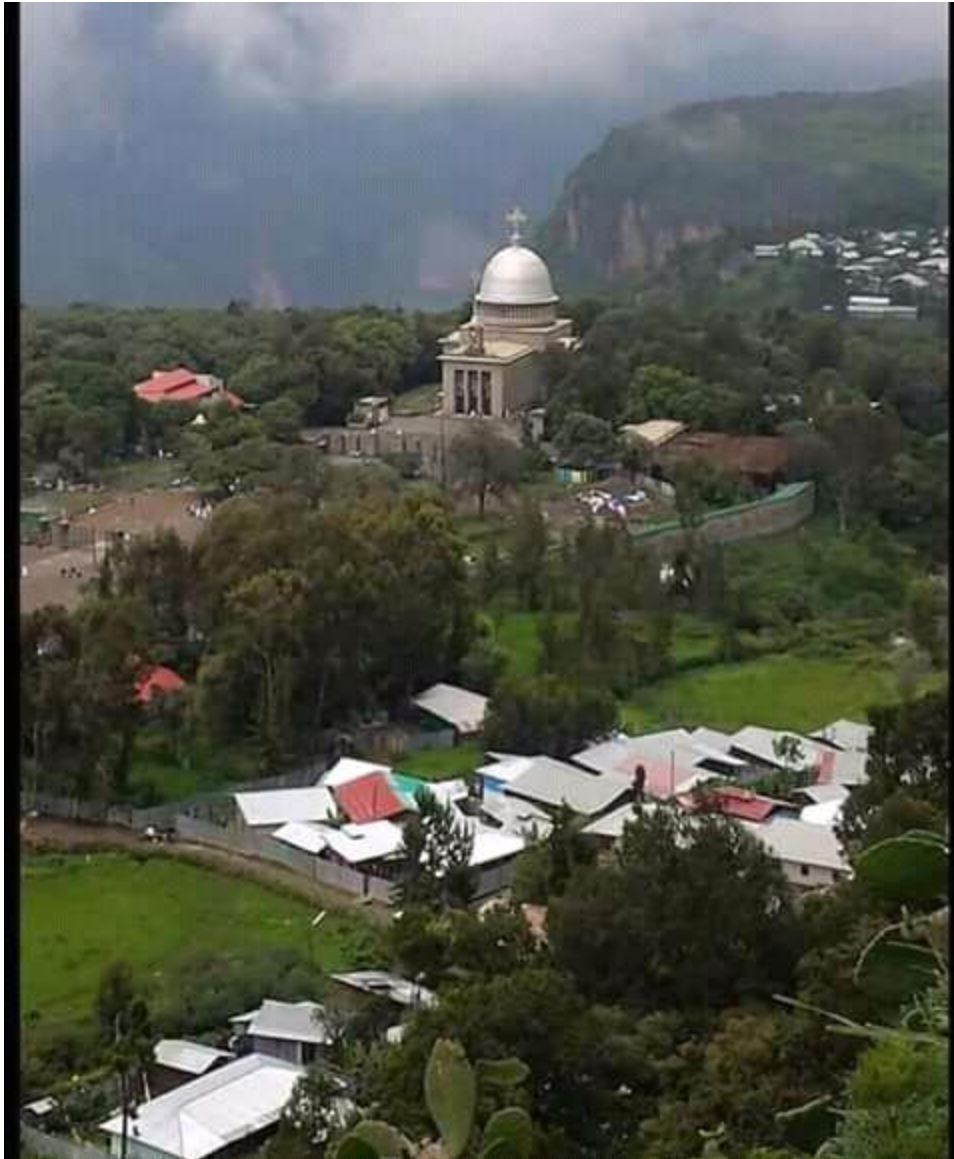
3.1 Description of Study Area

Location

The study, Debre Libanos Monastery, is located at 104 km North West of Addis Ababa in the North Shewa Zone of Oromia regional State. It is located at 2400 m Altitude whilst the rim of the valley rises to over 2560 m. Its geographical location is 09°41 ' N, 38°51' E. The total forest covered area of the Debre Libanos monastery forest is 5680 hectar. The monastery is situated at the edge of the highland plateau on the flat ground below the first escarpment of the Jama gorge. The sides of the gorge descend in a series of parallel escarpments towards the river. The forest at Debre Libanos Monastery is one of the few remaining dry afro montane forest (NSAO, 2000).

Climate

The mean annual rainfall is 1200 mm, and there are five rainy months, May September, with a peak in July. Mean annual temperature 23°C. Mean length of dry season(s) is 4 months (NSAO, 2000).



3.2. Sampling techniques and sample size determination

The study was carried out through purposive sampling technique by selecting respondents from the local people and from the target population, purposive sampling conducted through purposively selecting the target population to get more accurate data for our research study. The researcher whose study is the role of local institutions in forest resource management in Debre Libanos monastery. Three kebele from the surrounding of Debre Libanos monastery were selected purposively based on the proximity and adjacent to the monastery. 50 respondents from the three kebele were selected randomly. Lastly structured and pre-test questionnaires were administered to

the sample farm households in developed, to collect data on the role of local institution in forest resource management in Debre Libanos monastery. The sampling size of the study whose be determined based on formula adapted from Yamane (1967) as follows.

3.3. Data Collection Methods

Data were collected both primary and secondary way about in the role of local institution in forest resource management in Debre Libanos monastery. Based on those methods, this data whose collect different information or data for our outcomes

3.4. Primary data collection

The primary was collected through interview, questionnaire and field observation.

3.4.1. Questionnaire

This questionnaire who's used for the data collection from respondents, local institution and manager offices. Both closed and open end self that questionnaire items distributed to research sample. Under this, research questions whose distribute those question for the total of 50 respondents that means to collect data primarily by preparing survey question (both open and closed ended) for the key informant and house hold about in the role of local institution in forest resource management in Debre Libanos monastery.

3.4.2. Field observation

Field observation whose use about the role of local institution in forest resource management in Debre Libanos monastery. The researcher whose study about the role of local institution in forest resource management in Debre Libanos monastery by went to field or trip to observ

3.5. Secondary Sources

Secondary source of data whose use in order to clear our work getting experience, for example, Newspaper, Magazine, Journal, Books and Internet. This studies whose collect more information about the impact of human activities on wildlife development in GSNP by secondary data such as from document, journal, internet, website, published and unpublished data and other different books.

3.5. Data Analysis

The data were analyzed by using simple descriptive (qualitative) method and quantitative (numerical) method. The study whose interpret the data based on the survey questionnaire,

interview and filed observation. The data whose analyzed by using simple descriptive statistics such as mean percentage and the data whose presents on tables ,charts ,picture and percentage also further represented by using grapes and other diagram in order to analyses more information about our researches

4. RESULT DATA ANALAYSIS AND DISCUSSION

4.1. Demographic Characteristics

From the total respondents of householdsthe most of the respondents are male (74%) and the least respondents is female(26%).From table 1 below the total sampled household respondent ofmarried (20%), unmarried(30%), windowed (24%),and are divorced(26%).Similarly, the age of the respondent between 18-30(24%),31-42(38%),43-52(28%),and above(10%).

Furthermore, the Education status of the respondents primary school (30%), secondary school (20%), diploma employees (26%), and writing and reading (24%).

Table 1: Demographic characteristic of respondents (n=50)

Demographic character	Category	No of respondent	Percent
Sex	Male	37	74%
	Female	21	26%
Age	18-30	12	24%
	31-42	19	38%
	43-52	14	28%
	Above 52	5	10%
Marital status	Married	10	20%
	Unmarried	15	30%
	Windowed	12	24%
	Divorced	13	26%
Education status	Primary school	15	30%
	Secondary school	10	20%
	Diploma employees	13	26%
	Writing and reading	12	24%

The age structures of the sampled household head indicate 61.5% of the respondents are between 20-50 years old as well 38.5% of the respondents are above 50 years old. There is a considerable younger and productive force in the locality. But the number of unproductive and older age population is also significant. According to the input from focus group discussion, there is much number of older age population in the locality because it is the older age group of people who want to devote their life for spiritual purpose.

The ethnic background of the sampled household survey shows that 81.5%, 15.1% and 3.4% as Amhara, Oromo and Tigray respectively. According to the input from discussion with key informants the reason behind the above reality is that the settlement in Debre Libanos monastery is evolved due to religious reason. For that matter, it is the immigrant from Amhara region that historically founded the area. As the settlement is evolved because of religious and spiritual reason, 100 percent of the sampled households are followers of EOTC.

4.1.2 Socio-economic Structure

4.1.3 Income of the household

The trend of household's income in the study area. Income of the household shows that nearly half of the respondents are getting relatively low income means less than 500 birr per month. Out of this group of people about 22% of them are getting no income and below 100 birr. In addition, 25% are getting between 100 and 500 birr. The null income groups of the sampled households (10%) who do not have a fixed amount of monthly or yearly obtained income rather they occasionally get some amount of income. From this we can conclude that most of the local communities are getting insufficient income for life. On the other hand, those who doesn't get fixed amount of income (10%) are mainly rely on agriculture whose income difficult to explain in terms of money.

4.1.4 Source of Livelihood of Sampled Household

There are diversified source of income for livelihood option of the local community in Debre Libanos monastery. Like other rural part of Ethiopia, most of the local community use diversified subsistence livelihood option for survival. Subsistence farming is the dominant occupation or source of livelihood practiced by majority (40.3%) in the area. Subsistence farming is production agriculture crop and animals for daily consumption or production. In subsistence farming production is hand to mouth.

Table 2: Occupation of the household head

Occupation	Frequency	percent
Priest	5	10%
Deacon	9	18%
Monastery's servant	12	24%
Guard	6	12%
Civil servant	6	12%
Farmer	5	10%
Trader	7	14%
Total	50	100%

Source: own survey, 2019

As the locality is a spiritual place, the most dominant Occupation of the household head is Monastery's servant (24%) and the least Occupation of the household head is Priest (10%). Therefore, for those groups of individuals the monastery provides daily food and monthly salary. Each individual obtain different amount of income in accordance to his/her services to the monastery. In addition the monastery also give them shelter.

Table 3: The changing total area coverage of the monastery all other forest over the past years

View of Monastery Forest Other Forest respondents'	Frequency	Percent
Decreasing	15	30%
Increasing	25	50%
no change	10	20%
Total	50	100%

Source: own survey, 2019

Plantation tree has increased over time. But for indigenous trees like 'Weyra ' (OleaEuropeansspcuspidata) and 'Tid '(Podocarpusfalcatus (Afrocarpusfalcatus) there is no big change.

4.2. Attitude of local community towards planting tree

The response of house hold survey indicated that the household head has positive attitude towards planting trees. According to key informants trends of planting trees in the study area is very high in 2000 it could be because of the propagation of two trees for the second Ethiopian millennium.

According to the response of key informant interview, the great initiation of the monastery is the main reason behind the good practice of the local community towards planting trees. Thus, the monastery for its formal member, who live and supported by the monastery, provide a fixed amount of land (4m*4m) for each individual to plant tree over it annually .Therefore, through the initiation of the monastery formal members are able to plant tree annually in that specified land. This is the reason why most respondent answered they are plant trees and has positive attitude towards planting tree every year since *2007/2008*.

In deed the sampled house hold survey also further strengthened the positive attitude of the household in planting tree. When we see the specific number of tree where the sampled household planted, the majority of the respondents has the experience of planting more than 50 trees in the past four years (*2007/2008*) .Only the rest have planted less than 50 seed lings of tree. But the local communities experience the least in terms of planting tree in these year (*2018/2019*) The reason behind these according to the FGD is because the data is collected at the beginning of the year. According to the result most people including formal members of the monastery do have experience of planting tree at summer season of most part of Ethiopia (June, July, and August).That is why there was least practice of planting tree in this year (*2018/2019*) . But this research focuses on the local practice those planting trees from the year *2007/2008* onwards.

Table 4: The respondent's major energy source for cooking

Source of energy	Frequency	Percent
Wood	5	10%
Charcoal	9	18%
Kerosene	6	12%
Electricity	9	18%
wood and charcoal	7	14%
charcoal and kerosene	6	12%
wood and kerosene	4	8%
wood, charcoals and kerosene	4	8%
Total	50	100%

Source:ownsurvey data, 2019

About 10 % of the sampled household use source of energy such as: wood and charcoal that are directly related with forest as a main hold .That is the source of charcoal is also from trees mainly in the government or community forest .Thus, both fuel wood and charcoal are obtained from trees in the forest .In addition 18% of the sampled household also utilize combinations of the above fuel energy source with kerosene. In other words this group of respondents uses fuel wood and charcoal as well as kerosene as a source of fuel wood. Even though, their exact consumption is not known they rely on forest. Generally, 12 % of the surveyed household either totally or partially relied on fuel wood as a source of energy, even though the clear consumption percentage of kerosene is not specifically known. Therefore, only 18 % of the sampled household is not depending on forest as source of energy. Which indicates these percent of the total household either totally consume energy source out of forest or not dependent of forest resource. That means only this small percent of the sampled household use kerosene and electricity as energy source for daily consumption.

Table 5: The source of fuel wood for sampled household

<i>Place Where they obtained energy</i>	<i>Frequency</i>	<i>Percent</i>
<i>Market</i>	<i>18</i>	<i>36%</i>
<i>Church forest</i>	<i>19</i>	<i>38%</i>
<i>government forest</i>	<i>13</i>	<i>26%</i>
<i>Total</i>	<i>50</i>	<i>100%</i>

Source: own survey, 2019

Nevertheless, as we observe in the table about 36% of respondents obtain their fuel wood from market .Besides, 26% are also getting from government forest .So, forthe above two of sampled household either directly or indirectly they are utilizing fuel wood of government forest. Because, as key informants responded the main source of fuel wood for the market is also obtained from the government forest ill distant areas .For that material, these people collect the fuel wood and sold it to thenearby town around the monastery. As a result this is the main reason behind the decline of forest coverage of government forest in many part of Ethiopia in general and for the locality in particular.

4.3. Major Attribute of forest Resource

4.3.1. Excludability and Subtract ability of Forest Resource

Forest is part of common pool resource characterized by difficulty of excludability andSubtract ability. Excludability refers to the cost of difficulty to exclude others from the use of or access to resource (Mc Keen, 1996). In line with the above two attributes of forest resource, the study area Debre Libanos Monastery forest is also faced the problem of excludability and subtract ability. Naturally forest are characterized by difficulty of exclusion .It is one of the major attribute of forest as a natural resource. Even if, the monastery is trying to protect the forest, similar to other management regimes of forest resources the monastery also threaten by the problem of difficulty of excludability of local community from using it.That means though the monastery tried to do its best in order to exclude people from not using forest resource still there is violation of the rules and regulation of the monastery concerning forest management. The sampled house hold survey reveals that still there is violation of rules concerning monastery forest management.

Table 5: Violated of rules conceding monastery forest

<i>Forest rules are violated</i>	<i>Frequency</i>	<i>Percent</i>
<i>Yes</i>	<i>33</i>	<i>66%</i>
<i>No</i>	<i>17</i>	<i>34%</i>
<i>Total</i>	<i>50</i>	<i>100%</i>

Source: own survey data, 2019

The response of sampled household, illustrate that almost two-third of respondent assert that there is violation of rules and regulation regarding forest management .In contrast, one-third of the respondent disagree with such view. According to the sampled household survey 66 % of violation of rules and regulation concerning monastery forest management is by people who live around the monastery that means up to 5 km radius from the monastery. Besides, for the cause why these people are frequently violating rules and regulation concerning forest management the key informant interview indicated; it is due to conflict between the monastery and the local communities. Because the monastery argues that: this is a spiritual place therefore, everything that disturbs the holiness of the place should be avoided .As result; the monastery is asking the regional government in order to provide compensation land in other part of the region. Nevertheless, the local communities do not want to leave the area .So, as revenge the local communities are distracting the monastery forest, even they are devastating the newly planted seedlings from the monastery forest. In fact the general reason why people in the locality are frequently violating rules and regulation for monastery forest management; as the house hold survey proves (34%) is due to shortage of fuel wood in the locality.

These students of the monastery neither do not have income nor get cooked food from the monastery Thus; they frequently misuse the monastery forest for source of fuelwood. In genera for both group of people who frequently violet rules and regulation concerning monastery forest management reasons are indicated in sampled household survey. Based on the response of the sampled households there are different reasons for violation of rules and regulation of the monastery concerning monastery forest management

The response of the household survey illustrates that among the specific reasons for misusing of the monastery forest management, the lion share (34%) as indicated is because of shortage of

fuel wood in the area. Out of the total respondents 15% assert that the cause for violation of rules for monastery management is due to importance of diversified indigenous plants for medicine, for making furniture, etc. in the monastery forest.

On the other hand, 36.0% of the households surveyed proved all listed reasons is possible answer. This indicates that there is no single reason but all are interrelated and one affects the other. That means, one person may violate rules and regulation for managing the monastery forest for fuel wood, medicine, for making furniture, because of insufficient income and lack of bound fences. In turn their having, low income also raised the interest of the people to look for forest resource in order to support livelihood. But some studies consider lack of fence or boundaries as reason that encourages people to use the *monastery* forest illegally. In other words, it creates open access for entering to forest resource. However, the sampled household survey of this study doesn't infer it as basic reason. As observed lack of boundary is the second least (5.5%) reason in terms of concern by sampled household responses. Therefore, demarcation or fencing by itself doesn't totally exclude communities from using forest.

In fact the monastery forest coverage is very large 5680 hectare and encircled by people who live in and around the monastery. For better protection of the monastery forest, a number of guards are involved, but still nothing prevent difficulty of excludability to be happened. This is mainly due to; strict protection by itself could not exclude everybody from using forest.

DISCUSSION

The discussion also revealed that problem of difficulty of excludability is much greater for plantation tree of the monastery. The religious value 'Gizit' is effective means of preserving indigenous trees of the monastery. However, the monastery could don't exclude the local community from using its plantation. On one hand, it is the plantation which located closer to the local community or highly encircled by those who mainly violate the monastery rule of forest management. In line with this, forests as common pool resource are subtractable in consumption. Common pool good are also subtracting ability in consumption (like private goods), which means they can be depleted. Without institutional mechanism that address excludability and subtractability then, common pool resource are essentially open access resource available to anyone very difficult to protect and very easy to deplete (McKeen, 1996).

For that matter, indigenous trees in the monastery forest like 'Agam' and 'Girar' are decreasing in coverage; as the monastery is using them as source of fuel wood for cooking. According to the key informant interview it is a surprising to hear that the Monastery use daily 40 head load of Agam and Girar for baking food for 805 user groups who live within the Monastery. Roughly is about 14,600 head load consumption of such trees per year which seems below the regeneration capacity of such trees per year. Because, with in the monastery forest there are more cleared areas that previously covered with such species. Since the monastery utilizes mainly two species for daily cooking of its formal members, as a result its forest resource is depleted. Furthermore the value of the monastery forest is also declined in turn subtracted. Because, as the key informants described utilization of those species is beyond the regeneration capacity of those species.

4.3.2 Size and Boundary of the Forest

Size of forest resource is important factor which affect the likelihood of managing the forest resource effectively. Many researchers who studied about forest as a natural resource favor medium sized forest as best .Because, they assert that it is the medium sized forest resource that is suitable for organizing user groups and delimiting the boundary of forest resource. The monastery forest is not exactly known because different source estimate the areal coverage of monastery forest in different figure. According to the written source of the monastery the land coverage of the monastery now is around 5680 hectare .That means, the size of the monastery forest is large but the boundaries are not fenced.

According to the result of focus group discussion it is not the size of the monastery forest which brought the difficulty in managing the monastery forest. They indicated that lack of clear demarcation and fences on the forest resource of the monastery, as reasons behind such problem (misusing the monastery forest). For that matter, fencing and marking of the monastery forest is part and parcel of the solution of misusing ofthe monastery forest.

4.4 Major Attribute of the Community

4.4.1 Heterogeneity, User Group Size and Dependency on the Forest

The major attribute of the community related to forest management are heterogeneity, size and dependency on forest resources .These all are the attribute of the community which either positively or negatively affect the possibility of success of self-organization of user group in order to manage forest resources. Groups can vary along a diversity of dimensions including their cultural backgrounds, interest and endowments (Balnd and Plateau, 1996). According to Ostrom (2005) values and behavior accepted by the society in question, the common understanding that the potential participant share, or do not share, about the structure of the action arena, as well as the size and composition of the community are all important factors. The research tests some of attribute of the user groups. These are religious background, income, ethnicity, age, etc. Religiously, all the user groups are followers of Christian or Ethiopian Orthodox religion. Therefore, they are homogenous in terms of religion.

In terms of property also no one in the user groups of the monastery forest is allowed to have his/her own property. The user groups are people who formally recognized members of the monastery get almost equal amount of income. Thus, when everybody came to the monastery, it is expected that he/she should come there by abandoning of his secular life of that person. Therefore, if he/she has her/his property will be confiscated by the Monastery. So, there is no much variation in the amount of income obtained by user group. Therefore they are homogeneous in terms of wealth. They all live together; eat together and work together in order to protect the Monastery foresting sustainable way.

In contrast, there is an ethnic difference in the user group. However, in the religions institution like Debre Libanos Monastery slick data about ethnicity cannot be obtained since the members do not want to exaggerate such differences as a considerable one. According to Ostrom (1999) When the interest of user different achieving a self-governing solution is particularly challenging. The result of focus group discussion however illustrate, heterogeneity specially having different religions, different educational background, difference in culture, age is not a problem in management of Debre Libanos Monastery forest. Because, people of the monastery are brothers and sisters in God and there is no difference so they always work together peacefully as well they all stand together in order to protect the Monastery forest. Many scholars who study the role of institution in forest management outlined size of user groups as an important factor that affect the successes of organization for forest management .However, still none of them made clear demarcation what is small or large size should hold. Studies give emphasis for size as an important factor which affects the likelihoods of successes of organization .According to Chamber (1974) and Hardin (1982) one of the problem of focusing on size of group as a key factor is that many variable change as group size increases. Even though, there is no fixed number that smaller or larger group must hold, Debre Libanos monastery Forest user groups must belong to larger size user groups.

Because the number of these formal members of the monastery who has the right to use the monastery forest is more than eight hundred, actually this is large size. Nevertheless, this large number is not a problem for managing the monastery forest rather it is serving as another input for different activities done by the monastery regarding forest management. Since monitoring of the monastery forest is done by the monastery itself, having larger group size is important for

facilitating monitoring activity of the monastery. Therefore, as the members of user group increases there is a possibility of increasing the number of guards who protect the monastery forest which in turn is additional input for better management of the monastery forest. Similar study done assert that large size add additional input to forest management(Isaac et al., 1997), If the cost of a forest, say a sanctioning system remain relatively constant as group size increases, then increasing the number of participants brings additional resource that could be drawn up on to provide the benefit enjoyed by all.

In Debre Libanos monastery, however, having large size is not a problem or it doesn't negatively affect coordination level of the monastery forest management .According to the result of focus group discussion this is mainly due to here members of the user groups are spiritually tightened together for one objective .So, they consider managing forest as one of their spiritual duty. People in Debre Libanos monastery are not real dependent on forest resource of the monastery. Since the monastery does not allow either the communities monastery or the local communities to use forest. With such imposition of restriction no one is allowed to use the monastery forest except the monastery. Thus, through restricting the use right of anyone, the church is able to preserve the forest. In addition, the forest of the monastery is highly protected by the guards. In order to protect the forest more than twenty guards are involved and they protect it in different shifts of day and night. They are not protecting the whole forest in the same emphasis. More emphasis is given for protecting indigenous trees and the forest area which is encircled by local community.

Table 6: Right to harvest, view age all decide over the monastery forest

<i>View of respondents' about heir right in the monastery forest harvest, manage and decide</i>	<i>Frequency</i>	<i>Percent</i>
<i>Allowed</i>	<i>38</i>	<i>76%</i>
<i>Not allowed</i>	<i>12</i>	<i>24%</i>
<i>Total</i>	<i>50</i>	<i>100%</i>

Source: own survey data, 2019

According to the sampled house hold survey 76 % of the respondent assured that they do not has the right to harvest, manage and decide over the monastery forest. The house hold survey indicated that from the total respondent only has the right to harvest, manage and decide over the monastery forest. Thus only the user groups, who are formal members of the monastery community, are directly dependent on the monastery forest. It seems 24% of the response may belong to user groups of the respondent household who has the right to harvest, manage and decide over the monastery forest. Because, these people obtain their daily food from the monastery which is prepared by fuel wood, it is found in the monastery forest. Therefore it is only the monastery that uses fuel wood from its forest in order to cook the food for those forma I members of the monastery.

5. CONCLUSION AND RECOMMENDATION

5.1 Conclusion

The role of local institution in Debre Libanos Monastery forest management studied in the paper. Like other studies I also find a positive relationship between strong local institution and better forest conditions. This result fits well with existing theory and research (Gibson et al., 2000). For its increase the positive attitude of the monastery community is accounted. As the study by Alemayehu Wassie (2005) indicated that the positive attitude to the resources protected by the church and the acceptance of the church tradition is thus an opportunity for forest conservation. Therefore, the isolated remnant forests of churches, with their higher woody diversity are a potential for in situ and ex situ conservation sites.

In addition, the religious value Gizit is serving as an effective means of protecting the monastery forest. Besides, the monastery is also protecting the forest with its guards. But the forest resource of the monastery is highly challenged and there is misuse of the monastery forest by people who live in and around the monastery. These church forests, however, are threatened by cause disturbances, such as cutting, grazing mainly cows and goats, drought and fire occur at increasing intensity and frequency. Ex closures promote restitution (Emiru Birehane, 2002). Besides, the monastery's approach of strict management of the forest forbids over utilization of the forest. However, utilization of two species of the forest *Agama* and *Acacia* for daily fuel wood forest result in destruction of such species of the forest. Heterogeneity and group size are not the problems in management of the monastery forest. Since, people in Debre Libanos monastery stood for common objectives. They assume themselves as brothers and sisters in God. So this attribute does not prevent their level of cooperation. Thus, even though people who from diversified background are living in the monastery, it does not affect their level of cooperation in order to manage the forest in a better way.

In general, the local people of the Debre Libanos Monastery are not dependent on the forest resource of the monastery. That is why the monastery forest is showing progress overtime while the condition of the government forest worsened over time. The monastery as an institution is playing the greatest role in administering, planting and protecting the forest. Thus, it is the informal institution which plays the major role in managing Debre Libanos Monastery forest. In fact, the formal governmental organizations role is limited to providing seedlings and enforcing rules in the courts. Therefore, the major contribution of this study is to show how strong informal

Institutions are contributing for management of forest in Ethiopia. So, strengthening the capacity of such institution is considered as important in order to manage the forest resource of the country in sustainable manner.

5.2. Recommendation

Based on the findings of the study it is useful to suggest the following points as recommendation.

- Recognizing the role of local institutions in forest management is very crucial in order to protect forests sustainably.
- Building the capacity of informal institutions such as church enables its role in forest management sustainable.
- Training church scholars about scientific way of preserving forest and reproducing new seed lings of the tree.
- Providing new technology that enables sustainably forest management of the monastery. Enhancing the awareness of the local community in order to involve in administering, protecting, planting, etc. of the monastery forest is very important.
- Attention should be given to religious values like 'Gizit' as important religious values that enable forest management practical.
- Government have to share the traditional churches knowledge , practice and value as an essential lesson for forest management as well integrated it withmodern thinking of forest management.
- The church area must be well demarked and fenced in order to stop furtherencroachment by the local community.

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APPENDIX

WOLKITE UNIVERSITY

COLLEGE OF AGRICULTURE AND NATURAL RESOURCES

DEPARTMENT OF WILDLIFE ECOTOURISM MANAGEMENT

Personal Information

I am FiraolTeferi graduate student at Wolkite University. Currently I am conducting a research study on **The Role of Local Institution in Forest Resource Management the Case of Debre Libanos Monastery**. The case of in partial fulfillment of the requirements for the Degree of Bachelor of science of Wildlife and Ecotourism management. I require your help to spend some minutes of your time with us for interview. The purpose of this Interview is to gather information about the role of local institution in forest resource management in the case of Debre Libanos monastery. I can assure you that any information that provide in this interview will be kept confidential. Your kind cooperation would be greatly appreciated and is great importance for the successful completion of this study. Thank you!!!

Questionnaires for Households/local community

Interviewer ----- Date of interviewer -----

Demographic Characteristics of Respondents

- A) Name of the monastery forest manager _____
- B) Age (in year)

1. <10 2.10-20 3.20-35 4.>35

C) Sex 1. Female 2. Male

D) Marital status

1. Single 2. Married 3.Divorced 4. Widows

E) Educational level

1. Illiterate 2.<5 3) 5-10 4.Some graduated

F) For how many years you were in this forest?

1. For <1 month 2. For <1 year 3.For <5 years 4.>10years

G) What do you know about past information about monetary forest?

1. Quantity types of monetary forest plant?