Indigenous Knowledge of Oromo on Conservation of Forests and its Implications to Curriculum Development: the Case of the Guji Oromo

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This is to certify that the thesis prepared by Desalegn Fufa, entitled: *Indigenous Knowledge of Oromo on Conservation of Forests and its Implications to Curriculum Development: the Case of the Guji Oromo* and submitted in fulfillment of the requirements for the degree of doctor of philosophy in Curriculum Design and Development complies with the regulation of the university and meets the accepted standards with respect to originality and quality.

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ABSTRACT

Indigenous Knowledge of Oromo on Conservation of Forests and its Implications to Curriculum Development: the Case of the Guji Oromo

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This study was designed to investigate the indigenous knowledge of Oromo on conservation of forests and its implications to curriculum development with particular reference to the Guji Oromo. A qualitative case study was employed in the study. The necessary data were collected through interviews from the purposely selected *Abbaa Gadaa*, elders, forest and wildlife experts, culture and tourism experts, curriculum developers, students, teachers, development agents (DAs), Kebele chairperson and inhabitants around the forests. In addition, purposely selected forest sites, agricultural fields, nursery sites, ritual areas and dwellings were observed to collect first hand data. Content analysis was also carried out on elementary school textbooks (grades 1-8) to identify the inclusion of indigenous knowledge of the Guji on conservation of forests in the books.

The findings of the study showed that the Guji Oromo know the sustainable use of forests and the related natural resources such as grass and water. They use dead trees for firewood and branches for construction and different purposes rather than big and young growing trees. They give care for the apex or growing parts of plants and for flowering and seed bearing trees. They often settle out of forests. They use grazing lands and water bodies rotationally. The Guji make buffer zone to halt the expansion of fire beyond the needed area and use water to extinguish the fire after using it particularly in harvesting honey. Based on their beliefs, the Guji protect ritual areas and care for growing and big trees as they do for their children and elders. Forests are conserved for their use as shades for cattle, human beings and coffee production, as sources of wood, fodder, water,

medicinal plants, wild food, flowering plants for beekeeping, and as essential resources for increasing soil fertility and maintaining moderate temperature. Much of the conservation of forests and the related resources is based on the utilitarian values of the resources and the beliefs of the society that proved the indigenous knowledge and culture cherished by the Guji Oromo is forest friendly.

The study indicated that the laws in the *Gadaa* System and the associated norms of the society and the sanctions imposed on those who break the laws and the norms play a significant role in conservation of forests in Guji. However, with the conquest of the Guji and the consequent repressive rules imposed on them by the Ethiopian rulers, the *Gadaa* System and the embedded indigenous knowledge of the society on forest conservation appear to have been greatly deteriorated. The immigrants attracted by gold mining industry, agricultural activities, commerce and the virgin forests seem to have affected the indigenous knowledge of the Guji Oromo on conservation of forests and the related resources (water and grass).

The content analysis of elementary school textbooks also revealed that modern education has rarely included the indigenous knowledge of the Guji and it appears to have contributed its part to the weakening of the indigenous knowledge of the society. Moreover, the modern participatory forest management practice seems to be at its initial stage in Guji. Consequently, it is not at the stage of involving indigenous knowledge of the society and making the society benefit from the forest resources significantly. Despite these unfavorable situations, the Guji are remarkably resilient to maintain the *Gadaa* System and its conservational values. Hence, this study recommends the establishment of an indigenous knowledge center that works out how to revitalize the valuable indigenous knowledge of the Guji Oromo and applies it in modern conservation practices. This measure includes the inclusion of the indigenous knowledge of the Guji Oromo on forest conservation in the curriculum and in modern forest conservation activities.

Key Words: Indigenous Knowledge, Forest Conservation, Guji Oromo, Curriculum Development

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ACRONYMS AND ABBREVIATIONS

AAU	Addis Ababa University
BBO	Biiroo Barnoota Oromiyaa (Oromia Education Bureau)
BBBG	Bosonaa fi Bineensota Bosonaa Booranaa fi Gujii (Borena-Guji Forest and Wildlife Enterprise)
BBIDO	Biiroo Barnootaa fi Ijaarsa Dandeettii Oromia (Oromia Bureau of Education and Capacity Building)
BGFWE	Borena-Guji Forest and Wildlife Enterprise
CBNRM	Community Based Natural Resource Management
DAs	Development Agents (agricultural)
EFAP	Ethiopian Forestry Action Program
EPRDF	Ethiopian Peoples' Revolutionary Democratic Front
ETP	Education and Training Policy
FAO	United Nations Food and Agricultural Organization
FC	Forest Conservation
FDRE	Federal Democratic Republic of Ethiopia
IAD	Institutional Analysis and Development
ICDR	Institute of Curriculum Development and Research
IEF	International Environment Forum
IFLEA	Institution for Forest Resource and Livelihood Management in East Africa
IK	Indigenous Knowledge
ILO	International Labor Organization
IP	Indigenous People
IPA	International Phonetic Alphabet
IUCN	International Union for Conservation of Nature
MIDROC	Mohammad International Development Research and Organization Companies
MOE	Ministry of Education
NGOs	Non-governmental Organizations
OBARD	Oromia Bureau of Agriculture and Rural Development

OFWEBGBO	Oromia Forest and Wildlife Enterprise, Borena-Guji Branch Office
PCCFDRE	Population Census Commission of the Federal Democratic Republic of Ethiopia
QQQQSB	Qajeelcha Qophii, Qo'annaa fi Qorannaa Sirna Barnoota (Curriculum Development and Research Unit)
SOS	Save Our Soul
SNNPR	Southern Nations and Nationalities and Peoples' Region
UN	United Nations

OROMO SPEECH SOUNDS & THEIR CORRESPONDING IPA

Consonants

Oromo	IPA	Oromo	IPA
/b/	/b/	/m/	/m/
/c/	/tʃ’/	/n/	/n/
/d/	/d/	/ph/	/p’/
/f/	/f/	/q/	/k’/
/g/	/g/	/r/	/r/
/h/	/h/	/s/	/s/
/j/	/dʒ/	/sh/	/ʃ/
/k/	/k/	/ch/	/tʃ/
/l/	/l/	/ny/	/ɲ/
/dh/	/ɗ/	/x/	/t’/
/t/	/t/	/y/	/j/
/w/	/w/		

Vowels

Oromo	IPA	Oromo	IPA
/i/	/i/	/u/	/u/
/e/	/e/	/o/	/o/
/a/	/a/		

Note: Doubling the sounds indicates length for vowels and germination for consonant.

CHAPTER ONE

INTRODUCTION

The introductory chapter of the study presents the general overview of the study including the background, statement, objectives, scope and significance of the study.

1.1 Background of the Study

It is evident that we are living in a world whose natural balance is greatly affected by human activities. As a result, the deterioration of natural resources and the very existence of human beings which depend on them have become the crucial agenda of the governments these days. Even though this issue has been raised by environmentalists for a long time, it is after its consequences have been felt in climate change (increase in global temperature, unseasonable rainfall, destructive storms, flood, drought, famine, glacial melting, to mention a few) that governments seem to have shown willingness to deal with the issue. However, the World Climate Summit in Copenhagen, Denmark, in December 2009 itself largely revealed that the representatives of developed and developing countries were found to blame one another for the destruction made to our planet rather than focusing on how to solve the problem together. In my view, both developing and developed countries have contributed to the deterioration of natural resources though the extent may actually vary. Developing countries, indeed, may have less contribution to industrial pollution but their contribution to the destruction of natural forests is no more less.

Forests play a significant role in maintaining the balance of nature and, hence, for the presence of suitable climate for human existence. They absorb carbon dioxide and change it into oxygen. They are home for varieties of wildlife; they increase the fertility of soil and protect it from erosion and help in the conservation and maintenance of water cycle. In other words, the conservation of forests indirectly assists the conservation of other related natural resources: soil, air, water and wild life. The conservation of forests,

however, does not seem to be effective without considering the indigenous knowledge of people whose livelihoods are closely associated with the forests.

The destruction of the world forests at an alarming rate has initiated the need to give attention to indigenous knowledge in conservation of forests. The study by FAO in 1992, for instance, put the rate of forest destruction at a staggering 170,000 square kilometers a year. The United Nations Conference on Environment and Development in 1992, also known as the Earth or Rio Summit crystallized the interest in the contribution of indigenous knowledge to a better understanding of sustainable development (Tanyanyiwa & Chikawanha, 2011: 132). The conference highlighted the urgent need for developing mechanisms to protect earth's biodiversity through local knowledge. In relation to this, George (1999: 79) states that, though it has a number of uses, the growing interest in indigenous knowledge is perhaps directly related to the growing concerns about the degradation of the environment. Hence, indigenous knowledge has captured the attention and respect of international scholars after the Earth or Rio Summit of 1992 (Mapara, 2009: 139). The United Nations Convention on Biological Diversity has also recognized the importance of indigenous knowledge to the conservation and sustainable use of biological diversity and acknowledges the contributions of indigenous knowledge as innovative approach to environmental studies (Battiste, 2002: 8). Concerning the value of indigenous knowledge, Tewoldbirahan asserts:

> *The fact that humans have lived in Africa for over hundred thousand years together with forests and the fact that we still have forest dwellers in Africa is proof enough for me that humans and forests coexist. More importantly, it is a proof that if we need to know how to manage forests, we should ask our forest dwellers (Tewoldbirahan 2007: xxi).*

The argument of Tewoldbirahan is that, as Africa is the origin of mankind and there are still forest dwellers in the region, it is necessary to learn from the forest dwellers how to manage forests.

The Oromo are indigenous people living in the Horn of Africa (Salviac, 1901; Asafa, 1993; Gadaa, 1999) with indigenous socio-political institution, the *Gadaa* System

(Asmarom, 1973; Tenna, 2005; Asafa, 1993; Gadaa, 1999; Mohammad, 1994), from which an insight into valuable indigenous knowledge of the society could be gained. From among the Oromo, the Borena and the Guji have relatively retained most of the traditional and original ways of life of the Oromo (Asmarom, 1973; Van de Loo, 1991; Dhadacha, 2006). The fact that these groups have not left their original territory has, most likely, contributed to the conservation of the Oromo socio-political institution, the *Gadaa* System, the abode of Oromo tradition and culture (Asmarom, 1973: 9).

However, different scholars who have done research on the *Gadaa* System rarely and roughly dealt with the Guji people (Jemjem & Dhadacha, 2011: 10). Moreover, since there is no adequate documented information about the history of the Oromo in general (Asafa, 1993; Gadaa, 1999; Tenna, 2005) and the Guji Oromo in particular (Dhadacha, 2006) owing to the repressive rule on the Oromo by suppressive regimes in Ethiopia (Mekuria, 1994; Asafa, 1993), many studies on the Oromo have mainly depended on the critical analysis of oral tradition.

Similarly, the current study has largely relied on information obtained from our living "libraries" such as *Abbaa Gadaa* (father of *Gadaa* or president in Gada institution of Oromo), knowledgeable persons, *hayyuu* and/or elders (Asafa, 1993: 15) that have rich experiences of the indigenous knowledge of the society. Even though there was a tendency to debase and consider African indigenous knowledge as useless by colonizers (Warren, 1992; Otiende, Ezaza & Boisvert, 1997), many writers on conservation of natural resources argue that indigenous knowledge of people about their environment needs to be given due consideration in any conservation effort (Warren, 1992; Gole, 2003; Muluneh, 2003; Dutt et al, 2005; Inter Press Service-IPS, 1993; Gareau, 2007; Workineh, 2005). For instance, some writers believe that the Oromo have indigenous knowledge of conservation of natural resources (Salviac, 1901; Bassi, 2003; Bassi and Tache, 2007; Kitessa, 2007; Gemedo, Maass & Isselstein, 2005; Workineh, 2005) and moral values that guide their actions (Gemetchu, 1998; Tenna, 2005; Workineh, 2005). Unfortunately, this knowledge has not been well studied and used in modern conservation practices.

The disregarding of indigenous knowledge, the emphasis given to material values and the impairment in moral values of people appear to have left the door open to odd and evil acts like corruption, nepotism, chauvinism, narrow mindedness, insensitiveness, greed and wastefulness (Tenna, 2005: 89) including the destruction of tropical forests (Shimelis, 1997). In view of this, my exposure to, and experience of, conservation of natural resources in my undergraduate geography courses and M.A thesis have triggered me to ask my childhood experiences of implicit indigenous knowledge.

When I was a child, probably about 8 years of age, I and my friend cut down a straightly growing young tree along the river bank to check our ability to cut trees and get fun of it. The other day, at night, my father asked me who had cut the tree. Expecting appreciation from him, I told him what we had done. But the result was punishment. He furiously told me that on the community meeting they had decided to curse the person who had cut the tree. Before they arrived at this final decision, they decided to go to their homes and ask their children to identify the person. It was in this process that I was found to be the culprit.

The other experience was, when I was at a high school (in grade 12). My father, my brother and I were preparing land for cultivation of *teff (Eragrostis tef).* In our farm, there was a big tree similar to "*Odaa*" *(Ficus sycomorus)* whose shade was covering a large area of the farm. I and my brother decided to cut down the branches of the tree to make the farm free. But our father said" No!" and prohibited us from executing our plan.

Now the question is, even though I have learnt about conservation in my geography, biology, and agriculture courses at the school, what has made my father more concerned about the trees than I was? Hence, it seems that the less attention given to valuable indigenous knowledge and values of our society which our fathers and forefathers have been using for a long time seems to have contributed to the destruction of natural resources including forests. The above mentioned factors have inspired me to do research on this topic.

1.2 Statement of the Problem

The destruction of natural resources and biodiversity has come to endanger the very existence of living things on earth. As history and experiences show, human beings have a very significant contribution to this destruction. As much as their contribution to the destruction, humans have to also contribute to the maintenance of the existing and the recovery of the lost natural resources. Pertaining to this, Battiste (2002: 8) underscores that "knowledge of the environment is being lost in communities around the world, and there is an urgent need to conserve this knowledge to develop mechanisms to protect the earth's biological diversity". This is also true to forests. These days, there are very limited natural forests in the world. Without the maintenance of these forests and the recovery of the lost ones, it has become difficult for the continuity of living things on the earth. As can be seen in the world, the existing natural forests which are still in danger are found where indigenous people are living, as in the case of Amazon basin in Latin America and Zaire Basin in Africa. Hence, to maintain such meager natural forests and to rejuvenate the lost ones, it needs to involve indigenous people and make use of their indigenous knowledge. This is why conservationists have been trying to give attention to indigenous people and their knowledge in conservation endeavor.

In the past, scientists concerned about forests and forest loss had identified the attributes of user communities, with their specific historical, cultural, social and economic background, to be the main determinants for depletion and destruction of forests in developing countries (Stellmacher & Mollinga, 2009: 45). Accordingly, research had focused primarily on demographic (population growth) and economic (increased market pressure) factors as the primary threats to forests. This supported the argument that endangered forests need to be prevented from the (over) utilization by an ever growing population with an ever growing propensity to extract forest resources for economic gain. This, in turn, offers justification for exclusionary forest conservation approaches, which in Africa, are often associated with nationalization of forest land (Stellmacher & Mollinga, 2009: 45). Nevertheless, after many unsuccessful attempts, it became evident that 'no go conservation' or refraining people from using forests cannot be appropriate

instrument to actually halt forest degradation and loss (Poteete & Ostrom, 2002). The failure to bring about sustainable forest management through state imposed and controlled approach instigated the introduction of participatory forest management (Girma, 2007; Alemayheu, 2007; Dirriba, 2007; Amhed, 2007).

The current trend in developing countries is that governments are increasingly turning to community-based forest management approach to conserve forests (Girma, 2007: 1). Community-based or participatory forest management is the management of forests in which the local community participates in the management of forests and becomes beneficiary from the forests (Khanal, 2007; Tsegaye et al, 2007). In Oromia, the Regional State of Oromo in Ethiopia, participatory forest management has been increasing recently (Dirriba, 2007: xiv). Hence, it is necessary to identify valuable indigenous knowledge of the society that needs to be incorporated in participatory forest management or modern conservation practices.

Since the early 1990s, an increasing number of studies have revealed that variables other than population pressure might play a role in depletion and loss of forests in developing countries. Agrawal (1995), among others, indicates that despite the rapid population growth and increasing market pressure, some local communities are able to manage forest resources in a sustainable way, while others overuse and destroy them. There is strong evidence that institutions are the decisive 'missing factors' in this regard as they provide incentives and disincentives that shape human decision making and action in forest resource use, management and conservation (Agrawal, 1995; Agrawal & Yadama, 1997). Consequently, understanding institutional arrangement in which the community operates in relation to forest use, management and conservation is essential when thinking about conservation of forests. North (1990) considers institutions as humanly devised constraints that shape the interaction of people with their environment.

In this study, indigenous knowledge of the Guji Oromo embedded in the traditional socio-political institution of the Oromo, *Gadaa* System regarding conservation of forests

and related resources (grasses and water) would be examined. The Guji are one of the Oromo groups who have inhabited the southern part of Oromia Regional State.

Oromia Regional State, which consists the Guji Zone in which the study was conducted, is the largest region constituting 353,690 km² (32%) of the total area of Ethiopia (Oromia Bureau of Planning & Economic Development, 2000) and it inhabits 27,158,471 (36.7%) of the total population (73,918,505) of the country. The Oromo constitutes 25,488,344 (34.5%) and (94%) of the total population in Ethiopia and Oromia respectively (FDRE, Population Census Commission, 2008). In terms of the meager forest available in the country, which is estimated to be about 4% (FAO, 2001a), 70% of the forest resource is found in Oromia (Girma, 2009). According to some sources, forest cover in Oromia accounts for 8.5% of the total land of Oromia (Oromia Bureau of Agriculture & Rural Development, OBARD, 2007: 9).

The Guji-Borena area is considered to be the cradle of the Oromo (Asmarom, 1973; Haberland, 1963; Lewis, 1966; Taddesse, 1988), and the Guji are among the eldest of the Oromo groups (Jemjem & Dhadacha, 2011). Yet, there are relatively large natural forests in the Guji Zone. The partial data referring to state forests obtained from the Borena-Guji Forest and Wildlife Enterprise (OFWEBGBO, 2002/2010: 14) shows that there are 171,483.1 hectares of state forest in the zone. The report by the enterprise (BBBG, 2004) also reveals the demarcation and inclusion of more 60,345 hectares of forests in the state forests and large natural forests out of the state protected forests. Thus, it appears important to study the indigenous knowledge of the Guji Oromo in relation to conservation of forests.

The researcher believes that the knowledge obtained in this study may help in the forest conservation activities in Oromia and Ethiopia as well. Hence, as nearly all Oromos speak closely related dialects of the same language, *Afaan Oromoo*, share a common cultural heritage (Asmarom 1973: 7); and constitute the largest population in Ethiopia, whatever happens in Oromia in relation to conservation of natural resources in general and forests in particular could have a great impact on the entire region of the Horn.

This being the case, except for few studies done on indigenous knowledge of forest conservation and the problems encountered in the attempt made in modern conservation practices due to the failure to entertain the indigenous culture and the demands of the local people (Kitessa, 2007; Bassi, 2003; Abdurhaman, 2004; Lalisa, 2008; Bassi &Tache, 2007; Zewudie, 2009; Workineh, 2005), this topic is unexplored area of research particularly seen in relation to curriculum development.

Nevertheless, the National Conservation Strategy (1994) and the Education and Training Policy (1994: 13) of Ethiopia have stressed the need to integrate traditional knowledge in the curriculum by giving emphasis to concrete local conditions. Hence, this study was done with particular reference to indigenous knowledge (IK) of the Guji Oromo on conservation of forests in relation to curriculum development to identify the gap between what is stated in the policy and what is actually found in the official curriculum. Therefore, emphasis was given in the study, not only on the identification of the indigenous knowledge on forest conservation but also on the assessment of the means of its transmission to youngsters in schools. Moreover, the current status of the application of indigenous knowledge in conservation of forests was assessed. In light of this, the study attempted to answer the following basic questions:

1. What indigenous knowledge do the Guji Oromo have on conservation of forests?
2. Why and how do the Guji conserve forests?
3. What is the current status of indigenous knowledge of forest conservation in Guji?
4. What does the use of indigenous knowledge in modern conservation practices look like in Guji?
5. Is the indigenous knowledge of the Guji on forest conservation included in the official elementary school curricula of Oromia?

1.3 Objectives of the Study

The objective of the study is to investigate the indigenous knowledge of the Guji Oromo on conservation of forests and examine it in relation to its application in modern conservation practices and its integration into curriculum. The study aims at exploring the indigenous knowledge of the Guji Oromo on conservation of forests and analyzing its inclusion in elementary school curriculum. Moreover, it examines the present status of the indigenous knowledge of the Guji Oromo on the conservation of forests. In so doing, the study will pinpoint how to integrate indigenous knowledge of the Guji on forest conservation in curriculum and in modern forest conservation practices.

1.4 Scope and Limitations of the Study

The Oromo are widely spread in the Horn of Africa. Hambly (1930: 176) states that "there is adequate evidence to indicate that the Oromo dominated the areas from Abyssinia to Mombasa and from Somalia to Sudan (albeit there were no demarcated boundaries) before they were partitioned and colonized during the scramble for Africa." In line with this, Mekuria (1994: 91) notes that the *Afaan Oromoo* speakers spread over a wide geographical area not only in Ethiopia but also in Kenya and Somalia. However, this study was conducted on the Guji Oromo in southern Oromia. Moreover, it focused on their indigenous knowledge of forest conservation. As a single tree constitutes forests, in the study, attention was given to the care that the society gives to each tree as well as an area covered with dense forests. Furthermore, the study was confined to the middle and high altitude areas of the *Hookkuu, Maattii* and *Uraagaa* groups of the Guji, excluding the lowland areas with savannah and thorny bushes where pastoralism is predominantly practiced.

Like any other study, this study has its own limitations. It has not dealt with the impact of modern mass media on the deterioration of indigenous knowledge of the Guji on forest conservation which could be a research topic by itself. In relation to curriculum

development, the study has analyzed only the contents of official curriculum without considering teachers' adaption of curriculum to local reality in teaching-learning process. Again, this could be a broad research area and is difficult to deal with in the same study.

1.5 Significance of the Study

The study investigated some valuable indigenous knowledge of the Guji Oromo on conservation of forests and the utilization of this knowledge in the present attempts to conserve forests. It also assessed the inclusion of indigenous knowledge in elementary school curriculum proposing that better attention needs to be given to this issue in the future. Hence, the findings of the study could significantly contribute to environmental education practices in Ethiopia. As a result, policy makers, curriculum developers, students and practitioners in the conservation of nature in general and forests in particular would benefit from the study. The findings of the study are hoped to benefit Oromo people in particular in their efforts to preserve and promote their cherished indigenous knowledge and culture. Furthermore, the study will inspire further study in the area.

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FOUNDATIONS

This chapter first introduces the reader with the conceptions of indigenous people (IP) and indigenous knowledge (IK). It then presents views and research works on the roles of indigenous knowledge on conservation of natural resources in different parts of the world. After discussing IK at international level and with reference to Oromo, factors that hinder the development and use of indigenous knowledge are dealt with. Finally, topics dealing with revitalization of valuable indigenous knowledge and its utilization in modern conservation practices are presented.

2.1 Conceptions of Indigenous People and Indigenous Knowledge

To understand indigenous knowledge, it becomes important to have some conceptualization of indigenous people. Martinez Cobo (1986) defines indigenous people as follows:

> *Indigenous communities, peoples and nations are those which, having a historical continuity with pre-invasion and pre-colonial societies that developed on their territories, and consider themselves distinct from other sector of the society now prevailing in those territories, or parts of them. They form at present non-dominant sectors of society and are determined to preserve, develop and transmit to future generation their ancestral territories, and their ethnic identity, as the basis of their continued existence as peoples, in accordance with their cultural patterns, social institutions and legal system (Martinez Cobo in McNeish & Eversole, 2005: 5).*

This definition was accepted by an international gathering of indigenous people in July 1996, though defining ‘indigenous people’ is difficult given the fact that there is a great diversity of indigenous people in the world (McNeish & Eversole, 2005: 3). The umbrella term ‘indigenous people’, as indicated by the definition above, highlights the many

important characteristics that the diverse indigenous peoples share like being original inhabitants of a land, forming distinct, non-dominant sectors of the society, unique ethnic identities and cultural system, strong ties to the land and territories, experiences or threats of the dispossession from their ancestral territory, the experience of living under the outside, culturally foreign governance and institutional structures; and the threat of assimilation into dominant sectors of the society and loss of distinctive identity (McNeish & Eversole, 2005: 6).

Such peoples include the Aborigines or the First Nations of Australia, New Zealand and North America, the hills tribes, ethnic minorities, ethnic nationalities, original inhabitants, and other indigenous groups of Asia and the subcontinent, the indigenous *campesions* ('peasants') or *indios* ('Indians') of Latin America, the indigenous peoples of Russia and Scandinavia; and the tribal peoples or ethnic groups of Africa (McNeish & Eversole, 2005: 6). The United Nations estimated that there are at least 300 million indigenous groups in more than seventy countries (UN, 2000). Hence, the definition of 'indigenous peoples' is broad, including diverse people in the world. For instance, most discussion on indigenous peoples, including definition by Martinez Cobo (1986) in McNeish & Eversole (2005: 5), considers indigenous peoples as a minority population living within a numerically and politically dominant 'mainstream' culture. Yet, in a country such as Bolivia, indigenous peoples may be the majority and still marginalized. Alternatively, a majority ethnic group may define itself as 'indigenous' and use this status to deny rights to smaller groups (McNeish & Eversole, 2005: 7).

Around the world, in vastly different cultures and settings, indigenous peoples are nearly always disadvantaged relative to their non-indigenous counterparts. Their material standard of living is lower; their risk of disease and early death is higher. Their educational opportunities are limited, their political participation and voice more constrained, and the life styles and livelihoods they would choose are often out of reach (McNeish & Eversole, 2005: 2). In line with this, in an international consultation in 1999, the Director General of the World Health Organization made the following observations about the status of indigenous peoples around the world:

> *Life expectancy at birth is 10 to 15 years less for indigenous people than for the rest of the population. Infant mortality is 1.5 to 3 times greater than the national average. Malnutrition and communicable diseases such as malaria, yellow fever, dengue, cholera and tuberculosis, continue to affect a large proportion of the indigenous peoples around the world…. Indigenous people are over-represented among the world's poor. This does not mean only that they have low incomes…. Indigenous people are less likely to live in safe and adequate housing, more likely to be denied access to safe water and sanitation, more likely to be malnourished (Brundtland, 1999 in McNeish & Eversole, 2005: 2-3).*

In Africa, which has experienced overseas colonization, the term 'indigenous' is seldom used. Rather, indigenous peoples in Africa tend to be defined narrowly as those specific peoples that are non-dominant (vis-à-vis other ethnic groups) and have close ties to ancestral lands, including land-based livelihoods (hunting, gathering, herding) (Sylvian, 2002: 1075-1076). In Ethiopia, the indigenous peoples (such as the Somali, Afar, Borena, Kereyu and Nuer) are estimated at about 5 million people or 12 percent of the country's population. They are mainly pastoralists and, according to the 2003 Indigenous World Report, "are subjected to the worst forms of political, economic and social marginalization and subjugation as well as social, ethnic, religious, political and economic inequality; for them, 'development' often involves confiscation of their grazing lands and forced sedentarization (Vinding, 2003a, 358-359).

For the researcher, the definition given for indigenous peoples in Africa as 'tribes' or 'ethnic groups' appears to be narrow and derogatory. This may be the result of the colonization of Africans and the subsequent literature based on that colonial experience. Despite this condition, there are many native Africans who have maintained their traditional political, economic and social practices even under challenging conditions. Typical examples are the Oromo in Ethiopia and Kenya who are the vast majority particularly in Ethiopia. So, attaching indigeneity to hunting, gathering and cattle herding may limit broader concept of indigeneity that indigenous peoples are diverse, could involve in diverse economic activities and may exclude indigenous people who are engaged in farming and other activities. In case of this study, the Guji are agro-pastoralists engaging in both the rearing of animals and the cultivation of crops.

In general, there appears to be more similarities than differences among the indigenous people across the world despite the diversities. Semali and Kincheloe describe the diversity and similarity of indigenous peoples as follows:

> *In indigenous studies, such as the Native American academic programs, emerging new political awareness have been expressed in terms of the existence of a global Fourth World indigeneity. Proponents of such a view claim that Fourth World peoples share the communality of domination and are constituted by indigenous groups as diverse as the Indians of Americans, the Innuits and Samis of the Arctic North, the Maori of New Zealand, the Koori of Australia, the Karins and Kachins of Burma, the Kurds of Persia, the Bedouins of the African/Middle Eastern desert, many African tribal peoples and even the Basques and Gaels of contemporary Europe. In this context, it is important to avoid the essentialist tendency to lump together all indigenous cultures as one, yet at the same time maintain an understanding of the nearly worldwide oppression of indigenous peoples and the destruction of indigenous knowledge (Semali & Kincheloe, 1999: 16).*

Therefore, as there are similarities among indigenous people such as the less attention given to them politically, socially and economically (oppression of indigenous people and destruction of indigenous knowledge), it is erroneous to consider all of them as identical. For instance, there could be some well-to-do individuals among indigenous people. Thus, it is not easy to define indigenous people. In relation to this study, indigenous people could be considered as the first inhabitants of a given area (locality, zone or regional state) with strong historical and emotional attachment to the area. They have managed to retain their traditional practices under challenging conditions, and are often neglected and suppressed. They could be majority or minority in number.

The term ‘indigenous knowledge’ is also conceptualized in different ways by different people. It is regarded as local knowledge, folk knowledge, traditional knowledge, people's knowledge, ethno science, a village science, community knowledge, and rural people's knowledge (Adedipe, 2004; Battiste, 2002). Many of these terms seem to reflect the Western perspective of the concept, which is associated with the primitive, static, wild and the natural (Semali & Kincheole 1999; Maurial, 1999). This Western or Eurocentric negative connotation of indigenous knowledge has contributed a lot to the

degradation or devaluation of indigenous knowledge in the educational arena. To the millions of the peoples of Africa, Latin America, Asia and Oceania, however, indigenous knowledge is a key to exist meaningfully and harmoniously with their environment. According to Semali and Kincheole, to the indigenous communities, indigenous knowledge:

> *Reflects the dynamic way in which the residents of an area have come to understand themselves in relationship to their natural environment and how they organize that folk knowledge of flora and fauna, cultural beliefs and history to enhance their lives (Semali & Kincheole, 1999: 3).*

As opposed to the Westerners' views of the concept, the above quotation indicates that indigenous knowledge is dynamic, not static, and it enables the people to live harmoniously with their environment. Battiste (2005) also argues that information, insights and techniques in IK are passed down and improved from generation to generation. Therefore, indigenous knowledge is an adaptable, dynamic system based on skills, abilities and problem solving techniques that change over time depending on environmental conditions (Battiste, 2002: 11). Mapara (2009) considers indigenous knowledge as a body of knowledge that the indigenous people of a particular geographical area have lived by on for a very long time. This seems to exclude inhabitants of that particular area who are not indigenous to the area and who have not used the indigenous knowledge of the people of the area. Dei, Hall and Rosenberg (1999) as cited in Mkosi (2005: 87) also associate indigenous knowledge with the long term occupancy of a given place. Mkosi, however, questions this by citing an example:

> *Would the knowledge of European settlers and colonizers who have been occupying South Africa for more than three hundred years be considered indigenous knowledge or would it be considered foreign Western knowledge (Mkosi, 2005: 88)?*

The ideas forwarded so far show that the meaning of indigenous knowledge is controversial. In line with this, Adidepe (2004:2) states that there is no standard definition for IK.

As indigenous knowledge is a complex concept, Mkosi (2005: 87) recommends making a comparison between indigenous knowledge and Western scientific knowledge to facilitate better conceptualization. Similarly, Ulluwishewa, Kaloko and Morican (1997) point out that indigenous knowledge is best understood by establishing the difference between it and the non-indigenous knowledge: modern (Western) or Eurocentric scientific knowledge. They mention the differences as follows: scientific knowledge is generated by professional scientists through systematic scientific research and experiments, whereas indigenous knowledge is generated by local people through day-to-day experiences in facing challenges of nature and society. In IK, knowledge workers observe ecosystems and gather eye witness reports from others so that they can continuously test and improve their own systematic, predictive models of ecological dynamics (Battiste, 2002: 13).

Local people also undertake research and experiments as part of their daily struggle to survive while working to earn their living (experiential knowledge) (Batiste, 2002: 15) but not under controlled condition as in modern science. For instance, once upon a time the local people in *Harargee*, eastern Oromia were asked how they began to use hot spring for drinking. The interviewees were responding to Oromia TV reporter about their experience. They first made some of their cattle drink the water. Then, they observed their cattle and found them in a good condition. Next, they themselves drank the water and finally found out that the water is very useful and even serves as medicine. This is an example of a traditional way of doing an experiment. Scientists, on the other hand, undertake research in laboratories and experimental farms or on artificially created conditions in farms or other places where they usually work.

Scientific knowledge is often documented; local knowledge is embedded in culture in various forms such as cultural practices, customs, traditions, religions and spiritual beliefs, ceremonies, folk stories, folk songs, legends and proverbs (Battiste, 2002: 10-20). It is basically transmitted through oral tradition, not in written form (Maurial, 1999: 63).

Indigenous knowledge is also inherently tied to particular landscapes, land forms and biomes where ceremonies are properly held, stories properly recited, medicines properly gathered and transfers of knowledge properly authenticated. Ensuring the complete and accurate transmission of knowledge and authority from generation to generation depends not only on maintaining ceremonies but also on maintaining the integrity of the land itself (Battiste, 2002: 13).

Unlike scientific knowledge, indigenous knowledge is implicit and cannot be understood by outsiders, and it is not standardized and expressed using common terms. Science claims to be global knowledge, whereas indigenous knowledge is location specific and is considered to be less applicable outside its original locality. Yet, it is necessary not to forget that IK could be reproduced and applied in similar environments. Indigenous knowledge is mainly knowledge of subsistence, whereas scientific knowledge is mainly knowledge of market economies. Scientists explore nature and societies in order to identify laws which describe relationships between various phenomena and seek explanations for the identified relationships. Likewise, local people explore nature and societies within geographical boundaries of their communities, but unlike scientists, they do not search for detailed explanations. Accordingly, the identified relationships remain as encounters. Hence, indigenous knowledge is both empirical (based on experience) and normative (based on social values and norms) (Battiste, 2002: 19).

From the differences and similarities between Western scientific knowledge and indigenous knowledge, one can gain a better understanding of indigenous knowledge. Hence, indigenous knowledge, in this study, refers to knowledge built up and used by the local people in conserving their environment in general and forests in particular. It refers to the knowledge of the indigenous people used by both the indigenous and the non-indigenous people in leading their lives in a given locality. The term ‘locality’ is an ambiguous and relative term as it depends on the nature of the culture of the people and the geographical conditions which they inhabit. If there are many people with similar culture covering a large area of similar geographical factors, the sphere of locality

increases; and vice versa. As indigenous knowledge evolves in the local environment, it is specifically adapted to the requirements of local people and conditions.

Indigenous knowledge is characterized by integrated system of cognition, belief and practice (Williams and Muchena, 1991). Since much of the learning takes place through day-to-day life activities, the awareness, attitude and the practice of indigenous people are not seen separately but holistically. It is ecologic, communal and mainly oral as opposed to the empirical, reductionist, specialized and written Western science (Smylie et al, 2003). From this explanation, it is understandable that indigenous knowledge is integrated and holistic in form as opposed to the departmentalized approach of modern education (Battiste, 2002; Maurial, 1999).

Specifically, in relation to this study, indigenous knowledge refers to local people's awareness, values and practices of conserving forests in its holistic form gained as a result of a protracted life experiences attached to their environment. The local people in this case refer to indigenous people and others who lead their lives according to the indigenous knowledge of the indigenous people.

2.2 The Role of IK in Conservation of Natural Resources

Concerning the role of indigenous knowledge on conservation of natural resources particularly forests, different views are forwarded. Despite its role, IK has been ignored and marginalized by outsiders in different parts of the world (IPS, 1993).

In relation to the role of IK and the influence of outsiders on indigenous people and their knowledge, citing one of the Indians, Le Breton (1993), indicates that the arrival of settlers was nearly the end for Indians.

> *Within 20 years, the indigenous population of Rondonia in Amazon declined from 30, 000 to 6,000. We have been living in harmony with nature for thousands of years. Yet in less than 500 years outsiders have destroyed our forests, exterminated our wild life, polluted our rivers and lakes, destroyed our cultural, religious and ecological traditions and enslaved and prostituted our people (Le Breton, 1993: 4).*

Le Breton (1993) found that Indians were the biggest losers due to outsiders' occupation of their lands. They have lost their lands, their livings and their lives. As a result, she recommended that nothing was more urgent than the demarcation and protection of their lands. She also recommended the need to strengthen indigenous knowledge center that would collect and document traditional Indian knowledge and pass it to the next generation.

In line with the recommendation of Le Breton, the experience from Brazil shows that the struggle for one's right to resources could bring change. As stated by Txucarramae, Funai and Mato (2005), the Kayapo in the Amazon Forest have fought for generations to rule their territories and maintain their culture. The result of Kayapo struggle has been the protection of more than 10 million hectares of largely pristine forests and savannah and indigenous culture in the highly threatened south eastern Amazon.

Some studies also show that the involvement of indigenous people in the conservation of natural resources contribute significantly to the effectiveness of conservation (Dutt, Kaleta, and Hoshing, 2005; Txucarramae, Funai and Mato, 2005; Tomasek, 2005).

The study done on "Jogi-Nath" snake charmers in India, in which the local community were used as 'barefoot conservation educators' to share their indigenous knowledge and skills to others, had not only provided livelihoods to the trainees but also assisted in the protection of snakes killed by the ignorant people (Dutt, Kaleta and Hoshing, 2005). Another case study research from the Transfly region of New Guinea shows that areas under customary tenure regimes are likely to be more successful if they incorporate local knowledge and values of the society (Tomasek, 2005).

Concerning Africa, Johnson and Anderson (1988) note that industrialized countries regard Africans as having exclusively involved in unproductive activities that affect natural resources. That is why colonizers have, for instance, imposed conservation policy that disregarded indigenous knowledge of African societies in southern African countries (Fabricius, 2004). However, their policy was found to have negative impact on conservation of natural resources. For example, in Eastern Cape Province, South Africa, research conducted among the local communities showed that there was a clear decline in the condition of indigenous forests after the headmen's system of managing the forest collapsed by corruptive influences of the apartheid. Though not well documented, traditional institutions such as kings, chiefs, headmen and healers have played an important role to maintain and regulate resource use in the region (Fabricius, 2004: 3). With the arrival of colonialists and pressure on indigenous people, however, the role of indigenous institutions began to decline.

Colonialists intensified hunting particularly for Ivory trade (Mostert, 1992), rearing cattle in large scale, which damaged the land much more than the nomadic Khoikhoi (Wilson, 1970), and plouging land, which was more damaging to the land than the traditional hoes used by the Africans to till the land (Fabricius, 2004: 5). In line with this, Johnson and Anderson (1988) state that "in fact, it was the forces of colonialism which disrupted the natural balance which African societies steadfastly struggled to maintain."

It has been identified that Africans have developed conception of interdependence between their lives and natural resources (Fabricius et al, 2004; Workineh, 2005). Peoples in Africa have generally appreciated and incorporated nature in their metaphors, folklores, proverbs and belief systems (Oteinde, Ezaza & Boisvert, 1997; Fabricius et al, 2004). Many of their belief systems of governance included rules designed to regulate the use and management of natural resources. There are taboos that prohibit the use of certain resources at certain times so that the resources get time to recover (Fabricius, 2004: 4). There are also sacred forests, for instance, scattered all over southern African landscape (Barrow, 1996). In the area where I was born and raised, *Giddaa Ayyaanaa,* in East *Wallaggaa*, people do not cut trees on certain days, *Caginnoo,* believing that the cut

wood will be eaten by termite and will not serve effectively for the purpose it is intended. There are also some sacred trees such as *Muka Jaarrii* and *Muka Hammeenyaa.* Not only cutting these trees is proscribed but also using their fallen branches and leaves is forbidden. These seem to be associated closely with the beliefs of the society.

On the other hand, in an attempt to involve the community in conservation practices and make them benefited from the practices, Community-Based Natural Resources Management (CBNRM) was applied in Southern African countries (South Africa, Botswana, Zambia, Namibia, Lesotho, Mozambique, and Zimbabwe). Some of the case studies done on the benefits of community based natural resource management (CBNRM) have shown good results economically. For instance, the case studies by Boggs (2000) indicated financial benefits by the Khwai (around the Khwai River) and Sankuyo communities around the Okavango Delta of Botswana. However, the claim that economic benefits alone automatically translate into improved wildlife management is not well founded. Moreover, CBNRM has not accomplished the goals of capacity building or empowerment.

The case study on the Basrawa community in the Okavango Delta has revealed the need for the government to give the community not only the responsibility to manage their natural resources but also the authority to use the resources through their local and traditional institutions (Madzwamuse & Fabricius, 2004). The effectiveness of CBNRM depends, therefore, on continued strengthening and maintenance of local ecological knowledge and traditional coping strategies; and on CBNRM’s success in bringing about change at household level and in people's access to resources through co-management agreements. Hence, CBNRM initiatives have so far yielded good results in income. But the status quo of grabbing the lion's share of the benefits by those at higher positions (state and local governing bodies and community leaders) was reflected in the program.

In my view, from the CBNRM experience in Southern African countries, it seems that much more attention was given to material value with less attention given to the culture and tradition of the local people. The other important issue is that the program largely

depended on external support which does not go with the very nature of indigenous resource management and which does not ensure the sustainability of the program. Hence, it appears that these factors need improvements for effective CBNRM. Anyhow, the program seemed to be better than the more rigorous top-down conservation approach exercised by colonialists before.

The study done on the indigenous knowledge of Gumuz of Metekel, North Western Ethiopia, who are shifting cultivators, revealed that the indigenous knowledge of the society on conservation of natural resources underlie their belief that 'natural resources are the indigenous creation, gift and blessing of '*Yamba*' (the supreme deity)'. Different natural resources have their respective '*Missa'* (holy sprits) that ensure their proper use and management; violations of this result in severe punishments and retributions from respective '*Missa*'. Hence, the Gumuz consider natural resources as sacred, and as ancestral heritage, and their ownership and conservation are vested on both the present and the future generations (Woldesilassie, 2000: 17).

The livelihood of the Gumuz people is mainly dependent on activities that are associated with forest resources like shifting cultivation, gathering wild foods, and hunting, collecting honey and raising livestock. Shifting cultivation is an indigenous agro-ecological knowledge through which they skillfully shift the fields and maintain and manage the natural forest and related resources like soil, water, and wild animals in a sustainable way (Woldesilassie, 2000: 18). This indigenous knowledge of Gumuz on the management of natural resources constitutes mostly norms, values, ethics, and taboos that have been institutionalized as customary laws and conventions enforced by respectful elders in the community (Woldesilassie, 2000: 18).

Hence, researchers on indigenous people in different parts of the world (e.g., Ashini, 1993; Terena, 1993; Arabagali, 1993; Bhatt, 1993; Nkongoni, 1993; Kamal 1993), strongly argue that indigenous people have been living with their natural environment harmoniously. However, outsiders who are alien to the culture and tradition of indigenous people have ruthlessly destroyed indigenous practices. Unfortunately, in the

aforementioned studies such problems were not duly considered in European countries. This seems to be related to the history of colonization whereby the Europeans colonized different parts of the world. In so doing, they exploited not only the natural resources of the colonized countries but also destroyed the indigenous knowledge of the colonized societies. It is from this point of view that indigenous people criticize colonizers/outsiders for the destruction of their natural resources as well as their cultures (Warren, 1992; IPS, 1993; Oteinde, Ezaza & Boisvert, 1997; Fabricius & Koch, 2004).

From the above discussions, it appears that the indigenous people have taken the position that they have been friendly to their environment while the outsiders/colonizers that are alien to the environment of the indigenous people have been causing a lot of unprecedented damage to the environment.

Some writers on environment have taken the middle position. For instance, Le Breton (1993), concerned by the damage brought to the Amazon Forest and its indigenous people, argues that the indigenous people should not ignore all the things of the settlers. She recommends scientific and technological transfer from developed countries to the indigenous people that could help in conservation of natural resources in the Amazon and contribute to the betterment of the lives of its indigenous people. Accordingly, she suggests cooperation between indigenous people and the settlers, and the governments of the two.

Mac Donald (2003: 1), confirming the discrimination practiced against indigenous people, contends that the interests in the local indigenous conservation practices have taken much of political shape, which was absent in the past. Accordingly, the interests in the local indigenous conservation have become a tool for indigenous people to regain the resources they had lost before, rather than fundamentally conserving these resources.

In the researcher's view, for whatever purpose it is (be it political, economic or cultural), the position of indigenous people seems to emanate from the suppression and violation of their rights by suppressive rulers or colonizers and their failure to lead their lives which

depend on their natural resources. This calls for taking actions to respect their rights and their indigenous ways of conserving natural resources. Many of the studies indicated above have revealed that indigenous knowledge has contributed substantially to the conservation of natural resources. Hence, the uncertain status of indigenous knowledge that reflects many generations of experiences and problem solving methods by thousands of ethnic groups across the globe has been of a great concern to many world citizens (Warren, 1992).

Therefore, the general trend that needs to be followed by environmentalists and development agents nowadays appears to be that any development effort has to be undertaken in a sustainable way - without endangering the environment and the people who depend on the environment. To do so, such an effort has to take into consideration the valuable knowledge, tradition and the culture of the indigenous people (Warren, 1992; Battiste, 2002; McNesh & Eversole, 2005). I think this requires a cooperative work of developing and developed countries, indigenous people and outsiders, and policy makers and the local community to integrate valuable knowledge and experiences from both indigenous knowledge and Eurocentric modern science for the common good: the sustainable use of resources for development.

2.3 IAD Framework for the Analysis of the Role of IK on Forest Conservation

Various researchers base their works on particular theories and frameworks. The main purpose of doing this is to use these theories and frameworks as beacons that guide them in their work. A framework organizes inquiry by specifying the general sets of variables of interest (Koontz, 2003: 1). It gives structure to inquiry and helps to identify relevant theories to a particular problem. A theory is more specific than a framework and causally links observed or modeled phenomena, providing interpretive structure. Models lie at the most specific of the three conceptual levels with a precise assumption about limited parameters and variables suited for testing hypotheses and predicting outcomes (Koontz, 2003: 2).

Institutional Analysis and Development (IAD) Framework is one particularly useful framework which has structured inquiry across a broad array of policy sectors and disciplines (Koontz, 2003: 3). In the study by the International Forestry Resources and Institutions (IFRI) under United Nations Food and Agriculture Organization on how various kinds of governance arrangements affect the performance of forest management which involves methods from natural sciences and social sciences, IAD is the commonly used framework (Koontz, 2003; IFLEA, 2009). Hence, IAD appears to be important for this study, which touches different disciplines like curriculum, sociology, geography, biology and history.

The Institutional Analysis and Development Framework focuses on the analyst's attention on individuals who make decisions over the course of action (Koontz, 2003: 3). According to the framework, decisions to deplete or destroy forest are produced in a social sphere where individuals interact over processes and impacts, called the 'action arena'(Kiser & Ostrom, 1982; Ostrom & Gardner et al, 1994; Ostrom & Burger et al, 1999; Koontz, 2003; Ostrom, 2004). The decision making process and its outcomes are influenced by four types of variables, namely, the attributes of the physical world, the attributes of the community within which actors are embedded, rules that create incentives and constraints for a certain action, and interaction with other individuals or community (Ostrom & Gardner et al, 1994; Koontz, 2003; Ostrom, 2004).

The interaction between humans and nature or between people (community) and physical world (natural resources) is mediated by technology and institutions (Stellmacher & Mollinga, 2009: 45). The focus of this study is on indigenous knowledge of Guji as reflected in the customary laws of the people embedded in the G*adaa* institution. Hence, the technological mediation is not considered in this study. It is, therefore, assumed that institutional mediation is a more important element for understanding the processes in indigenous knowledge of the Guji Oromo on forest conservation. Moreover, the local community's interaction with their environment is influenced by the interaction they have with other groups of people or institutions.

The IAD framework starts with the action arena (where the conservation and /or the depletion of forests take place) as a unit of analysis and focus of investigation. That means, the nature of the physical environment on which an action is taken determines the outcome. The physical world varies from setting to setting and for forest ecosystems that may include elements such as rate of growth, density of species, climate and weather, terrain and other physical factors that impact the state of forest ecosystem and the humans that interact with it.

The 'social space' where individuals interact, solve problems or fight, called 'action situation' (Ostrom & Gardner et al, 1994) is the attribute of the community. It includes participants in position who must decide among diverse actions in the light of the information they have about how actions are linked to the potential outcomes (Ostrom & Gardner et al, 1994: 29). This means that the knowledge of the decision makers and actors matters in the outcomes of the action.

Rules are statements about what actions are "required, prohibited or permitted and the sanctions authorized if the rules are violated" (Ostrom & Gardner et al, 1994). They are created by humans and are often the target of attempts to solve problems. The interaction between a community and other groups of people or institutions may positively or negatively affect the outcomes of the action. If the influence of other groups is positive on the action taken, in this case the conservation of forests, it may lead to good outcome; if not, the reverse will be true.

Finally, 'community' is an important context that affects individuals' actions based on its accepted norms of behavior, the level of common understanding about action arenas, the extent to which preferences are homogenous and the distribution of resources among members (Ostrom & Gardner et al, 1994: 45).

In the present study, based on the IAD framework, the indigenous knowledge (awareness, beliefs, norms and practices) of the Guji Oromo on forest conservation and factors that have contributed to its deterioration would be assessed. The 'physical environment', in

this case, refers to forests and the related resources found in the middle and high altitude areas of Guji; the 'actions' are the doings of the Guji on and for the forests; the 'rules' are the customary laws of forest and related resources conservation in the *Gadaa* System; the 'community' are the Guji Oromo of *Hookkuu, Maattii* and *Uraagaa* who are under similar *Gadaa* and its common values and norms of forest conservation and the interaction they have with other non- Guji groups. The 'outcome' is the sustainable use or destruction of forest and related resources. The outcome is inferred from the assessment of the use of indigenous knowledge and the factors that influence its use in conservation. The current status of forests could be identified through documentary analysis, interview and observation. Factors that influence the use of indigenous knowledge in conservation of forests are investigated in relation to the community (the Guji) and their interaction with other groups.

2.4 Advantages and Limitations of Indigenous Knowledge

Indigenous knowledge is knowledge that the indigenous people have used for a protracted period of time. It has enabled them to pass through the ups and downs of life in their attempt to lead their lives in their immediate environment. Hence, they know how to use their indigenous knowledge and live in harmony with their environment. In other words, through their experiences, they know the adverse effects of destructing resources of their environment. In relation to this, Briggs (2005: 4) contends that indigenous knowledge is central in the debates about sustainable development because of the way in which such knowledge has apparently allowed people to live in harmony with nature for generations.

Some regard indigenous knowledge as providing alternative to the individualistic capitalist system of the North that has been blamed for damaging the planet (Obomasawin, 1993 cited in Schafer et al 2004). As can be understood from the very nature of capitalism, which is based on capital accumulation and benefit seeking with less or no worry about fair distribution of resources among the people of the world, it is conceivable that selfish accumulation of wealth has contributed a lot to the destruction of

natural resources. As opposed to this goal, indigenous people often use resources as a means of subsistence (Dewalt, 1994) that has no great damage to the resources and this contributes to their sustainability. This is so as indigenous people often live harmoniously with their environment, which also provides them what they need. It appears that as they are peaceful with their environment, their environment is also generous to them.

Indigenous knowledge represents a way of life that has evolved from the local environment and is, therefore, specifically adapted to the requirements of local conditions (Dewalt, 1994). It can contribute to local empowerment and development, increasing self sufficiency and self determination (Langil, 1999). It increases cultural pride and motivation to solve local problems with local community and resources (Thrupp, 1989). Indigenous people can provide valuable input about the local environment and how to manage its natural resources effectively. There is also respect for nature among indigenous people. The land is considered as sacred; humans depend on nature for their survival. There is a strong family and community ties with their immediate environment and there are feelings of obligations and responsibility to preserve the land for future generations (Dewalt, 1994). Hence, effective conservation of natural resources may not take place unless it is seen in relation to the interaction of the local community with their environment.

As much as it has strong sides, indigenous knowledge has also some limitations. Indigenous knowledge is sometimes accepted uncritically because of a naive notion that whatever the indigenous people do is naturally in harmony with the environment. There is evidence that indigenous people have also committed environmental sins through overhunting, overgrazing or over-cultivation of the land (Langil, 1999). Indigenous knowledge is not also in a position to withstand the influence of wider economic and social forces. The growth of national and international markets, the influence of educational, religious and other development processes are leading more and more to harmonization of the world culture (Grenier, 1998). Consequently, indigenous values, customs, know-how and practices will be eroded. Practically, by the name of development projects, indigenous people are removed from their homelands in different

parts of the world. This has brought about the violation of the rights of the indigenous people. In such a way, their indigenous culture and their close tie with their environment are lost. Considering the Northern Australian case, Wohling (2009) argues that, even though indigenous knowledge has gained rapid acceptance currently and tended toward an essential and universalized truth, it is not adapted to the scales and kinds of disturbances that contemporary society is exerting on the natural systems. This seems to hint us the need to scale up the level of indigenous knowledge. Sometimes the knowledge that local people rely on may be harmful to them. Hence, it requires careful and critical judgments.

As indigenous knowledge is on the verge of loss due to economic, social and political reasons, Langil (1999) advises researchers to document and disseminate it to others. It is also suggested to raise the awareness of indigenous communities so as to enable them record their indigenous knowledge and work on how the intellectual rights on their indigenous knowledge should be respected.

Concerning the advantages of and factors influencing the development and use of indigenous knowledge, Briggs (2005: 2) argues that the use of indigenous knowledge has been seen by many as alternative way of promoting development in poor local communities in many parts of the world. However, the focus on the binary tension between western science and indigenous knowledge, the problem of differentiation and power relations, the romanticization of indigenous knowledge and too frequent decontextualiztion of indigenous knowledge have made it less useful than expected.

Binary tension, the emphasis given to the differences between western science and indigenous knowledge in which indigenous knowledge is degraded and considered as primitive and useless; and the western science as the only gate to knowledge has become a stumbling block to the development and use of indigenous knowledge. Briggs (2005: 16) also contends that the concentration of power in the hands of western science educated experts has impacted indigenous knowledge. In this case, experts in western science may actively discredit local knowledge to maintain their position.

Because of its attractiveness as an alternative to local development focusing on local community and valuing local knowledge, governments, non-governmental organizations and some development agents have given emphasis to indigenous knowledge as contemporary trend to bring about development at local level. Nevertheless, this appears to lead to the over romanticization of indigenous knowledge without problematizing it. It cannot be assumed at all that indigenous knowledge will necessarily provide sustainable answers to production challenges in poor rural communities (Briggs, 2005: 18). Bluntly stated "…the self evident that if indigenous knowledge and indigenous soil and water conservation were truly effective, there would not be the problem of food shortage and land degradation that are evident today (Critchley, Reij & Wilcocks, 1994: 294). Even though other factors like land ownership and terms of trade may contribute to the problems, overlooking the problems of IK, nonetheless makes the point clear about the romanticization of indigenous knowledge.

A key feature of indigenous knowledge is that it tends to be deeply embedded within the society in which it has been developed and it must, therefore, be seen in its economic, political and cultural contexts. Therefore, in an attempt to apply indigenous knowledge in a broader and different geographic, cultural and economic settings, decontextualization, may not bring about the desired results in indigenous knowledge (Briggs, 2005: 21).

In general, indigenous knowledge has its own advantages and shortcomings. What really matters is identifying the valuable aspects of indigenous knowledge and using them to maintain the rapidly dwindling natural resources. This being the case, Battiste (2005) argues that Euro-centric scholars wrongly perceive indigenous knowledge as static and as of no value except in the spiritual realm. However, this view does not explain the adaptability and dynamicity of indigenous knowledge depending on environmental conditions (Dewalt, 1994).

In spite of its advantages, with increasing number of population, increasing human needs for better life and the deterioration of natural resources, indigenous knowledge in itself is no longer sufficient to deal with the surrounding world (Lammernick, 1999: 410).

International Environment Forum, IEF (2002), on the other hand, criticizes scientific knowledge for its insufficiency to deal with human problems. As stated by IEF (2002), science has brought progress in health, communication, agriculture and material comfort but with a widening gap between the rich and the poor. It has supported both war and peace. Knowledge of our purpose and place in the world, of good and bad cannot easily come through scientific knowledge.

Pertaining to the limitations of western science and indigenous knowledge, Klooster (2002), in a study of forest management in Mexico, concluded that both bodies of knowledge, in their different ways, are really quite limited in their abilities to inform the social picture of environmental management. This is because local knowledge is inadequate for monitoring the bigger picture of forest's response to wood cutting, and formal science simply lacks the institutional flexibility to deal with the socio-economic consequences of wood cutting.

Accordingly, it appears that science is in short of inculcating values and ethics for conservation of natural resources in people. Indigenous knowledge, therefore, fills the ethical gaps in science (Battiste, 2005). As part of indigenous knowledge, it is recommended that religion provides a moral and ethical framework to act morally. Successful societies in the past have generally developed using both science and religion as their sources of knowledge. Hence, science and religion are complementary sources of knowledge (IEF, 2002). From this, we can infer that because secular education is offered in Ethiopian schools, it may not be appropriate to ignore all knowledge that is from religion. Similarly, researchers recommend the hybridization/integration of indigenous knowledge and formal school education to deal with the deterioration of natural resources and to bring about sustainable development (Rahman, 2000; IEF, 2002; Adidepe, 2004; Barnhardt & Kawagley, 2005).

2.5 Learning in Indigenous Knowledge

Learning in indigenous knowledge takes place in the day-to-day activities of the people. In relation to this, Battiste (2002: 15) suggests that the first principle of indigenous knowledge learning is experiential learning. That is, indigenous pedagogy values a person's ability to learn independently by observing, listening, and participating with a minimum intervention of instruction. Therefore, learning in indigenous knowledge which occurs through doing (trial and error), observing others and imitation appears to be in line with constructivist and social cognitive learning theories. The very idea of constructivist learning theory is that students are active in creating their own knowledge. Bandura's social cognitive learning theory, stresses that learning is influenced by personal factors (beliefs, expectations, attitudes and knowledge), the physical and social environment (resources, consequences of actions, other people, models and teachers, and physical settings), and behavior (individual actions, choices and verbal statements) (Woolfolk, 2010:349).

In fact, learning by its very nature is largely an active process as a person learns more when s/he is active than when s/he is passive. This requires the cognitive readiness and psychological maturity of the learners. Sometimes individual's knowledge construction may be difficult particularly for a novice. On the other hand, if the old knowledge is wrongly constructed, it requires deconstruction before assimilating or constructing the new one. This necessitates interaction with other more knowledgeable persons. This means that social norms and values do have great influence on learning. These norms and values, however, may sometimes thwart creativity of individuals. Therefore, in the use of modeling in indigenous knowledge, it is essential to be selective and use appropriate models as imitation of wrong models may result in incorrect learning. It also appears necessary to apply the constructivist learning theory, which gives more freedom for learners to challenge harmful traditional practices and upgrade the 'valuable ones'. Thus, learning in indigenous knowledge is influenced by both internal (cognitive) and external (physical and social) factors.

Therefore, teachers need to recognize that they must use a variety of styles of participation and information exchanges, adapt their teaching methods to the indigenous styles of learning and avoid over generalization. They have to go beyond rule based learning to consider lifelong learning, learning how to learn in diverse contexts, and ability to apply knowledge to unfamiliar circumstances (Battiste, 2005: 15).

2.6 Theories, Paradigms and Models on Conservation of Natural Resources

Concerning conservation of natural resources, there are different theories, paradigms and models. For instance, in relation to land allocation, some recommend conservation reserve paradigm in which large areas are allocated for the preservation of biodiversity (Noss and Cooperrider, 1994). Reserves are the dominant paradigm of conservation biology, the objective being to fully protect the existing habitat and population from direct human modification. Reserves provide suitable habitat for natural biota, unknown elements of biodiversity and function as reference sites. Noss and Cooperrider (1994) recommend that, since unmodified natural ecosystems are rapidly diminishing, they must either be protected or they will disappear. However, due to shortage of sufficient total area, inadequate representation of natural ecosystem and pervasive influences of human society, the application of reserve paradigm on large area is difficult (Linenmayer & Franklin, 2003). Hence, they recommend matrix based conservation theory in areas where reserves are not feasible.

According to matrix based conservation theory, it is essential to maintain suitable habitat and population of native species outside of large reserves. Integrating reserve and matrix based approaches are not antithetical; rather, they are essential and complementary components in a comprehensive regional strategy to maintain biological diversity and ecosystem processes (Mitchell et al, 1995). That means, in case where there are large ecosystem areas, it is possible to apply conservation reserve paradigm and if otherwise the matrix conservation theory.

Almost related to these paradigms and theories, there are also natural resource conservation models. One of them is 'Diversity Begets Diversity.' The basic idea behind this model is that having a diversity of environmental conditions will provide habitat for a diverse array of species. This approach is necessary as humans have been greatly changing the natural state of the earth. Moreover, it appears appropriate where there are varieties of climatic conditions for varieties of forests. Gradually, 'Diversity Begets Diversity' Model appears to be supplemented by another idea that requires a more sophisticated understanding of ecology (Mitchell, et al, 1995). The theory to supplement 'diversity begets diversity' is 'Using Nature Template Theory.'

The very idea of Nature Template Theory is: understand forest ecosystem in terms of its composition, structure, function and the disturbances that regulate patterns across space and time as thoroughly as possible and use that knowledge to design management systems. This begins with the cycles of disturbance and succession for which all forest dwelling species have evolved. Because forest species are adapted to natural disturbances, it is logical to assume that they will be better able to cope with human induced disturbance in a reasonable facsimile of a natural disturbance.

From the above theories and paradigms, it seems necessary to apply a variety of approaches in conservation, based on the purposes of conservation and the real conditions of the environment. In a study conducted by Oromia Bureau of Agriculture and Rural Development (2007: 21) to transform regional forest priority areas into forest enterprises, it was envisaged that forest management would be done by classifying the forest land into categories based on functions such as plantation, protected forests and the community forests (such as dispersed patches of forests). In this initiative, it is planned that timber harvesting is strictly prohibited in protected forests as they are intended for maintaining biodiversity and environmental functions. These forests are likely to be located at the head of streams and along rivers, areas with slope 50% and above, areas with certain tree species of interests such as *Cardia abyssinica, Podocarpus, Juniperus* and *Hagenia abyssinica*. In other words, in large natural forest areas with less population, as for instance, in some parts of *Iluu Abbaa Booraa*, reserve approach of forest conservation

could be applied. In areas where we get patches of forests, the matrix theory appears feasible.

In general, the conservation approaches forwarded show that forests are conserved for different purposes and, thus, the approaches to be followed vary accordingly. Whatever approach is followed, the underlying principle not to be forgotten appears to be allowing the forests to regenerate so that their very existence will continue. That is, the sustainable use of forests should continue without endangering them. The "Diversity Begets Diversity" may be applied in many areas of Oromia with diverse climatic conditions where forests are under destruction. Likewise, in Guji, where there are high lands, middle altitude and lowlands, "Diversity Begets Diversity" could be applied.

2.7 Indigenous Knowledge of Oromo on Forest Conservation

Hereunder, the Oromo's view of the world in general is first presented, followed by their indigenous knowledge on the conservation of forests.

The Oromo are among the eastern Cushitic speaking peoples in the Horn of Africa (Lewis, 1966). They are known not only for being the largest constituent in Ethiopia (34.5%) of the population of the country (Population Census Commission, 2008), but also for being the possessors of a comprehensive socio-political institution called *Gadaa* System (Asmarom, 1973; Tenna, 2005; Asafa, 1993). The *Gadaa* System "is a system of classes (*luba*) that succeed each other every eight years in assuming military, economic, political and ritual activities" (Asmarom, 1973: 8). The *Gadaa* System as political, economic, social and religious institution is the pillar of the Oromo culture and civilization (Asmarom, 1973).

Tenna (2005: 86-87) indicates that the manners and ethos of the Oromo show that they are relatively peace-loving, free from bias and prejudice, people of goodwill and honesty, kind and cooperative. History witnesses that unlike some other people used to enslave their victims or prisoners of war, the Oromo used to assimilate them and culturally

recognize their indebtedness to those they have assimilated (Asmarom, 1973). This might have created favorable situations for the non-Oromo to live in Oromia. Moreover, the respect that the Oromo give to their values enabled them to maintain their tradition, culture and identity despite relentless suppression by the Ethiopian regimes. In relation to this, Asmarom (2000: 79) states that "the Oromo people managed to maintain their traditional democratic culture...preserved Oromo identity, democratic idiom and sense of communal integrity."

According to Oromo's view of the world, the world consists of three elements: *uumaa, ayyaana* and *safuu (*Gemetchu, 1998: 41). *Uumaa* has two meanings referring to *Waaqa* (the creator) and the entire physical world (the creation). *Ayyaana* refers to by which and through which *Waaqa* (God) creates everything. According to Gemetchu *ayyaana* also becomes that which it has caused to come into being. *Safuu* is basically a moral code or ethics by which human actions are judged as right or wrong. Hence, it is these three concepts which constitute the basis of the Oromo's view of the world (Gemetchu, 1998: 42).

Workineh (2005: 6) indicates that the Oromo believe that *Waaqa* created human beings to live amicably together on the earth. The Oromo believe *Waaqa* and *lafa* (the earth) are not separable. They say *Waaqa* is our father and *lafa* is our mother. In my view, in this saying the Oromo express their own philosophy in that the mother earth gets everything she has from her master God to provide what her children, the 'Oromo' need from her. The Oromo also express the association between *Waaqa* and *lafaa* when they condemn somebody to stop his/her wrong doing by saying: *adaraa Waaqaa fi lafaa waan akkasii gochuu dhaabi!* "Please stop doing this by the name of the God and the earth!"

The beliefs and the associated *safuu* of the Oromo seem to play a significant role in the conservation of natural resources. The Oromo, for instance, perform prayer ceremonies along permanently flowing rivers, by the side of big mountains, hills and trees. This is because of the fact that the Oromo believe that *Waaqa* likes these natural features that are

green and distinguished by their size or other impressive qualities that have aesthetic appeal (Workineh, 2005: 8).

According to the teachings of the indigenous Oromo religion (*Waaqeffannaa)*, the land and the resources around ritual places are viewed as sacred and they are well protected. Accordingly, the Oromo believe that cutting the sacred trees down is tantamount to the violation of the will of *Waaqaa*. For instance, *Korma Korbeessa* tree is a sacred tree under which a bull or a goat is sacrificed in different parts of Borena. The Borena also worship *Waaqaa* under the tree. As a result, the tree cannot be felled (Workineh, 2005: 12). As a whole, it is the recognition of the will of *Waaqaa* that is the basis of moral values in the Oromo world view (Workineh, 2005: 8).

Concerning the role of *safuu,* Workineh (2005: 9) discloses that the exploitation of natural resources is governed by *safuu*. Hence, in Oromo cultural values, one cannot unnecessarily exploit these natural resources. Accordingly, the Oromo do not consider trees as mere resources that can be used without limit. *Safuu* regulates the relationship between humans and trees. Thus, the religious beliefs and indigenous moral laws indirectly impose a system of ecological check and balance.

In his study on traditional forest management in the *Jimmaa* Zone, one of the zones in Oromia Regional State, Kitessa (2007: 1) found that the local communities conserve forest tree species either for religious practices or for the benefits they derive from the forest as in the case of coffee shade trees. As stated by Kitessa (2007: 6), traditionally each block of forest is under the possession or supervision of specific clan and used only by these groups or individuals. Entering these areas and cutting trees by an intruder is prohibited. Every member in the community is responsible for any destructive activities in his plots. Nobody has access to anybody's plot without the permission of the owner.

To my understanding, forest means coffee in *Jimmaa*. As coffee is cultivated under the shade of the trees, the destruction of forest means the destruction of coffee. That means, blocks of forests owned by clans or individuals are the properties of the owners. Hence,

nobody permits his property to be taken away or to be destroyed by others. This traditional practice of coffee production could help in the conservation of forests. In their studies on coffee forest areas in south western and south eastern parts of Ethiopia, Feyera, Kassahun and Tadesse (2007: 93) have identified that the traditional forest coffee production system harbors more species of plants and coffee genotype than the semi-forest and garden coffee production. This is due to the fact that in forest coffee production system, coffee grows as under storey plant and coffee berries are simply picked from naturally growing coffee plants with less modification on the structure and diversity of the forest by humans. But the greatest threats to the survival of traditional coffee production system and their habitat, *Afromontane* forests, are the pressures associated with population growth whereby people need the forest land for agriculture and other necessities.

To overcome threats of loss of biodiversity and livelihoods, Feyera, Kassahun and Tadesse (2007: 93) recommend a biosphere reserve conservation approach. The biosphere reserve approach allows the zoning of forest area into different management units with different management intensities like core zones for protection, buffer zones for sustainable management and transitional zones for intensive management and local development.

The biosphere reserve approach seems to serve for conservation of biodiversity as well as development purposes. Moreover, it seems astonishingly appropriate if people give more values to forest coffee on world market so that forest coffee production and forest conservation will be promoted.

Feyera and Demel (2003) reported that there is a traditional institution called *Shennechaa* in Jimma Zone, which regulates the management of forest. It enforces codes to protect forests and to prohibit activities which affect forest resources such as cutting trees, commercial logging, timber extraction, charcoal making, unwise use of fire in the forest, debarking, girdling, and indiscriminate under lashing.

Kitessa (2007: 6) also identified sacred trees under which religious prayers and cultural practices are conducted and which are not cut down. Because of the respect associated with these trees, even a person who was unable to have a child in his life time plants species of these trees that are named after him. As these trees are not cut down, they remain for generation bearing the name of the person. In relation to this, in *Wallaggaa*, where I was born and brought up, I know trees bearing the name of a person (e.g., *Baddeessaa Garbaa Kumsaa,* means *Garba Kumssa's Syzngium gaertn).* My father, *Fufaa Dinagdee* has told me that, sometime a person named *Garbaa Kumsaa,* who had no children, cultivated maize by leaving *Baddeessa (Syzngium gaertn)* in the middle of his agricultural field, where it is still standing bearing the name of the person.

Similarly, elders tell us that in the war between Menelik and the Oromo at *Annoolee in Arsii*, the war leader of the Oromo was *Roobaa Abdii*, who died without having a child. For the memory of their leader, the people planted a tree, *Ejersa (Acacia melanoxylon)* on his burial and the tree is known as *Ejersa Roobaa Abdii* bearing the name of the person.

Concerning the current status of the traditional setups in conserving forests, Kitessa (2007: 1) identified that they appear to be eroded by modern administrative setups. He, therefore, recommended that, if these traditional practices are integrated with modern conservation efforts, they will greatly support the conservation of the rapidly diminishing forests in the *Jimmaa* Zone. Kitessa (2007: 8) did not pass over without stressing the destruction made to the forests of the zone by settlers coming from the other parts of Ethiopia who are alien to the indigenous knowledge and values of the Oromo of the area in managing forests.

Concerning the indigenous knowledge of Guji on forest conservation, Taddesse (1995: 141-142) describes that the *Gadaa* System had military, social and ritual rules for controlling population growth and for protecting the environment. First, when the male members of the Guji reached the K*uusaa* grade of *Gadaa,* they used to wage wars against the non-Guji neighboring groups, a practice which would resume every eight years. The wars were used for territorial expansion and for safeguarding Guji territory and resources.

Second, the *Gadaa* System prevented a man from marrying and having children until he reached appropriate *Gadaa* grade. Children born before the appropriate G*adaa* grade were considered illegitimate and were either abandoned or adopted by a man from a proper grade (Taddesse, 1995: 142). Hinnant (1977: 123) identified that the lower limit to marriage and procreation in the past were set to be at the fifth *Gadaa* grade, *Raaba* (see Table 2, p.121). Third, the traditional Guji religion had important functions in protecting the environment from degradation. The Guji had *Woyyuu* (sacred shrines) associated with *Gadaa* rituals or myths of the origin. These sacred shrines were the common property of the whole group and were found all over the territory of Guji, covering vast areas of the land (Taddesse, 1995: 142). In relation to this, Negessa (2011: 51-53) has listed many shrines in Guji including *Adoolaa, Mee'ee Bokkoo, Futtoo, Haroo Gobbuu, Guutuu and Birbirsa Tuuttoo*. They were like churches and mosques where prayers and scarifies were made to *Waaqaa* (God). For instance, prayers are often made under *Mi'eessaa* tree in lowlands by the *Hookkuu, Uraagaa tree by the Uraagaa and Uddessa* tree by the *Maattii* groups (Negessa, 2011: 33). It was taboo among the Guji to cut trees, destroy forests or hunt in these areas. The Guji used these areas only for livestock grazing. Because of this religious devotion, forests and wildlife in and around holy shrines were protected very well until this Guji tradition was undermined (Taddesse, 1995: 142).

The conservation and the management of forests have been deeply enshrined in Guji culture. They perform prayers under trees, in forests and around rivers. Many of the ritual activities related to name giving when one passes from one *Gadaa* grade to the other and other *Gadaa* rituals, wedding ceremonies and funeral process are done with the use of tress and their products (Negessa, 2011: 31-47).

Naming and other rituals by *Abbaa Gadaa* take place under *Odaa*. The Guji give names of culturally valued trees, shrubs and herbs like *Ejersa, Birbirsa, Uraagaa, Odaa, Gololcha, Dhadacha, Dambii, Angadhii, Baddeessoo, Bisilee,* to their babies. In a wedding ceremony, the bride and the groom are expected to sit under respected trees like *Dhugoo, Mokonnisa, Haruu* and *Uddessa. Dhugoo* is to mean 'the man of truth', wishing the bride and groom to be honest and stand for truth. There is a tree called *Ceekkataa,*

which is used only for digging a grave hole or to point out the place of grave hole. According to the Guji myth, a person killed another person using *Ceekkataa*. Starting from that day, the tree is considered as a tree of blood (*Muka Dhiigaa*) and used for funeral purposes (Negessa, 2011: 47). Therefore, trees which have different cultural values are conserved for different purposes.

There are indigenous institutions in Guji for the conservation of forests at different levels. These include individual household (*ardaa* or *worra),* village (*ollaa),* phratries or groups and *Gadaa* institutions (Negessa, 2012: 36-42).

The individual household institution includes father, mother, children and other relatives living with the family and is responsible for conserving the demarcated forest area or grazing land of the household members. If a person destroys forests with fire or by cutting down the trees without genuine use, s/he is primarily advised by her/his family. If the person does not stop damaging forests, s/he is referred to the upper level (village or *ollaa*).

A village is bigger than a household, and it consists of two or more households that are from a different or similar family. Sometimes it is an extended family. Usually, outsiders are not allowed to cut down trees or use forest products from the forest area of the village without the permission of the group or the village. Village or group's forest conservation includes not only prevention of outsiders from destructing forests but also insider's proper use of forests. If a person uses forests improperly by cutting down big trees without genuine purpose, the person is advised by group members at family level. If the case is not resolved at this level, it is referred to the next upper level called 'phratry' or group. The household and village institutions have been significantly functioning in managing and conserving biodiversity in the area.

Phratry is the next upper stage above village. There are three Guji phratries: *Hookkuu, Maattii* and *Uraagaa*. They consist of the clans in the study area. This stage also plays a significant role in forest conservation by solving the problems that are referred to it from

household and village levels. At this stage, physical punishment could be used if the person is not willing to stop his/her destructive activities. In this case, the lineage has got the power to beat the person by laying him/her on a grass under big trees. Every member of specific groups is obliged to observe the punishment in order to get lesson from it. The punishment also includes slaughtering of an ox from the person's cattle and eating in group. The beaten person's body is massaged using butter so that the person will get relief. The punishment is made with the hope that the person will not repeat the same destruction. In case the person is found involved in the same destructive activities, the case is referred to the last supreme power, *Gadaa* (Negessa, 2011: 39).

The *Gadaa* institution is the supreme power in Guji. It plays a significant role in conservation of forests in addition to its political, economic, social and cultural administration of the Guji. It makes and enforces customary laws of forest conservation prepared by the previous *Abbaa Gadaa* and ratified by the general assembly of Guji at *Me'ee Bokkoo*. The rules are announced by y*uuba*. At this level, cases which have not been solved at household, village or phratry levels are presented and decided on. The wrongdoer is advised and warned for the last time at this level. In case the person is found not complying with the advice, he will be beaten again and pays an ox or cow. Finally, if the person does not stop his/her destructive actions to forests, s/he will be killed by *dabballee* (gumaa *buusuu*). Nevertheless, the practice of killing a person is no longer exercised currently.

Generally, different forest conservation-related measures taken by the indigenous institutions in Guji range from advising to killing. These measures are taken because the livelihoods of the Guji Oromo are highly dependent on forest resources. The measures taken by indigenous institutions on destructors of forests at different levels have contributed to the conservation of forests in Guji. However, with the conquest of Guji by Menelik II and the undermining of the IK of Guji on forest conservation, forest destruction has been accelerated (Tadesse, 1995).

Moreover, there is a law of grass and water in Borena and Guji (mainly in lowlands of Guji). This is clearly articulated in Bassi and Tache:

> *Although no family can be directly denied access to the rangeland, the law differentiates between dry season pastures (with permanent water points) and wet season pastures (with good grass but accessible during rains). It imposes the maximum use of wet season pasture whenever possible, thus minimizing pressure on the most intensely utilized rangelands served by permanent water points. There is also restricted access to certain areas (kaloo), kept as a reserve for less mobile stock particularly during dry season (Bassi & Tache, 2007: 61).*

Moreover, the decision to allow cattle to graze on a given area depends on the carrying capacity of the area. If the land is already used to its maximum potential, the herder would be asked to search for another area under the traditional grazing land management (Tache & Irwin, 2003). The norms and the practices have a direct impact on the ecology of the range land, particularly on the composition of grass species (Bassi & Tache, 2007).

Related to the law of grass, there is also a law of water in *Gujii* and *Booranaa*. Since water resources are limited, they need to be used in a sustainable way (*Culuqqee,* 20 November 2010). Accordingly, Homann, Gemedo & Rischkowsky (2004) give the detail strategy of water management. Accordingly, during wet season, when there is rainfall, open water sources are used and wells are closed from use. During the dry season, herds are successively shifted to more distant ponds where traditional wells are reopened for use. During progressing dry season, when there is scarcity of water, the drinking frequency of cattle is gradually reduced to one day (*dhabsuu),* two days (*limaallima*) and three days (*sadeen*). This strategy is mainly common in many parts of *Booranaa* and in some lowlands of *Gujii.*

The coordination of access to water is also linked to the tasks of its cleaning, maintenance and rehabilitation. For instance, cattle are restricted from entering water sources by fencing off the sources and making them drink water hauled into troughs made from clay and cement (*naanniga*) (Homann, Gemedo & Rischkowsky, 2004). There are also special provisions to ban any permanent settlement in the vicinity of the wells to maintain them

in a natural state except for the daily movement of the livestock. The cattle dung is accumulated outside each well for decades or centuries, a reserve of manure in the long term ecological cycle (Bassi & Tache, 2007: 63). Even though people have open access to rivers and occasional surface water from rain, hand dug ponds and wells are managed by selected council of the clan group: retired *hayyuu* (counselors) (Watson, 2001) or the *jaldhaaba* (a local lineage of clan elder or special messenger and security officer (Homann, Gemedo & Rischkowsky, 2004), consisting of the *abbaa konfii* (trustee of each well), the *abbaa herregaa* (the coordinator of water use and maintenance). An officer responsible for day-to-day supervision of watering procedures including the maintenance and cleaning of wells and their enclosures and environs, is assigned at a meeting of *kora eelaa* (conferences of wells). Any violation of customary laws of water use and management is referred to and discussed by the *kora eelaa,* in the presence of the culprit (Desalegn etal, 2005: 29-9).

The access to water depends on one's expenditure in the digging and maintenance of the ponds and the wells (Bassi & Tache, 2007; Tache & Irewin, 2003: Watson, 2001). Priority is given to clans and families that have actually invested more in it. A limited quota is also given for outsiders including the members of other ethnic groups and wildlife (Bassi, 2003; Oba, 1998). What is important here is that, the assignment of quota on the basis of one's contribution to digging and maintenance of water makes everyone contribute his share. On the other hand, animals which could not do this get a share. The head of Borena-Guji Forest and Wildlife Enterprise, (*Liiban*, 1 December 2010), reported that after making their cattle drink, the Guji and Borena leave the water in the troughs for wild animals to drink. Hence, the Guji Oromo are sympathetic even to wild animals in sharing resources. Thus, the well coordinated management of water and the rotational use of grazing lands have a positive effect on the regeneration of grasses and plant biodiversity of the land and reduce pressure on the forests.

However, in a similar way to what has been done to the indigenous people, their cultures and their resources in different parts of the world, the occupation of Oromia by suppressive regimes in Ethiopia has brought about the deterioration of the culture and the

devastation of the resources of Oromo. In the conquest led by Menelik II, the Oromo were forced to abandon their own culture, beliefs and ways of living and were made to accept that of the conquerors. Their lands were taken away from them and they were made to serve as tenants for the conquerors (*Gadaa,* 1999: 63). This made them not to exercise their indigenous knowledge. Despite this oppression and domination, the Oromo have continued to exercise their indigenous knowledge to a limited extent as in the case of the practice of the G*adaa* System in Guji, Borena and parts of Shewa.

Salviac (1901:20), a French missionary to Ethiopia whose book won the French Academic Prize, describes Oromo's culture and custom of conserving forests as follows:

> *They do not deforest, only if the land is destined for cultivation; the branches are sufficient for the structure of their dwellings; dead trunks, small branches collected crackle in the fire place. To cut a big tree down, it is for scooping out and making their beehives or their poor furniture. They do not prevent nature from repairing this mediocre damage (Salviac (1901:20).*

In line with this, Antoine d' Abbadie, cited in Salviac (1901: 20), states that their (the Oromo's) land is where the gracefulness of nature is best preserved in Ethiopia. Antoine d' Abbadie notes that crossing the river Abbay to the Oromo country, one is impressed by the abundance of trees. His brother, Arnauld, on his part, appreciating the Oromo's care for trees states that no enemy would come to break the branches or fell the trees which the Oromo love so much that they plant them near their dwellings. The greenery and the shade delight the eyes all over and give the landscape richness and a variety which makes it like a garden without boundary.

Before occupation by Menelik II and his soldiers, opulent and dark greenery used to shoot up from the soil of Shewa. For instance, Addis Ababa (*Finfinnee*), the capital where one buys cow dung for firing today, used to be a gracious wooded region. The great devastation came into being with Menelik's occupation of the area. He had ordered his subjects to behave in a destructive way to forests (Salviac, 1901: 21).

Some of the conservation practices in Oromia by the government have not been found to entertain the needs, interests and demands of the local people as in the cases of Senkelle *Swayne's hartbeet* Sanctuary by the Ethiopian Wildlife Conservation Organization in Arsi (Nishizaki, 2004) and coffee forest management in *Yaayyoo Gabaa Dogii of Iluu Abbaa Booraa* (Zewudie, 2009). In relation to this, Nishizaki (2004) found out that the Arsi Oromo resisted the conservation policy for Senkelle *Swayne's hartbeet* Sanctuary as the Ethiopian Wildlife Conservation Organization refused to accept the demands of the local people for access to the land and it planned to fence off the sanctuary. Nishizaki recommended that it is vital for conservationists to understand the structures and customs of the local people in their social, cultural and historical aspects. As it was stated before, there is cultural and historical attachment between indigenous people and their environment. Hence, the claims and rights of the local people to their land must be recognized and considered in advance in any conservation policy making processes.

A similar problem was observed in the study by Zewudie (2009: 9) on institutions setting rules and the local community around coffee forest management in *Yaayyoo/Gabaa-Dogii*, *Iluu Abbaa Boora*. The study showed that the community was in conflict with the district administration, *Gabaa-Dogii* Forest Coffee Conservation and Rural Development Office as the administrators took away the local community's forest coffee by the name of protected forest. Accordingly, they prohibited the local people from using forest resources by marginalizing them and their customary ways of life tied to their immediate environment. The situation has aggravated the conflict and has become an impediment to sustainable use of the forests. Zewudie recommended contextualized collaborative forest management by all relevant stakeholders involving the local community to ensure sustainable livelihoods and participatory conservation of the forests.

On the other hand, the attempt made by governmental and non-governmental organizations to use the traditional *Gadaa* institution in Community Based Natural Resource Management (CBNRM) in Borena has not produced the intended results (Watson, 2006: 80). Watson attributed the problem to the inherently and inevitably political nature of the CBNRM projects. Watson argues that recognizing *Gadaa* is likely

to mean promoting one ethnic group over the others (who are not governed by *Gadaa*). Another reason pointed out by Watson was the legacy of distrust between the Borena and the government, a distrust that also extended to other development organizations working in the region (Watson, 2006: 81). This could be attributed to the Borena's experience of Ethiopian successive rulers attempt to use their traditional institution for their political purposes: to rule the people and extract their resources (Watson, 2006: 77). As a result, the Borena believed that the government and others were carrying out CBNRM projects for political and security concerns rather than philanthropic motives.

The attempt to conserve resources without considering the needs of the local people has witnessed the greatest damage to the resources which obstructed their sustainable use. The shrinking size of the national parks of Ethiopia and the natural resources in them could be attributed to the hatred that the local community has developed to them. In fact, in almost all cases, the lands were taken from the local people by the name of creating national parks. On the other hand, the local people have not got benefits from the parks. The same is true for protected forest areas. That is why we have observed a great damage to the national parks and protected forests in different parts of the country during the transition from the Dergue Regime to Ethiopian Peoples' Revolutionary Democratic Front (EPRDF) (Dechasa, 2001; Bassi, 2003).

However, the Forest Conservation, Development and Utilization Proclamation (1994) of Ethiopia stipulates that the conservation, development and management of state or regional forests shall be conducted by concerned ministries or regions in a manner that inhabitants within the forests do not obstruct or hinder forest development, by facilitating conditions that they would be beneficiaries from the development. In support of this view, Stellmacher and Mollinga (2009), in their study of 'Institutional Sphere of Forest Coffee Management at Kombo Village in Gimbo District, Kaffa zone of Ethiopia' found out that the top-down laws by the government which did not recognize local institutions and customary laws of the community did not seem to be effective in conservation of forest coffee in the village. However, the customary laws of the local community and their enforcement through fining and social exclusion are contributing a lot to the

maintenance of the forest of the area. Consequently, Stellmacher and Mollinga (2009: 63) recommended formal recognition and legal backup for the existing local institutions by the state.

The Oromia Regional State Forest Proclamation enacted in July 2003, article 4(3), number 72/2003, underscores a community-based forest management as a strategy for forest conservation in the region. Moreover, Land Use Proclamation (2002) of the region states that pockets of natural forest lands should be identified, demarcated, protected, managed and sustainably used by the local communities. All of these supportive legal frameworks indicate the interest from the government side to promote community-based forest management in the country (Girma, 2006: 11). However, studies seem to show how indigenous knowledge, values and needs of the local community have been neglected (Nishizaki, 2004; Zewdie, 2009) and not properly respected and utilized for conservation purposes (Watson, 2006; Kitessa, 2007).

In line with this, Girma (2009) appreciating, the culture of the Oromo on conservation of forests and worrying about its present status, points out that, the presence of *Odaa (Ficus sycomorus)* on the flag of Oromia Regional State is an indication of the culture that the Oromo have on forest conservation. But recently that tradition seems to have been deteriorating and we (the Oromo) are losing our symbol, *Odaa*. So, he asserts that this time is a high time for either to work hard to use that culture and conserve our forests to retain our symbol *Odaa* or to remove it from the emblem.

Therefore, failure to apply indigenous knowledge of the Oromo in general and of the Guji in particular in conservation of forests seems to have contributed to the continued destruction of the existing meager natural forest resource in the region. The assumption is that, even though much is known about the indigenous knowledge of Oromo including Guji, a lot has not been yet explored and transmitted to the new generation either through formal or informal education as the Guji are among the few Oromo groups who have maintained the culture of Oromo (Asmarom, 1973; Dhadacha, 2006).

2.8 Factors Hindering the Development and Use of IK

There are a number of factors that could hinder the development and use of indigenous knowledge in conservation. Some of them are presented below. These factors often overlap.

2.8.1 The Suppression of Indigenous People

The suppression and the subordination of indigenous people are mainly associated with colonization and the dictatorial rule of those who are in power. As it was evidenced in colonized countries of Africa, Latin America and Asia, the indigenous people have lost their traditional ways of administering, managing and using their natural resources (Le Breton, 1993; Bhatt, 1993; Oteinde, Ezaza & Boisvert, 1997; Fabricius, 2004). The colonizers confiscated the lands of the indigenous people and often exploited their natural resources in unsustainable way. The indigenous people were made to leave out their own cultures and accept that of their masters. It was in such a way that the indigenous people have lost their indigenous knowledge (Warren, 1992; Oteinde, Ezaza & Boisvert, 1997).

Likewise, the Oromo of Ethiopia have lost their traditional way of administering themselves during the last two decades of the nineteenth century as a result of Menelik's conquest supported by the then great European powers: Britain, France, Italy and Russia (Woldeyohannes & Gemetchu, 1994/1986; Asafa, 1993; *Mootii*, 1996/1989; *Gadaa*, 1988, 1999; Jemjem & Dhadacha, 2011). This happened during the colonization of African countries by the great European powers of the time. Hence, the Oromo had faced two suppressing powers: the great European powers (Britain, France and Italy) that had great interests to control the Horn of Africa and the then regimes in the North led by Menelik II who were expanding their territory toward the southern parts of the region by conquering the indigenous peoples of the region including the Oromo.

The Europeans wanted to use regimes in Ethiopia to weaken the power of their rivals so as to capture the Horn of Africa easily. In the meantime, Menelik II got a lot of

armaments from the competing European powers in the region. Rather than fighting the great European powers, Menelik II chose to use the weapons he had obtained to conquer the southern parts of the present day Ethiopia (*Gadaa*, 1999; Woldeyohannis & Gemetchu, 1994/1986; *Mootii*, 1996/1989; Jemjem & Dhadacha, 2011). In line with this, Tesema succinctly states the conquest of Oromo by Menelik as follows:

> *The last quarter of the nineteenth century was a crucial period in the history of the Oromo. It was the time when the independent Oromo monarchies of Maccaa of the southwest, the Tuulamaa chiefs of central Shawaa, the Arsii, Baalee, Boorana, Gujii, Karrayyuu as well as the Harargee of today's eastern Oromia had been conquered and subjugated by king Menelik (later emperor of Ethiopia, 1889-1913)…. This period witnessed the crushing defeat of the Oromo by Menelik II who used the policy of divide and conquer among the Oromo and firearms he had obtained from the Europeans (Tesema, 2004: 5).*

Consequently, the Oromo suffered directly from oppression imposed on them by the Europeans in parts of *Booranaa* and Oromo in Kenya (Bassi, 2003) and by the conquerors led by Menelik in almost all parts of Oromia and indirectly through the support given to Menelik by these powers. As a result, the Oromo have lost their land, their natural resources; and their traditional socio-political administration: the G*adaa* System was outlawed (*Gadaa*, 1999). The former egalitarian democratic system of administration, *Gadaa*, had been replaced by slave owning and feudal systems in almost all parts of Oromia (*Gadaa*, 1999; Asafa, 1993; Woldeyohannes & Gemetchu, 1994/ 1986; *Mootii*, 1996/1989; Jemjem & Dhadacha, 2011).

Slavery, which had no roots in the culture and beliefs of Oromo, was introduced and expanded in Oromia (*Gadaa*, 1999: 64). Contrary to this, Article 14 of the Wuchale Treaty of 1889, between Menelik II and Italy, for instance, states that "as Christianity does not allow slave trade, the emperor of Ethiopia must stop slave trade in his country" (Tekletsadik, 1961: 44). However, slavery had continued in the country and Ethiopia was accused for exercising such a rule (whereby killing one another and looting were common) when she applied to be the member of League of Nations in August 1923 (Tekletsadik, 1961: 147). In contrary to the conquerors, the Oromo do abhor slavery.

They never reduce the vanquished to servitude. As soon as a slave falls into the hands of the Oromo, s/he is freed and adopted into the domestic hearth according to a family right that is appropriate to her/his age and sex (Salviac, 1901: 337).

The Oromo eventually became landless and tenants for the conquerors. Accordingly, about 2/3 of their land was taken by the conquerors and the Orthodox church; about 1/3 was given to those Oromos, who cooperated with Menelik in the conquest of Oromia on condition that they would supply service to the conquerors and pay various taxes, dues and tithes to the Orthodox Church and the treasury (*Gadaa,* 1999: 63).

Traditionally, the Oromo believe in and worship one God (*Waaqa tokkicha*) under trees, along rivers and on mountains (Asmarom, 1973; Workineh, 2005). Their ritual practices under *Odaa* were prohibited and *Odaa* was replaced by the Orthodox Church in many parts of Oromia (Woldeyohannes & Gemetchu, 1994/1986). The *Safuu*, norm of the Oromo in conserving natural resources had been denigrated. The indigenous knowledge of the Oromo in political, economic and social aspects including the conservation of natural resources was outlawed and suppressed by the conquerors (Menelik and his followers who were involved in the conquest of Oromia). As a result, let alone exercising their indigenous knowledge, the Oromo lost their lives and their humanity. The use of *Afaan Oromoo* in public affairs: schools, offices and the court was prohibited (Mekuria, 1994; *Mootii*, 1996/1989). Oromo names of places were changed into Amharic names as in the case of *Fininnee* to Addis Ababa, *Adaamaa* to Nazareth, *Bishooftuu* to Debre Zeit, *Ciroo* to Asebe Teferi, *Walisoo* to Gihon, *Adoolaa* to Kibre Mengist, *Kuukuu/Bulee Horaa* to Agere Mariyam, etc.

The suppression of Oromo and the exploitation of their resources have continued in different forms. Pertaining to this, Bassi (2003: 4) asserts that the total absence of any consideration for the local communities both during the imperial time and the following socialist period produced an antagonistic feeling towards government protected areas. For instance, the antagonistic feeling of the *Karrayyuu* elder towards Ethiopia's regime's

ignoring of the needs and the interests of the indigenous people of *Karrayyuu* in establishing the Awash National Park in 1969 is expressed by Buli as follows:

> *Hailesilassie, Ethiopian emperor, sent his ministers. They asked us whether we agree to the establishment of the park or not. Their question was not genuine since they had already taken all the land without consulting us. It was intended to produce a pretext to arrest us as usual. We told them that we did not give all of our land since we had no other place but part of it. We then, agreed out of fear, obviously, to give the land east of the Fantaallee Mountain for the park. They agreed to give us land west of Fantaallee Mountain. We accepted since we could not do anymore. When they prepared a map of the park and began to protect the land, the thing was different. They reversed the agreement: the map of the park included areas west of Fantaallee Mountain, which they previously agreed to give us. They evicted us. They built a camp in our settlement areas. We repeatedly asked the government and the park to respect our joint agreement but nobody listened to us … (Buli, 2001: 86).*

Disregarding the interests of the indigenous people in conservation process has brought about the looting, damaging and destruction of the facilities and resources of protected national parks and forests in Ethiopia (Bassi, 2003: 4). Moreover, the failure to recognize the culture of the local people and imposing the alien one could develop hatred in the people toward a conservation program. It is from this point of view that a *Karrayyuu* elder, *Qasaro Jiloo*, stated that they know how to rear cattle and how to live with wildlife. He said, "Our cattle are more familiar to *Saala* (Oryx) than are cars of the government to *Saala*. Our spear is less harmful than guns of the governments and hunters. We are forbidden to live with S*aala* while Hailesilassie and the Faranji (White men) are allowed to kill our *Saala*" (Buli, 2001: 62).

From this, one can understand how much the indigenous people are marginalized and excluded from at least having a share from their resources. The way the informant expressed his feelings seems to show his disappointment toward what happened to his people by the Hailesilassie's regime. The government was ordering the indigenous people to do what its agents were not doing. Accordingly, while the government people and foreigners were killing the wild animals, the indigenous people were not allowed to put their feet in the park.

The marginalization of the Oromo was not limited to Hailesilassie and the former rulers of Ethiopia. It has continued under the successive Ethiopian rulers. For instance, from 1970s onwards, the Borena environment was confronted with the major land use changes. The socialist government limited mobility within the ethnic territory and promoted agriculture. The situation degenerated further after the change of the government in 1991(Bassi & Tache, 2007: 66). UN-backed returnees programs and other development initiatives supported by international funds meant that the entire portion of Borena territory, including two *Tulaa* territories, was entrusted to neighboring groups. More land resources were lost by the Borena in the process of economic liberalization and globalization. Large ranches were acquired by international investors and extensive portions of land around the towns located in the critical dry season pastures were assigned to town dwellers and to non- Borena immigrants for small holding cultivation.

Since common property and indigenous land rights are not recognized in Ethiopia, the Borena's territory has been treated as if their common land was 'no man's land' to be assigned to whoever claimed it. The Borena have been squeezed into the direct pockets where their grazing land was bound to be deteriorated and they have been deprived of their drought grazing reserves (Oba, 1998). Hence, the only possible survival strategy for the Borena has been to engage in farming in the remaining least suitable places, both to obtain some food during years of good rain and to secure some land rights to the community in the long run (Bassi & Tache, 2007: 66).

Similarly, the conquest by Menelik II in 1890s alienated the Guji from their lands. The vast territory over which the Guji once roamed freely with their herds was reduced and a large area of land came under the ownership of the government, church, administrators, soldiers and other settlers from the north, and *naftegna-gabbar* (serfdom) system was established (Taddesse,1995: 143). Under *naftegna-gabbar* system, each of the *naftegna* (conqueror) was supported by a number of indigenes (*gabbar*). It was required that the *gabbar* (indigenes) provide grain and animals for slaughter, along with labor in fields and households of the *naftegna*. In addition, taxes were collected from each area, part of which was sent to Menelik's central treasury and part was kept by the local officials

(Hinnant, 1977: 22). The exploitation gradually reduced the *gabbars* to the status of semi-slave tenancy and poverty, which is one of the causes of environmental degradation (Taddesse, 1995: 144).

The conquest of the Oromo and subsequent suppressive rules by Ethiopian regimes has degraded the indigenous knowledge of Oromo. Accordingly, the indigenous knowledge of the Oromo on conservation of resources has been deteriorated and replaced by the exploitative approach to forests (Slaviac, 1901). The great destruction of forests in Ethiopia seems to coincide with the conquest of Oromia and the Southern parts of Ethiopia and the subsequent dictatorial rules in the country. In relation to this, Mulugeta (2008: 5) notes that according to the most reliable sources, there had been massive deforestation in Ethiopia between 1885 and 1985 in which the forest cover of the country had declined to below 4%. Similar to the situation in Oromo, one of the major problems that indigenous people have been facing throughout the world is the deprivation of their rights to stay on their lands and exercise their traditional practices of livelihoods (Ashini, 1993; Arabgali, 1993; Kamal, 1993; Le Breton, 1993).

2.8.2 Globalization and Market Economy

The very essence of globalization appears to be the interconnectedness among peoples of the world as socialization goes on through education, modern communication media, international trade and migration of peoples. Some argue that globalization is neo-colonization of developing countries by the developed ones economically, socially and politically as there is no favorable ground for competition (Mander, 1991; Omari, 1990). Consequently, in Africa, indigenous knowledge is in a severe danger of being completely destroyed by the subordination imposed on subsistence economy by market economy with its capitalist mode of production, which emphasizes an accumulation of wealth and the state control of natural resources (Omari, 1990: 172). The state control of natural resources has made the indigenous people not to exercise their traditional ways of managing resources (Bassi, 2003; Bassi & Tache, 2007).

The Western value systems have had extremely negative and devastating effects on the traditional African land use ethics. Being influenced by new values, people now use natural resources as objects for exploitation and profit making. Value systems which used to help keep balance between humans and the environment are no longer in place; instead, we have value systems controlled and motivated by the greedy accumulation of capital by individuals. As a result, even ethical decisions regarding management of land and natural resources are guided by production principles that emerge from market economy and globalization (Omari, 1990: 171).

In Africa, in most cases, the development goals have been designed from the top, mainly by outsiders, and imposed on those at lower levels for implementation. After many years of spending resources, they are found to be irrelevant and incompatible. This incompatibility is a failure of policy making (Workineh, 2005: 19). Some also argue that the so-called 'market economy' is, in reality, only a public relation term to conceal the larger global picture: the forced abandonment of local controls on development, trade, prices or life styles in favor of new, centrally planned economy supervised by banks and corporations and enforced by the U.S military (Mander, 1991: 379). This seems to be indirect way of controlling the world economy.

The programs that run in many of the developing countries by the name of development and investment have been removing the indigenous and the local people from their land and preventing them from using their indigenous knowledge to lead their day-to-day lives. Many examples of this situation could be cited from Ethiopia. The establishment of the Awash National Park (Buli, 2001: 86), which removed the *Karrayyuu* from their grazing lands is a typical example of this situation. In the same way, the establishment of Gumaro Tea Plantation in *Iluu Abbaa Booraa* (Workineh, 2005: 19) evicted the indigenous people from their land and devastated the tropical forests of the area.

The eviction of peasants from their lands in Oromia by the name of investment has been increasing. For instance, the eviction of the peasants from their lands, particularly from around the major towns extending from *Finfinnee* to *Adaamaa* along the high way, where

it is difficult to get unoccupied land by investors, is something that worries not only the indigenous people removed from their land with inadequate compensation but also the mere observers of the situations. Much of the land in these areas is among the most fertile agricultural lands in Ethiopia. However, it has mainly been used for construction of different industries, not for agriculture. The horticulture that has been expanded in these areas has also declined the fertility of the land for cultivation of cereal crops. The chemicals used for the cultivation of the flowers are believed to pollute the soils of the area. The dislocation of the indigenous people from their lands is not limited to towns and their surroundings but has expanded to forest and semi-forest areas in the case of *Baakkoo,* west Shewa, whereby the indigenous people were removed from the vast tracts of land by foreign investors. This problem is observed even in remote areas as in *Baabbilee* in east *Harargee*, where the natural abode of elephants is affected by investors, and in pastoralist areas of Borena as indicated by Bassi (2003). This eviction of the indigenous people from their lands has discouraged the people from applying their traditional methods of managing natural resources and put the vestige forests of the areas in danger.

Concerning this, the Asian Consultation Workshop on the Protection and Conservation of Indigenous Knowledge, convened in East Malaysia in 1995, recognized that "indigenous knowledge is closely linked to land which can be taken away from indigenous peoples. Thus, the need to protect and conserve indigenous knowledge is just as important as the struggle for self-determination," (Semali & Kincheloe, 1999: 353).

The dominance of modern education and modern mass media by Western culture and their utilization as instruments of globalization also seems to have suppressed the indigenous knowledge and its application in modern conservation practices.

2.8.3 Resettlement of People

Resettlement of people takes place for different purposes. In many of the cases, drought, famine and wars are considered to be the driving forces for resettlement in the Sub-

Saharan African countries. In these countries, people leave their original homeland and go to new areas in search of new land for resettlement as well as for different economic activities. The resettlement program that has been carried out during the Dergue regime in which people were moved from the northern part to the south-western part of the country has brought a great damage to the few existing natural forests in Ethiopia (Dereje, 2007; Zelalem, 2009). Even though the government associated the cause of the resettlement of people with drought and famine, the liberation armed groups in the country at the time blamed the government for making them lose the support of people in the north and for arming the settlers and using them against liberation movements in southwestern part of the country. In reality, many of the areas from and to which the people moved were places where liberation movements had been operating. Whatever the case, the causes of the resettlement of the time is beyond the scope of this study and will not be treated further than this.

Dereje (2007) identified that the coffee forest destruction in 1973-2005 in Benchi, Sheka, Yeki, Gura Ferda and Godere woredas in Gambella and Southern Regions was linked to historical events of resettlement and villagization and the expansion of state farm programs. During these periods, the forest cover of the study area was reduced by 11%. From this, 24% of the forest loss was caused by converting high forest into coffee plantations. In the latter periods too, forests have been converted to agro-forestry systems, agricultural land and resettlement areas.

The study by Bassi and Tache (2007) in Borena has also shown how the resources of the region were highly affected by the settlers who either do not know the indigenous knowledge of the people or are unwilling to accept the norms of the indigenous people on conservation. In Guji, settlers from the north and from the neighboring groups (who were settled by *naftegna* landlords) have progressively increased population in the zone. In addition to this, between the late 1960s and early 1970s, the Ethiopian government had settled 2000 to 5000 Gedeo farmers on *Anfaraaraa* Mountain, near *Adoolaa* Town (Kibre-Mengist). As they are intensive *enset* and coffee farmers, the Gedeo have destroyed much of the forest on which they have settled. Moreover, the southward

expansion by the Sidama and a settlement scheme by the Dergue have put Jamjam (Guji) under relative population pressure (Taddesse, 1995: 145).

A similar study conducted by Zelalem (2009) on settlers in *Angar Guutee*, *Jiddaa (Giddaa) Ayyaanaa*, *Abee Dongoroo* and *Limmuu* woredas (districts) in *Wallaggaa* revealed that state sponsored and self-initiated resettlements had brought a negative impact on the ecology of the areas. The number of settlers had increased highly and they had been clearing and/or burning the forests of the areas for agriculture. As a result, the former forest and savannah land has been changed into a barren land. Zelalem (2009: 893) identified that the mobile psychology that the settlers had developed made them unconcerned about conservation of the natural resources of the area. That means, they had the preconception and the feeling that, if the situation became good, they would go back to their homelands. However, the indigenous people were very much concerned about the destructive action of the settlers. As one of the informants in Zelalem's study said, the forestland that their fathers and forefathers had kept intact for many years has been changed into barren land within few decades. Zelalem (2009: 889) concluded that, if the situation then continued, the settlers would run out of natural resources and would be forced to search for another area for a new resettlement, which would involve not only the settlers but also the indigenous people. Hence, he warned that, resettlement has a great damage on the biodiversity of a given area and that it is not recommendable.

In 1981, when I was in grade 6, the *Angar Guutee* area was a semi-forest wood and savannah land. At the present, it has been changed into a barren land where it is difficult to get trees. The resettlement program that was carried out in large scale and the state farm during the Dergue Regime and self-initiated resettlement that has been going on until today in very marginal lands of these areas seem to have contributed to the degradation of the land. The highlands of *Jiddaa Ayyaanaa* Woreda (District) which had been settled by the indigenous people very much earlier than the resettlement of *Angar Guutee*, are far better than the latter in their vegetation coverage. It was in 1985 that I, for the first time, saw settlers who came from the northern Ethiopia cutting growing trees and selling them as firewood in the small towns in the area. In general, resettlement program

seems to bring people of different culture to a new area and it is most often damaging to the environment. Hence, a resettlement program is not advisable.

2.8.4 The Influence of Religions

The Oromo were originally *Waaqeeffataa*. They believe in one God, *Waaqa tokkicha* and associate creatures with the creator (Asmarom, 1973; *Gadaa*, 1999; Workineh, 2005). They believe that the misuse of natural resources would bring punishment from *Waaqaa*. This traditional belief system has contributed to the conservation of natural resources in general and forests in particular (Lalisa, 2008; Workineh, 2005). However, with the introduction and expansion of the modern religions, Christianity and Islam, the traditional belief system has declined.

It was noted that the influence of the Orthodox religion became strong in Oromia in the last quarter of the 19th century (Workineh, 2005: 16) with the conquest of the Oromo. The Orthodox Church played a significant role in propagating the subjugated people to accept the rules of the conquerors and, in return, it got large tracts of land from the emperors (Woldeyohannes & Gemetchu, 1994/1986). In Borena, for instance, the conquerors forced the *Gadaa* leaders and the indigenous people to be converted to Christianity. They went to the extent of shaving the head of *Gadaa* leaders (Workineh, 2001b). In spite of such harsh measures, most people opposed the new religion. However, many *Qaalluu* leaders became Christians as the ruling regime offered them valuable feudal titles in return for their cooperation. They were given a semi-equal position with the rulers and were used to establish suppressive rules against the Oromo people. The conquerors cut down the *Dakkii* trees, burned the G*almaa* (ceremonial hall) and they threw ritual beads into rivers. They also cut down trees from traditional graves (Workineh, 2005: 16).

Daniel (1984) indicates that the systematic approach of Swedish trained Ethiopian Protestants enabled them to win the confidence of local chiefs in *Wallaggaa.* They translated religious books into Oromo language. Village schools were established by Protestants to propagate their religion. The schools were open to all local chiefs and

peasant farmers. The Protestant missionaries also provided some medical services to the people. These enabled them to attract many followers.

Unlike the Orthodox Christians, the Protestants have played a great role in the development of *Afaan Oromoo* and the expansion of modern education in Oromia (Mekuria, 1994). On the other hand, the *Raayyaa, Azaboo, Yajjuu*, and *Walloo* Oromo in the north, Harar in the east and the Gibe states in the west were mainly converted to Islam due to a number of factors such as the Turko-Egyptian conquest of Harar and/or the influence of Muslim merchants, and avoidance of the domination by Christian Abyssinians (Asma Giorgis, 1987) in Workineh (2005: 17). Even though Islam had no backing from the government, it had also subverted many aspects of traditional religion (Workineh, 2005: 17).

Many researches show that the traditional religion/ belief system of the Oromo has contributed to the conservation of forests (Workineh, 2005; Lalisa, 2008; Bassi, 2003; Bassi & Tache, 2007). However, it appears that the modern religions have been working against the traditional religion. On the other hand, Pankhurst et al (2008: 20) argue that the presence of the remnants of forests surrounding the central Orthodox Churches in the northern highlands of Ethiopia indicates the role of the church in conservation.

The insightfulness of the researchers to focus on small patches of the forests around the Orthodox Churches in the northern Ethiopia is appreciable. One may argue that the presence of forests near the churches could indicate that the land in that part of Ethiopia was formerly a forestland and that the forests have been destroyed. The presence of trees near the churches may be attributed to the norm of the people for respecting church lands and the very nature of grave yards' fertility to grow plants. Moreover, some church people may grow garden plants around churches. However, the argument of Pankhurst et al (2008) does not seem to be true in Oromia as the Orthodox religion played its role in weakening the traditional belief system, and in some areas, had in fact, destroyed the traditional ritual places and their natural resources (Woldeyohannes & Gemetchu, 1994/1986).

The Orthodox Church may have conservational value as stated by Pankhurst et al (2008). But it does not seem to have a significant relationship with the distribution of forests in Ethiopia. Had the churches been closely associated with conservation of forests, we would have found large forest cover where there are many churches. In Oromia, the reverse seems to be true (Stitz, 1975: 20) as the forest cover is even less in zones such as Shewa, where there are many Orthodox Churches and greater in zones where there are less number of churches as in *Jimmaa, Iluu Abbaa Booraa, Wallaggaa, Gujii* and *Baalee*. As identified by OBARD (2007), the major state forest areas including natural forests and plantation are in *Jimmaa, Iluu Abbaa Booraa, Baalee, Boorana-Gujii* and *Wallaggaa.* Moreover, there are abundant forests which are out of state demarcated forests particularly in *Iluu Abbaa Booraa, Jimmaa, Wallaggaa, Baalee* and *Gujii.* On the contrary, as could be observed from (Table 1, p 62), Orthodox Churches are mainly concentrated in the northern parts of Ethiopia and northern part of Oromia, where the forest cover is less. The total area of the church land was small in the north and large in the south (Stitz, 1975: 20). Even though the data is not complete and there are certainly more churches in Ethiopia, it shows the overall picture of the geographical distribution of Orthodox Churches in Ethiopia (Stitz, 1975: 11-12).

The large tracts of land under the church in southern Ethiopia, particularly in Oromia, could be attributed to the conquest of Oromia in which the indigenous people were deprived of their right to use their lands or evicted from their lands which the church owned and used for collecting taxes by renting the lands to the indigenous people (*Gadaa*, 1999; Woldeyohannes & Gemetchu, 1994/1986). Even in the southern parts of Ethiopia, where the church has controlled extensive land, there does not seem to be a direct association between forest conservation and church land as much of the remaining forests are found in south western and southern parts of Ethiopia including *Wallaggaa, Iluu Abbaa Booraa, Jimmaa*, and *Gujii* in Oromia and parts of Southern Nations, Nationalities and Peoples' Regional State.

Church lands are not meant for conservation purposes but for getting income. Church lands were estimated at 10 to 12 % of arable land in the country (Desalegn, 1984: 19).

They were often divided into plots and cultivated by the clergy. Some lands were rented out to tenants. In fact, about one quarter of the peasantry cultivated church owned land and were paying one-fifth to one-third of their produce to the church (Girma, 1992: 13).

Table 1: The Orthodox Churches and their Land areas in Administrative Regions

Administrative Region	Number of Churches	Church Land in km^2
Gojjam	2635	**23**
Gondar	2260	**33**
Tigray	2090	**32**
Shewa	2404	**35**
Wello	1496	**53**
Eritrea	760	**155**
Bale	58	**2148**
Arsi	193	**122**
Wellega	274	**260**
Ilubabor	136	**349**
Kefa	207	**264**
Gamu Gofa	105	**376**
Sidamo	124	**954**
Hararge	**95**	**2734**

Source: Stitz (1975: 20).

In general, even though there could be other contributing factors for the forest cover in the country, there does not seem to be a direct association between the distribution of Orthodox Churches and forests, particularly in Oromia. Had there been direct relationship, the northern parts of Ethiopia with the large number of Orthodox Churches and Hararghe and Bale with extensive church land would have been with large forest cover in Ethiopia.

2.8.5 The Pervasive Effects of Poverty

Poverty is one of the major driving forces for the deterioration of indigenous knowledge on conservation of natural resources. On the one hand, people want to maintain a healthy and safe environment, and on the other, they want to satisfy their basic needs. Even many of the people of developing countries wish to have a western style of life as a result of the influence of the Western World. Naturally, only few people chose to confine themselves to small scale economy. However, maintaining a sustainable balance between satisfying one's own needs and having a healthy environment without destroying the resource base is a very difficult task because of poverty and environmental degradation (Workineh, 2005: 26). If the local people do not have alternatives during the time of crisis, they may be forced to stop their traditional practices of conserving resources. Poverty has compelled peasant farmers to avoid traditional conservation practices by cutting down trees and killing some wild animals beyond the limits or in violation of their indigenous ethical codes. They act desperately against ethics in order to meet their immediate survival needs. That means, unless the poor have alternatives, they may not maintain environment-friendly practices. Hence, famine, war, external interventions and other environmental crises may lead to displacement or death of people and thereby to the breakdown of indigenous knowledge (Workineh, 2001b).

The poor need to be given alternative means of survival rather than prohibiting them from using resources. For example, the poor may be asked to stop charcoal making, firewood collection and cutting down trees without being offered alternative sources of income.

Another aspect of how poverty affects indigenous knowledge concerns the practice of high placed officials compelling extension workers and low level government officials to collect different types of fees mostly by force and to serve in police, cadres, leaders and health officers in most cases in activities that are not in harmony with their societies' norms due to poverty (Workineh, 2005: 26). These high level officials also encourage the imposition of huge projects on communities that in turn break down established styles of life and introduce profound confusions into their world.

2.8.6 Western Education System

Western education system which had been introduced to Africa and other developing countries with the aim of inculcating western values in African bodies was not in a position to reflect the indigenous knowledge of Africans. Workineh (2005: 15) argues that many of the western trained academics do not give value to indigenous knowledge, and they claim that Africans, in the name of 'development,' 'democracy' and 'human rights', can simply dissolve and become 'Westerners'. This conception could be attributed to their indoctrination in the Western education system and to the lack of good understanding of indigenous knowledge system. It is true that the imposition of foreign Western curriculum that devalues indigenous knowledge (Maurial, 1999) has a great impact on the attitude of those who have been educated with it and on the indigenous knowledge which has become its prey. However, it does not appear easy dissolving indigenous people and making them to be Westerners as indigenous knowledge is not separated from the real life of the indigenous people (Maurial, 1999: 63). Nonetheless, as modern Western education has great power of influencing people, its impact on the young generation is so high.

Modern education system which was introduced to developing countries from the Westerners has failed to reflect the real situations of the countries and has had a debilitating impact on indigenous knowledge (Semali & Kincheloe, 1999; Maurial, 1999; Ulluwishewa, Kaloko & Morican, 1997). Schools consequently have consecrated Western world view and alienated students from learning practically in their environment and from their parents and community (Ulluwishewa, Kaloko & Morican, 1997; Semali, 1999; Maurial, 1999). Concerning the irrelevance of the Western education system to the real situations in Africa particularly to his country, Tanzania, Nyerere stresses that:

> *At present our pupils learn to despise their own parents because they are old-fashioned and ignorant; there is nothing in our educational system which suggests to the pupil that he/she can learn important things about farming from his/her elders. The result is that he/she absorbs the beliefs about witchcraft before he/she goes to school, but does not learn the properties of local grasses; he/she absorbs the taboos from his/her families but does not learn the methods of making nutritious traditional foods. And from school, he/she acquires knowledge unrelated to agricultural life. He/she gets the worst of both systems (Nyerere, 1968: 278).*

The observation of Julius Nyerere, the first president of Tanzania, still holds true in the 21st century in many of the developing countries' education systems. In Ethiopia, for instance, the introduction of modern education is directly related to the activities of the Western missionaries (Derebssa, 2008: 62). The main purpose of the missionaries was to expand their faith. The modern state education, which was based on missionary education and taken from the Westerners, has not been in a position to reflect the needs and interests of the people. For instance, in the first state school in Ethiopia, Menelik II School, the subjects taught were English, French, Italian and Arabic, and the knowledge of Amharic was a prerequisite to join the school. Hence, for the first 20 years, Menelik II School could not be considered as a proper school, rather as a foreign language institute (Teshome, 1979). As a result, the education offered in the school was against the indigenous knowledge practices. From this, it can be easily seen how much it was rare and very difficult for non- Amharic speakers to join the school.

After protracted attempts to revise the curriculum at different times by Ministry of Education, the problem of Ethiopian education in terms of relevance, equity, quality and accessibility is explicated in the Education and Training Policy of the country (ETP, 1994). Even though there is a better achievement in accessibility and equity recently, after the implementation of ETP, quality has remained a big challenge to Ethiopian education (Derebssa, 2008: 89).

Though the attempt that has been underway in using some of the native languages as media of instruction and official languages in Ethiopia is appreciable, there remains a

challenge to indigenize the curriculum as much of the work done so far is mainly translation from the materials written in Amharic and/or English. Furthermore, the commercialization and the privatization of knowledge has increasingly become a challenge to indigenous and local way of life. Large transnational corporations are gaining an increasing level of control over the production and distribution of knowledge (Workineh, 2005: 20). For example, the developments in genetics have literally placed the role of God and Darwinian evolution in the hands of profit-oriented corporate executive offices. More specifically, in many developing countries, transnational corporations have undermined the diversity of traditional crop varieties through genetic engineering (Posey & Dutfield, 1996: 15). Private companies and foreign and Ethiopian intellectuals freely derive knowledge and resources from peasant farmers and demand copyright and other forms of legal protection for themselves without acknowledging the Ethiopian peasant farmers, religious leaders and the community in which the knowledge originally developed. These factors have gradually weakened indigenous knowledge (Workineh, 2005: 21).

In general, it is necessary to understand that Western modern education system and its commercialization has put a great pressure on indigenous knowledge and its use in the day-to-day life of people.

2.9 Revitalizing Indigenous Knowledge

After identifying the uses of indigenous knowledge in conservation and the factors hindering its development, it is appropriate to consider how to revitalize and use it in modern conservation practices.

2.9.1 Postmodern Philosophy and Theory for Revitalizing IK

Postmodernism is a broad and ambiguous belief system tied to philosophical and cultural reactions to modernism. It is a diffuse sentimental rather than a common set of doctrines

(Griffin et al, 1993: vii). Postmodernism is characterized by resistance toward certainty, rejection of fixed notions of reality, knowledge or method, acceptance of complexity, multiplicity, and refusal to accept hierarchies in ways of thinking (Atkinson, 2000: 7). Proponents of postmodern philosophy, therefore, reject many of the perspectives of idealism (universal truth and values), realism (unchanging truth outside humans' minds) and pragmatism (emphasis on systematic or scientific knowledge) (Armstrong, 2003: 107-111). They suggest that "these positions have been built almost exclusively around European patterns of thought. This kind of cultural baggage distorts reality and imposes a highly limited set of perspectives on individuals" (Armstrong, 2003: 111). To counteract this problem, postmodernists propose that efforts to identify reality should focus on individuals and communities and the unique approaches they take to construct reality. As moral truth resides in the local community, there is no overarching rule that shows what is real and how to behave for all. This requires a wide ranging study of cultural artifacts of various kinds, including legends and myths (Armstrong, 2003: 111).

Postmodern perspective in education is in line with the constructivist position that each student builds a personal set of knowledge which evolves as s/he relates new information and puts together with the previously held understandings (Piaget, 1971). Moreover, it goes with Vygotsky's social constructivism in that social interaction, cultural tools and activity shape individual's learning and development (Woolfolk, 2010: 312). Postmodern philosophy helps to entertain the needs of diverse groups in this culturally and racially mixed world (Armstrong, 2003: 111). There are variants of postmodernism (Marsh, 2004: 225).

2.9.1.1 Post-structuralism

Post-structuralism criticizes modernity by challenging a structuralist view of the world (Marsh, 2004: 225). Structuralists, for instance, believe in invariant forms of knowledge and society that give meaning to the world. However, Foucault (1972) argues that attempts to establish such a system of homogeneity fail to take into account the underlying but changing social and political assumptions such systems are ultimately

built on. Structuralists identify systems to create meaning, whereas poststructuralists endeavor to dismantle systems to expose their variables and contingent nature (Slattery, 1995).

2.9.1.2 Deconstructionism

Deconstructionism is another variant of postmodernism which is involved in exposing contradictions and fallacies embedded in modernity (Marsh, 2004: 226). The idea of deconstruction does not mean tearing down; rather, it implies the need to be alert to contradictions and fallacies in Western thought and fallacies, and to the implications to the historical sedimentation of the language we use (Derrida, 1972). Deconstruction would, for instance, announce the liberation of writing from the repression or subordination to speech (Sallis, 1987, xii). Deconstruction aims at constructing knowledge from self-understanding. Lather (1991a: 88), for instance, contends that using feminist research, an emancipatory concept of language and power will emerge in education. This requires self understanding and determination.

2.9.1.3 Post-colonialism

Post-colonialism challenges the ideological and material legacies of imperialism and colonialism (Giroux, 1992). It also signals the need for teachers to create learning situations so that students become border crossers to write, speak and listen in a language in which meaning becomes multi-accentual and dispersed and resists permanent closure (Giroux, 1992). Post-colonialists challenge imperial centers of power and contest the dominant Eurocentric writing of politics, theory and history. Spivak (1985) argues that it is necessary to unlearn one's own privilege; the legacy of colonialism must be examined to make visible the various exclusions and repressions that permit special form of privilege to remain (for example, privilege that benefits males, whiteness, and heterosexuality and property ownership).

As one of the variants of postmodern theory, postcolonial theory also deals with the literary study in previously colonized countries (Mapara, 2009). It focuses largely on the way in which the literature by colonizers distorts the experience and realities of the colonized and promotes the superiority of the colonizers. The supporters of postcolonial theory, for instance, Spivak (1990) in Dimitiadis and Kamberelis (2006) and Said (1978) hold that, the main goal of postcolonial theory is clearing space for multiple voices specifically that have been previously silenced by the dominant ideologies. It is not simply concerned with salvaging past worlds but learning how the world can move toward a place of mutual respect. In this respect, Said (1978) stated that the Occident (West) could not exist without the Orient (East) and vice versa. He opposed the suppression of the Orient by the Occident and argued for mutual respect and the recognition of the knowledge of the Orient by the West.

Postcolonial theory deals not only with post independence events but also with the legacy of colonialism as in when indigenous people who are under colony reply to it by writing their own histories and legacies using their own colonizers' language (Gilbert & Tompkins, 1996; Ashcroft, 1990). Hence, as an extension of postcolonial theory, indigenous knowledge systems have been highlighted among the past glories and achievements of the formerly colonized people (Mapara, 2009: 143).

Spivak (1990), in Dimitiadis and Kamberelis (2006), argues for the 'subaltern', the suppressed voices to be heard. She opposed what she called 'epistemic violence', the destruction of non- western ways of knowing and the domination of western thought. She criticizes those who ignore the 'culture others' (the subaltern) and has offered constructive theories for allowing the West to go beyond its current position through self-criticism of western methods and ideals of understanding and exploring the alternatives offered by post-colonialism (Sharp, 2008). That means, the knowledge of the indigenous and colonized people needs to be considered in order to deal with the problems of the world.

Postcolonial theory as epistemology, ethics and politics addresses matters of identity, gender, race, racism and ethnicity with the challenges of developing postcolonial national identity, of how the colonized people's knowledge was used against them in service of the colonizer's interests and of how knowledge about the world is generated under specific relations between the powerful and the powerless, circulated repetitively and finally legitimated in service to certain imperial interests (Said, 1978). At the same time, it encourages thoughts about the colonized people's creative resistance to the colonizers (Fanon, 1961).

Even though Ethiopia is known for resisting colonization and remaining as an independent state in history, this does not seem to be true for the Oromo who were conquered by Menelik II toward the end of the nineteenth century. The Oromo have lost their rights of administering themselves, their land and, hence, the right to exercise their indigenous knowledge. Some writers argue that the Oromo were colonized by Menelik II, who was supported by Britain, France, Italy and Russia during the colonization of Africa by Europeans (Asafa, 1993; *Mootii,* 1996/1989; *Gadaa,* 1988, 1999; Jemjem & Dhadacha, 2011). Many people may not agree with this idea by associating colonialism only with the conquest of developing countries by overseas capitalist countries. However, many writers believe that there is an internal colony that exists inside the boundaries of a state (Hicks, 2004; Sornarajah, 1981; Calvert, 2001; Blauner, 1969; O'Neil, 1986). In relation to this, Sornarajah (1981) states that internal colonialism dismisses the 'salt water' thesis which holds that colonies can only exist overseas.

Hicks (2004) identified that internal colonialism was first used by Marxist thinkers in which Lenin considered the then Russian empire as internal market for capital-centered at St. Petersburg and Moscow and then wide spread during the surge of ethno-political mobilization around the world in the 1960s and 1970s. In Canada, for instance, internal colonialism had been excessively used by Quebecois and aboriginals, Dene and Inuit of the Northwest to describe the suppression on them. Theories of internal colonialism have been used to explain situations and movements literally around the world; for instance, in Brazil, Quebec in Canada, Northern Ireland, Nigeria, the Basque and Catalan in Spain,

Sudan, the former USSR, Blacks and Chicanos in USA, to mention some (Hicks, 2004). It has been extensively employed to explain the situations and movements of indigenous people in Africa, Australia, South and Central America and first nations in Canada and USA (Hicks, 2004). That means, internal colonialism appears to be associated with the problems that the oppressed people (including indigenous people) have been facing by suppressive rulers in different parts of the world.

Blauner (1969: 396) lists four components which are common to both external and internal process of colonization: firstly, a racial group enters into dominant society by force. Colonization begins with a forced involuntary entry. Secondly, colonization has an impact on the culture and social organization of the colonized people which is more than just a result of such 'natural' process as contact and acculturation. Rather, the colonizing power carries out a policy of constraints, transforms or destroys indigenous values, orientations and ways of life. Thirdly, colonization involves a relationship by which members of the colonized groups tend to be administered by being managed, manipulated by outsiders in terms of ethnic status; and fourthly, racism: a principle of social domination by which a group seen as inferior or different in terms of alleged biological characteristics and is exploited and oppressed socially and physically by super ordinate group. Thus, from the description given above, internal colonialism seems to be the suppression, subordination and exploitation of one group (be it a nation, nationality, group or clan) by the more powerful one within a country/state.

In Ethiopia too, some writers indicate the conquest, suppression and subordination of Oromo and other peoples in the southern Ethiopia. For instance, Tekletsadik, the writer of the history of Ethiopian emperors, explains how Ethiopia did not include Oromia and the southern parts of the present day Ethiopia. He states:

> *Atse Tewodros conquered Gojam, Gondar, Tigray, Wollo and the whole Shewa and united them and formed Ethiopia, a country of one emperor as in ancient time. Then, he thought of establishing church and state laws by which the people were to be governed (Tekletsadik, 1961: 14).*

From this, it appears that the emperor unified the mentioned areas and reformed Ethiopia as before. Moreover, Tekletsadik (1961: 42) wrote that, "*Atse* (emperor) Yohannes gave permission for king Menelik to expand his territory to the country west and south of Ethiopia," when Menelik was a king of Shewa (including the northern part of the present North Shewa of Oromia). Concerning the conquest of Oromia and the southern region by Menelik with the help of the weapons obtained from Europeans, Tekletsadik (1961: 109) reveals that Menelik got ten thousand guns and many bullets from Italians and bought many from France. He used these weapons to conquer Oromia and the southern region. Tekletsadik used the phrase '*hager magkinat/ masgeber*' (making the indigenous people tenants) when writing about the purposes of the Menelik's conquest of Oromia and the southern regions of the present day Ethiopia. He used the same term for colonization by Britain, "*Ye hine gizat yekenaw ye alem mahiber kemekomu befit newu sil ye ingliz mengist melisotal,*'' (Tekletsadik, 1961: 181). This was stated to express the argument between Italians and British in which Britain opposed Italy's plan to conquer Ethiopia and Italy's justification that Britain also conquered many countries of the world and made them her colonies. So, what was unique to the Italians? Britain, on her part, responded that she conquered these countries and made them her colonies before the establishment of League of Nations. Hence, Tekletsadik used the same term "*hager makinat*" for the colonies of Britain and the conquest of Oromia and the southern regions of the present day Ethiopia by Menelik. Therefore, Oromia and the southern region were not part Ethiopia that the writer was referring to before Menelik's conquest even though Ethiopia is understood differently from the writer's view in that it stands for the land of Cush in the Bible (The Bible Societies, 1971: 2). The Amharic version of the Bible used 'Ethiopia' instead of 'Cush', which is used in English and *Afaan Oromoo* versions. The name 'Cush' was substituted by 'Ethiopia' when the Bible was translated from Hebrew to the Greek language. In the Holy Bible written in Hebrew Language, the name 'Cush' is given to the population living south of the present land of Egypt used to be known by the name 'Sudan'. Hence, the Greek word 'Ethiopia' is a name that the Greeks had given to the population living south of Egypt. At later dates, the name 'Ethiopia' in turn was replaced by the Arabic equivalent 'Sudan' to mean the country of the black people. When the Holy Bible was again translated into Geez, the name given by Greeks remained

unchanged (OCTB, 2006: 15). Therefore, even though 'Ethiopia' has become the name referring to the land and people within the boundary of the present day Ethiopia, it is originally the Greek term for the Black Cushitic peoples of Northeast Africa to which the Oromo belong (OCTB, 2006: xv).

Though the issue of whether or not Oromia has been under colonization may be debatable among historians and politicians, it is obvious that the Oromo have lost their land and resources by force and became tenants for Menelik and his soldiers. They were also forced not to apply their egalitarian socio-political system of administration: the G*adaa* System. However, it is necessary to note that Oromia and the present day southern parts of Ethiopia were conquered and suppressed by those involved in the conquest and their supporters. Hence, the post colonial theory of reconstructing suppressed indigenous knowledge seems to work for the Oromo indigenous knowledge and, hence, for the Guji Oromo. In relation to this, Battiste (2002: 6-7) emphasizes that postcolonial and post-structural theories underscore the importance of indigenous knowledge and languages.

In my view, postmodern perspective is useful to challenge the suppressive political, social and economic structures working against the oppressed groups like indigenous people, the poor and females. In such a way, the needs of these marginalized groups in different parts of the world could be taken into account in educational and any development endeavors. In this study, it appears important to examine the impact of Ethiopian rulers on the indigenous knowledge of Guji Oromo on forest conservation. However, postmodernism appears to externalize things to colonization, conquest or oppression. Therefore, in addition to external factors, it is also necessary to see things from inside.

Postmodernists favor diversity, decentralization of power and democratization (Taylor, 2004). Hence, in the view of post-structuralism, the present study analyzes the elementary school textbooks in relation to their inclusion of indigenous knowledge and the current conservation practices in their entertainment of the needs of indigenous people. This may lead to the appreciation and maintenance of the existing curriculum and

conservation practices or their deconstruction of (Marsh, 2004: 226) and reconstruction in a better inclusive form.

2.9.2 Participatory Forest Management

Participatory forest management (PFM) is a management of forest in which the local community takes part in the planning, monitoring and evaluation of the whole process of the management program (Khanal 2007; Alemayheu, 2007; Tsegaye, 2008). As it is a community-based forest management with clearly defined roles and responsibilities and benefit sharing mechanisms among local community and the local governing body, PFM contributes to the improvement of forest conservation and the livelihoods of the community (Khanal, 2007; Tsegaye et al, 2007). If properly applied, it is a means of using indigenous knowledge of the community in conservation of forests. It is an approach in which the indigenous knowledge of the people and the modern education can be integrated in practice as local people and experts in modern education work in collaboration. Hence, it is one of the ways of revitalizing and using valuable indigenous knowledge of a community in conservation of forests and other resources. Accordingly, participatory forest management has become the current trend in developing countries as there has been a failure to bring about the intended sustainable forest management through top-bottom state imposed and controlled approach (Girma, 2006).

In participatory forest management, all stakeholders are involved in decision making process; forest blocks are allocated to forest dwellers; sanctions are put in place for those who do not comply with the laws and rules of the program, and the revenue generated is shared between the forest user groups and the government (Tsegaye, 2008:8).

Yonas (2007: 190) indicated that participatory forest management is at its infant stage of development in Africa tracing back it to the last 15 years at least at policy level with uneven development across the continent. Alden-Wiley (2003) reported that there were some 5000 communities with 3 million hectares of forest in Africa. Some sources show

that participatory forest management began in Oromia in the late 1990s (Dirriba, 2007; Alemayheu, 2007).

Participatory forest management covers over 140,000 hectares in Ethiopia. These include *Cillimoo* (West Shewa), *Adaabbaa-Dodolaa* (West *Arsii and Baalee*), *and Areeroo* (*Booranaa*), *Yaaballoo* (*Booranaa*), *Liiban* (*Gujii*), Belete Gara (*Jimmaa*), *Moojoo* (East Shewa) and *Baalee* mountains in *Baalee*. The rest are Bonga, Masha and Kaffa participatory forest managements, which are in Southern Nations, Nationalities and Peoples Regional State (Tsegaye, 2008: 9). Hence, most of the participatory forest management sites have been established in Oromia, of which one is in Guji zone.

The conventional way of studying forest conservation is identifying the causes of forest destruction and working on how to minimize and/or overcome them. However, it appears important to learn from the forest dwellers how they have lived with the forests without destructing them for such a protracted time. In line with this idea, this study attempts to investigate how forest dwellers and the people living around the forests are able to coexist with forests, with the intention of expanding their experiences to other similar areas so that it may contribute to the conservation of the already existing forests as well as the regeneration of the lost ones. The general trend in forest conservation these days, therefore, appears to be supporting the application of participatory forest management even though some implementation problems are encountered as the cases in Central African countries (Oyono, 2007) and Ethiopia (Alemayehu, 2007).

Oyono (2007) denotes that decentralization of natural resource management in Central African countries (Cameroon, DR. Congo, Gabon, Equatorial Guinea, the Central African Republic, and Republic of Congo) has not produced the intended results. According to this study, decentralization in the forest management and related financial benefits was not synonymous with the improvement of livelihoods and environmental sustainability. Hence, Oyono (2007: 30) recommends that natural resource management in the sub-region should indeed be democratic, participatory and fit to their respective policy, political and economic environments. Decentralization of forest management has to,

therefore, consider issues and conditions of rural democracy, community rights over resources, collective rural citizenship, and the very nature of the states in the sub-region. Hence, it is necessary to 'renew' the essence of the political and social software in which participatory forest management operates.

On the other hand, Khanal (2007) describes that the decentralized forest policy adopted in Nepal that involves multi-stakeholders participation in program planning, monitoring and evaluation of forests is one of the successful programs in Nepal. It includes approximately 15,000 forest user groups managing about 1.2 million hectares of natural forests with significant contribution to livelihoods of the poor. There is a lease forestry program whereby small groups of rural poor rehabilitate degraded natural forest through reforestation. A package program including farming of annual crops and animal husbandry is provided to support the livelihoods of the beneficiaries. A large block of productive forest is managed collaboratively by the local government and users in well defined roles and responsibilities, and benefit sharing mechanisms. The government also involves groups of the poor women in public land agro-forestry which is demonstrating substantial contribution to the livelihoods of these groups. Khanal (2007) concludes that the forest user groups in Nepal are moving forward to make the forestry sector development self-reliant at a local level thereby contributing to poverty reduction.

As could be understood from the description by Khanal (2007), of the experiences of participatory forest management in Nepal, the use of well defined rules and different modalities that could satisfy the needs of different people have contributed for the effectiveness of participatory forest management in sustaining the forests and reducing poverty.

Some experiences in Ethiopia also show that participatory forest management could play a significant role in reducing the destruction of forests by involving the community in the management of forests. A case in point is *Adaabbaa-Dodolaa* Forest User Groups in West Arsi and Bale of Oromia Regional state. Here, the former state owned *Adaabbaa-Dodolaa* forest priority area was transferred to forest user groups in the area named

WAJIB (forest dwellers and user groups) in *Afaan Oromoo*. A study on the status of the forest after it was transferred to forest user groups revealed that there was an improvement in the conditions of the forest (Abdurhaman & Tsegaye, 2002).

In their study on *Adaabbaa-Dodolaa* community forest, Tsegaye et al (2007: 202) also found that the carrying capacity of the community forest under the prevailing condition was eight hectares per household. That means, eight hectares of land supports one household. Based on this carrying capacity, the annual income of forest user groups was 7,360 birr per household in comparison with 4,820 birr for non-forest user groups. This shows that participatory forest management can lead to enhanced income for forest dwellers and improved conservation of forests. Their calculation is based on the material income of forests estimated in money. But forests have different advantages other than the material aspect such as modifying the climate of the area, serving for recreation, and being sources of streams. If these advantages are considered, they will add up the value of the community forests. Thus, it appears that participatory forest management could enhance sustainable forest management as well as sustainable development. This may contribute to increment in the number of participants in community forest management.

Dirriba (2007: xiv) states that, currently in Oromia, participatory forest management projects have proliferated and the changes and impacts on the forests and the livelihood conditions have been significant. He elaborates that, so far, in Oromia alone, about 110 forest management groups have been established by 4500 household members. Accordingly, some 100,000 hectares of forestland have been put under community management. Dirriba (2007: xiv) confirms that the Oromia Regional State is actively working with participatory forest projects to scale up the participatory forest management approach at regional level and incorporate it within its regular activities to expand and replicate the approach in different parts of the region.

Concerning the improvements after the establishment and functioning of participatory forest management groups, Hamu (2007: xx) observes that the vegetation has significantly increased; ecotourism activities have been promoted; pasture condition has

improved; community income generation from the forest products and non-forest based services have increased and work partnership between the community and the forest professionals has improved. He mentioned the above improvements based on his practical experiences of participatory forest management.

The study by Alemayehu (2007: 154) on participatory forest management in Ethiopia, however, revealed that despite the recent improvements over the past exclusive approach to forest management, many of the respondents (88%) mentioned that they were still either partially confident or totally skeptical; only 12% had full trust in the continuity of the participatory forest management program. The identified sources of distrust were attributed to frequent political changes and the associated shift in property rights and uncertainty with respect to the duration of rights and membership criteria. In participatory forest management of Ethiopia, the government owns the forest and forestland but vests usufruct rights to the local communities (Alemayehu, 2007: 151). The basic agreement on community involvement in participatory forest management is formulated in a contractual agreement between public officials (forest department) and forest user groups (organized local community groups). This contractual document contains internal bylaws which, in principle, commit signatories to certain rights and responsibilities in forest management. Such documents were developed in order to provide a clear division of roles between forest users and officials and to create a sense of security in forest management by providing legal mechanisms to challenge any violations of rights of the particular group and by making each group accountable for meeting its responsibilities.

According to Alemayehu (2007), unclear boundary between members and non- members is one of the factors that have affected the effectiveness of participatory forest management program in Ethiopia. There are no clear criteria for selecting members of forest user groups. The single criterion used is proximity to the forest but the distance is not explicitly defined. As Alemayehu (2007) identified, there are several community members somewhat farther away from the forests who were not registered as members of forest user groups even if they depended on the forests for different purposes. This could create conflict between members and non- members; and the non- members might

develop negative attitude to the participatory forest management program. Therefore, to make participatory forest management more effective and sustainable, Alemayehu (2007) recommended that the property right arrangement should be made clear and each decision making process should be legitimate, transparent and accountable so that members can trust that rules and regulations are upheld and their interests protected.

From the study by Alemayehu, it is understandable that developing trust between stakeholders is necessary for sustainable participatory forest management. The fact that the land and its resources are owned by the government could put forest user groups in suspicion that the government may take away the forest under their management. The forest proclamation Number 542 of 2007 did not mention communal ownership of forests; only private and state ownership were included. The Federal Rural Land Proclamation of Ethiopia also shows a sense of denying the communal land ownership to nations, nationalities and peoples of the country (Melese, 2008: 18). However, the Oromia Regional State Land Proclamation number 56 of 2002 acknowledges the customary right of access to land for communities and the proclamation Number 72 of 2003 recognizes communal forest ownership (Melese, 2008: 16). Practically, the traditional communal land ownership of communities does not seem to be given recognition and protection. Even though there are a number of stumbling-blocks, participatory forest management seems appropriate to enhance the use of valuable indigenous knowledge of the local people as an important input in conservation of forests.

2.9.3 Indigenous Knowledge and Curriculum Development

Discussed hereinafter are the place of indigenous knowledge in school curricula and the theoretical foundations that could help to include indigenous knowledge in curriculum.

2.9.3.1 The Place of Indigenous Knowledge in Environmental Education

Indigenous environmental knowledge developed by the local people has passed from generation to generation throughout human civilizations through traditional learning processes: ceremonies, rituals, imitation, recitation and demonstration. However, with the introduction of modern education to many developing countries during colonial periods with the objective of producing administrators, clerks, teachers, and interpreters for colonial purposes, indigenous knowledge has lost its ground in the society. Therefore, modern education has had almost no place for indigenous knowledge as indigenous knowledge was assumed to be irrelevant, unscientific and outdated (Ulluwishewa, Kaloko & Morican (1997). Furthermore, the formal education which is often confined to classrooms resulted in the separation of children from their environment.

As a result, indigenous knowledge is now gradually disappearing and remains only in the memory of some old age people who live in remote rural areas. When these old people pass away, indigenous knowledge may be lost forever. It would be, therefore, wise to collect and document the remaining indigenous environmental knowledge in traditional communities and integrate it into modern education.

Indigenous knowledge is practical knowledge that enables the learners to solve local environmental problems. Africans have the knowledge and values of living with the natural environment harmoniously for a long time before colonization and the introduction of money economy (Oteinde & Ezaza, 1997: 2-3). That means, there was environmental awareness among Africans before the intrusion of Europeans. Africans know the impact of their activities on their environment. They have been applying mulching, crop rotation, shifting cultivation, selective hunting, and so on. However, the new environmental awareness emerged out of the pollution of wealth due to the high and wasteful consumption levels of developed countries. On the other hand, in Africa, poverty is the driving force for the majority of the people to engage in activities destructive to the environment. Accordingly, the contents of environmental education for developed and developing countries could differ (Oteinde & Ezaza, 1997: 2).

Environmental education in Africa ought to take into consideration the role played by traditional education in the overall environmental management. As African indigenous knowledge has played a great role in the conservation of natural resources for a long time, it is necessary to restructure the school curriculum so that the place and the role of cultural and socio-economic conditions can be taken into account in environmental education (Oteinde, Ezaza & Boisvert, 1997).

It has been also argued that curriculum development: the process of identifying the needs of the society, formulating objectives, selecting and organizing contents and learning experiences, evaluation and improvement of the curriculum materials (Tyler, 1949; Taba, 1962; Pratt, 1980) in indigenous education needs to follow generative curriculum model (Ball & Pence, 2001) in which the curriculum is generated through participatory approach involving all the stakeholders particularly the local community. In this regard, curriculum development is based on local practical life experiences that have enabled the indigenous people to pass through protracted challenges of life. However, as we have been living in a very dynamic world which requires dynamic knowledge, indigenous knowledge alone may not help people to lead better life in the modern world. Therefore, according to the proponents of generative curriculum model, curriculum has to include both indigenous knowledge and the modern scientific knowledge. Ball and Pence (2001) consider generative curriculum model as an effective means of integrating indigenous knowledge in the curriculum without requiring the westernization of this knowledge or privileging one paradigm over another. Rather, it encourages a range of discourses to emerge and to debate on. In line with this, Freire (1970: 118) contends that education should not start by imposing one's own program on the others but through dialogue in which the oppressed must participate.

In an attempt to develop curriculum for early childhood development in Africa (Malawi, Lesotho, Nigeria, Uganda and Tanzania) using generative curriculum model, encouraging results were obtained. The curriculum development involved collecting of indigenous stories, doing research on the traditions and beliefs of the people, documenting and incorporating them in the curriculum (Schafer et al, 2004). Despite these advances, much

remains to be done to continue moving forward as there are a number of challenges to the implementation of generative curriculum. For instance, as Penn (2002) notes the main funders of such programs in Africa like World Bank continue to support western-centric approach. Moreover, the generative curriculum approach requires continual self-examination and reflection.

Concerning environmental education curriculum, National Conservation Strategy Secretariat (1994), now Environmental Protection Authority of Ethiopia, stipulates that a joint curriculum that integrates both traditional and modern practices of conservation, has to be developed by traditional and modern educators. In Ethiopian Education and Training Policy, ETP (1994: 26), it is also stated that "traditional education will be improved and developed by integrating with modern education." Moreover, in the same document, ETP (1994: 12), it reads, "curriculum developed and textbooks prepared…give due attention to concrete local conditions…." Accordingly, both the conservation strategy and the education policy of Ethiopia have stipulated the need to give emphasis on the integration of indigenous knowledge into the curriculum. Therefore, it is inevitable to include both the indigenous knowledge of the society and modern practices in the curriculum so that the present generation will use the repository of their fathers and forefathers in modern conservation practices.

2.9.3.2 Theoretical Foundations and Frameworks for IK and Curriculum Development

Theories and frameworks to be followed in dealing with indigenous knowledge of the Guji Oromo on conservation of forests and curriculum development are presented below.

2.9.3.2.1 Curriculum Inquiry and Indigenous Literacy

Curriculum inquiry is a method which explores the formulation of curriculum policies, curriculum programs, and the enactment of these policies and programs in classroom practice (Semali 1999: 103). Its objective is to examine the kinds of information which

form the body of knowledge that becomes the source of teaching and learning. Most developing countries follow the assimilationist curriculum model. In such curricula, knowledge consists of an independent body of facts that can be assimilated and transmitted through a good teacher and by means of thorough coverage of specific textbooks. Therefore, students are unable to apply what they have learnt in school to the context of a community. This is often to the surprise of the members of the community who expect too much from their children.

The history of Ethiopian curriculum also tells us that Ethiopia has been following the curricula under the influences of either Europeans or Americans since the inception of modern curriculum in the country (Teshome, 1979; Tekste, 1990, 1996; Derebssa, 2008). This has brought about the irrelevance of the curriculum to problems that the society has been facing, and the separation of the students from the indigenous knowledge of their society. It has been a critical problem for the Oromo who have been under a composite of challenges in that they were made to learn the curricula of Europeans and/or Americans and that of their Ethiopian rulers simultaneously leaving out their own indigenous knowledge.

Curriculum inquiry and indigenous knowledge bring ideas that are aimed at encouraging curriculum developers to rethink about schooling and begin a new path which departs from foreign interpretation of what is important to be included in the curriculum at the local level. Hawkins and Pea suggest that:

> *Knowledge develops as a result of interaction between the individual and his/her environment in much the same way that biological organisms are biologically adapted to their ecological space. The child is surrounded by rich cultural settings called objects and events. These objects and events are crucial in the construction of knowledge that students bring into the classroom (Hawkins and Pea, 1987: 249).*

The inquiry values indigenous knowledge that children bring to the classroom. That means, rather than debasing the foundational knowledge that the students have constructed and developed at home in their immediate environments, it is better to

capitalize on it. For instance, students can bring into science laboratories their discovery and knowledge construction based on local botanical resources such as knowledge about local plants, animals, water source, local conservation techniques, medicinal herbs, and so on. Such efforts demonstrate the production of alternative ways of knowing things, and keeping alive alternative ways of knowledge production. This alternative ways of indigenous knowledge production is known as indigenous literacy (Hawkins and Pea, 1987: 249). It is a complex set of abilities that students bring to classroom, abilities which span their life time from employing their indigenous language to relating their history, their stories of everyday life, traditions, poetry, songs, theatre, proverbs, dreams, epistemology, and all that goes to make up the necessary skills and how they make pragmatic adaptations to communicate complex matters among themselves and with others outside their communities (Semali, 1999: 106). It is misleading to consider that students come to school ready to learn as empty vessels. That is why, Friere (1970: 57-74) criticizing the banking concept of education, in which students are seen as passive depositories of knowledge digested by the teacher, and the teacher as active depositor, advises teachers to encourage students to be active producers as well as consumers of knowledge. He also recommends the need to acknowledge students as who know about things in their immediate environment and let them bring their indigenous literacy to school so that the classroom becomes an interactive environment of knowledge production which engages both the teacher and the students.

Indigenous literacy is, therefore, a competency that individuals in a community have acquired and developed as a result of their interaction with their social and physical environment. Indigenous or local perceptions and uses of literacy, then, may differ from those of the dominant culture, and must take into account the literacy experiences of different people. In Ethiopia, for instance, there has been an attempt to use native languages as media of instruction in elementary schools and teachers colleges preparing teachers for elementary education. This could be considered as one aspects of indigenizing curriculum. But much of the works that have been done so far appear to be the translation of the already existing curriculum materials into native languages with less attention to the indigenous knowledge of the community. One of the means to overcome

this problem seems to be through the application of thorough curriculum inquiry and indigenous literacy.

In my view, the problem in the application of indigenous literacy in Ethiopian context appears to be the passive nature of students rooted in parenting style and traditional teaching approach that totally relies on what is included in curriculum materials. Hence, for effective implementation of curriculum inquiry and indigenous literacy, it is necessary to involve the local community and the students in the preparation of curriculum. Moreover, teachers need to be flexible to include new information in their teaching other than what is in the curriculum materials. Schools have to also work closely with parents and students so as to promote the participation of students in teaching-learning process.

2.9.3.2.2 Dialectical Modernization Theory

This theory asserts itself within anthropology and political science. It retains from the classical modernization theory the division of social phenomena into two categories: traditional and modern. The theory considers the basic idea of development as a process whereby society adopts more and more modern elements. The key point that the theory underscores is that tradition need not impede development (Banda, 2008). It holds the view that some traditional institutions may even promote development by ensuring a smooth transition from old practices to new ones. A reminder given here is that modern institutions, on the other hand, when implanted in a traditional institutional setting may sometimes retain development or perhaps come to function in opposition to development. Martinussen states:

> *Modern institutions can at times obstruct development and perhaps not even function properly, precisely because they are not compatible with the tradition of the societies concerned. Furthermore, the approach emphasizes that the traditional societies are not necessarily stagnant but can in fact be very dynamic, heterogeneous and capable of surviving under a modernization process (Martinussen, 1997: 41).*

This leads to the central idea of the traditional and modern as social phenomena in a dialectical relationship where both types of phenomena change in the process and where the result of necessity is a hybrid (Banda, 2008: 87). Based on this theory, we may side with Maurial (1999: 59), who holds the view that, between indigenous knowledge and formal schooling, there could be a continuum as between conflict and dialogue that occurs as a result of indigenous peoples' interaction with the western world. Hence, in this view, Maurial (1999) recommends that the dialogical approach needs to be emphasized. Such an approach would work if those in the indigenous knowledge systems develop a critical understanding of their indigenous knowledge system in order to strengthen a dialogue with the formal schooling. This would offer an opportunity for those in formal schooling to see how they are viewed by those in indigenous knowledge system and possibly make adjustments so as to work cooperatively with indigenous knowledge holders to integrate indigenous knowledge in school curriculum. In Oromo case, the problem may lie in the willingness of the policy makers to listen to indigenous knowledge holders so as to include valuable indigenous knowledge of the people in the curriculum and modern conservation practices.

2.9.3.2.3 The Iceberg Cultural Model

This model was developed by the Lower Kuskokwin School District of Alaska, USA (Banda, 2008). Analyses of this model are so well documented in Barnhardt and Kawagley (2005). They have produced some of the works on indigenous knowledge systems in Alaska. The bottom line of their writings on indigenous knowledge is that the native people of Alaska, like any other indigenous people around the world whose culture was disturbed and possibly distorted by other cultures, have been looking for ways and means of integrating their ways of life in terms of values, beliefs and generally their ways of knowing things into the frameworks of formal education system (Banda, 2008). The Iceberg Cultural Model seems to guide the attempt made by the indigenous people like the Oromo to revitalize their culture which has been suppressed for a long time.

This model seems to fit well into the definition of culture given by anthropologist Tyler in Banda (2008: 89) who defines culture as "that complex whole which includes knowledge, belief, art, moral, law, custom and any other capabilities and habits acquired by man as a member of the society". Kroeber (1952), on the other hand, defines culture as patterns, explicit and implicit form of behavior acquired and transmitted by symbols constituting the distinctive achievement of human groups including their embodiment in artifacts.

The two definitions above seem to show that culture could be a complex whole but operating at different levels. This fits well with the Iceberg model of culture that classifies culture into three levels: surface culture, folk culture and the deep culture (Barnhardt & Kawagley, 2005). The argument suggested by this model is that indigenous people are often defined by their culture. Most people outside that culture recognize certain aspects of the people of that culture. However, it is the surface and folk cultures, including fine arts, storytelling, drumming, subsistence, dancing, games, cooking, dress that are easily observed and judged. There is so much knowledge in the deep culture as in weather forecasting, animal behavior, observation skills, seasonal changes, edible plants, medicinal knowledge, language, star knowledge, tools technology, genealogy and much more (Barnhardt & Kawagley (2005). In this research, an attempt was made to give focus on the deep culture of the Guji Oromo on the conservation of forests to identify whether there are aspects that can be included in formal school curriculum to help in the conservation of forests in the zone, Oromia and Ethiopia at large.

In their works, Barnhardt and Kawagley (2005) have tried to show so many years of restoration effort aimed at bringing systems and ways of knowing that have sustained the native Alaska for centuries into the Western education system. Barnhardt and Kawagley contend:

> *For over six generations, Alaska native people have been experiencing recurring negative feedback in their relationship with the external systems that have been brought to bear on them, the consequences of which have been extensive marginalization of their knowledge systems and continued dissolution of their cultural integrity. Though dismissed and often in the background, much of the native knowledge systems, ways of knowing and world views remain intact and in practice; and there is a growing appreciation of the contributions that the indigenous knowledge can make to our contemporary understanding in areas such as medicine, resource management, meteorology, biology and in basic human behavior and educational practices (Barnhardt & Kawagley, 2005: 5).*

The quotation above suggests that Alaska took a utilitarian approach to indigenous knowledge since the hybridization of indigenous knowledge and the formal school curriculum was aimed at making education serve the community in various areas of human endeavors. The need to go beyond the surface and folk cultures and reach the deep culture, suggested in the quotation above, is vital to this research. That way the Alaska Native Knowledge Network has managed to bring out people's way of living and other aspects into the formal school curricula for the benefit of the pupils and the communities. One of the key lessons learnt from the Alaska Native Knowledge Network is the inclusion of native elders, curriculum developers, teachers, pupils, researchers, native community organizers, school district board members, policy makers at various levels and parents in searching deep into the cultural iceberg and negotiating a culturally based or indigenously informed curriculum (Banda, 2008). Barnhardt and Kawagley note that:

> *The Alaska Rural Systematic Initiative seeks to bring the two systems together in a manner that promotes a synergistic relationship such that the two separate systems join to form a more comprehensive holistic systems that can better serve all students, not just Alaska Natives, while at the same time preserving the essential integrity of each component of the larger overlapping system (Barnhardt & Kawagley, 2005: 4).*

Here, aspects of adaptive nature of the indigenous knowledge and formal education were identified and negotiated by all stakeholders, leading to the development of a systematic integration. As stated by Banda (2008), there is no mention of returning to the Alaska Indigenous Knowledge System as an alternative approach but as a complement. The culturally based curriculum model discussed by Barnhardt and Kawagley (2005) shows

the interdependence that can exist between western science and indigenous knowledge. Following this model, it is necessary to identify the common grounds which draw the two education systems together and make them work interdependently.

The culturally based curriculum model shows that indigenous knowledge system and formal schools can negotiate a curriculum adaptable to local circumstances and needs. This is by focusing on similarities and common objectives and considering differences as motivators rather than dividers. The model enables both pupils and teachers to make connection between the formal school curriculum and the community knowledge and skills (Banda, 2008). However, in my observation, the model does not clearly put the criteria of classifying culture into surface, folk and deep cultures. Moreover, in the situation where people who have no formal education feel inferior to academicians, involving them in the curriculum development may be difficult.

In Guji case, however, since the culture of the people at all levels does not seem to be properly reflected in the curriculum, classification of culture may not be a major problem. Furthermore, since *Afaan Oromoo,* the mother tongue of the society, is serving as a medium of instruction in elementary schools of Oromia, it is not difficult to involve indigenous knowledge holders in curriculum development. Hence, this study will pinpoint important ideas that could be used in curriculum development for indigenous people such as the Guji.

2.9.3.2.4 Adedipe's Systematic Hybridization Strategy Framework

Adidepe (2004) compared indigenous knowledge practices with modern technology in sustainable crop production in Nigeria. In his findings, Adidepe (2004) recommended that indigenous knowledge in its own cannot meet the current and future demands of crop production. The conclusion of the study was that the benefits of modern technology should gainfully and sustainably rub on indigenous knowledge to meet the needs of people. Similarly, he identified that formal modern technology alone cannot produce the food needed by the people. Hence, the hybridization of the two systems was

recommended by Adidepe (2004). In this framework, indigenous knowledge is considered as part of essential ingredients characterized by strong socio-cultural beliefs with a strong community orientation. Of great interest to this framework is the identification of two alternative mechanisms of hybridization: integration and coordination.

Adidepe (2004) holds the view that the integration mechanism is a process of blending indigenous knowledge into the existing 'scientific' or formal school procedures. The coordination mechanism, on the other hand, carries with it close interaction and collaboration between indigenous knowledge systems and modern technology actors in terms of constructive engagements based on mutual understanding and sharing of the benefits of new products. For long term success, the coordination mechanism rather than the integration of indigenous knowledge systems with modern technologies appears to be more realistic and enduring choice (Chambers & Howes, 1976; Adidepe, 2004). On the other hand, for short term success, integration seems to be more feasible (Adidepe, 2004). Anyway, it is essential to note that each has its own advantages and disadvantages.

Aggarwal (1995: 3-6) argues that integration in education has not really easily come out as indigenous educators in the community continue to be discounted as having any valuable expertise. Banda (2008) recommends the formulation of policy document that guides the involvement of traditional educators in curriculum development as their involvement is vital to any integration. The problem for the integration of western and indigenous knowledge is that the former searches for knowledge of universal significance and the latter for context-based knowledge (Homan & Risckovsky, 2001). In fact, it is very difficult to consider western science without social and physical contexts. Chambers and Howes (1976) seem to support Adidepe (2004) on the choice of coordination mechanisms fearing that indigenous knowledge is ignored and squeezed out as inferior. I maintain that, coordination does not seem to solve the problem of the exclusion of indigenous knowledge from modern science and the day-to-day practices of the present generation. Hence, it appears plausible for indigenous knowledge holders and modern educators to work together to integrate indigenous knowledge in modern curriculum as

much as possible. In the cases where it becomes difficult to do so, the coordination approach could be the last resort.

The view underpinning the Iceberg Cultural Model or the Cultural based Curriculum Model and Systematic Hybridization Strategy Framework is that knowledge production should be treated as 'negotiated translation' and not something that should be transferred from one 'superior' system of education to another 'backward' education system, as positivists suggest (Pottier, Bicker & Sillitoe, 2003). The approach being promoted by these various frameworks and used in this study is the negotiated situation specific approach (Pottier, Bicker & Sillitoe, 2003), which demands dialogue among the different parties so as to foster hybridized or integrated curriculum development.

2.9.3.4.5 Communication Model

Communication in this study emphasizes the importance of interrelationship and interdependence between indigenous knowledge holders and modern/scientific educators supported by in-depth research work in both areas. In such a way, the two can complement each other. The communication model tries to establish communication as a vital tool that can ensure two or more education systems coming together for a common good for pupils (Sillitoe, et al, 2005). That is why dialogue and consensus are recommended between traditional or indigenous knowledge holders and curriculum designers so as to produce and offer integrated/ hybridized knowledge for the young generation.

The schematized conceptual framework of the study is presented below.

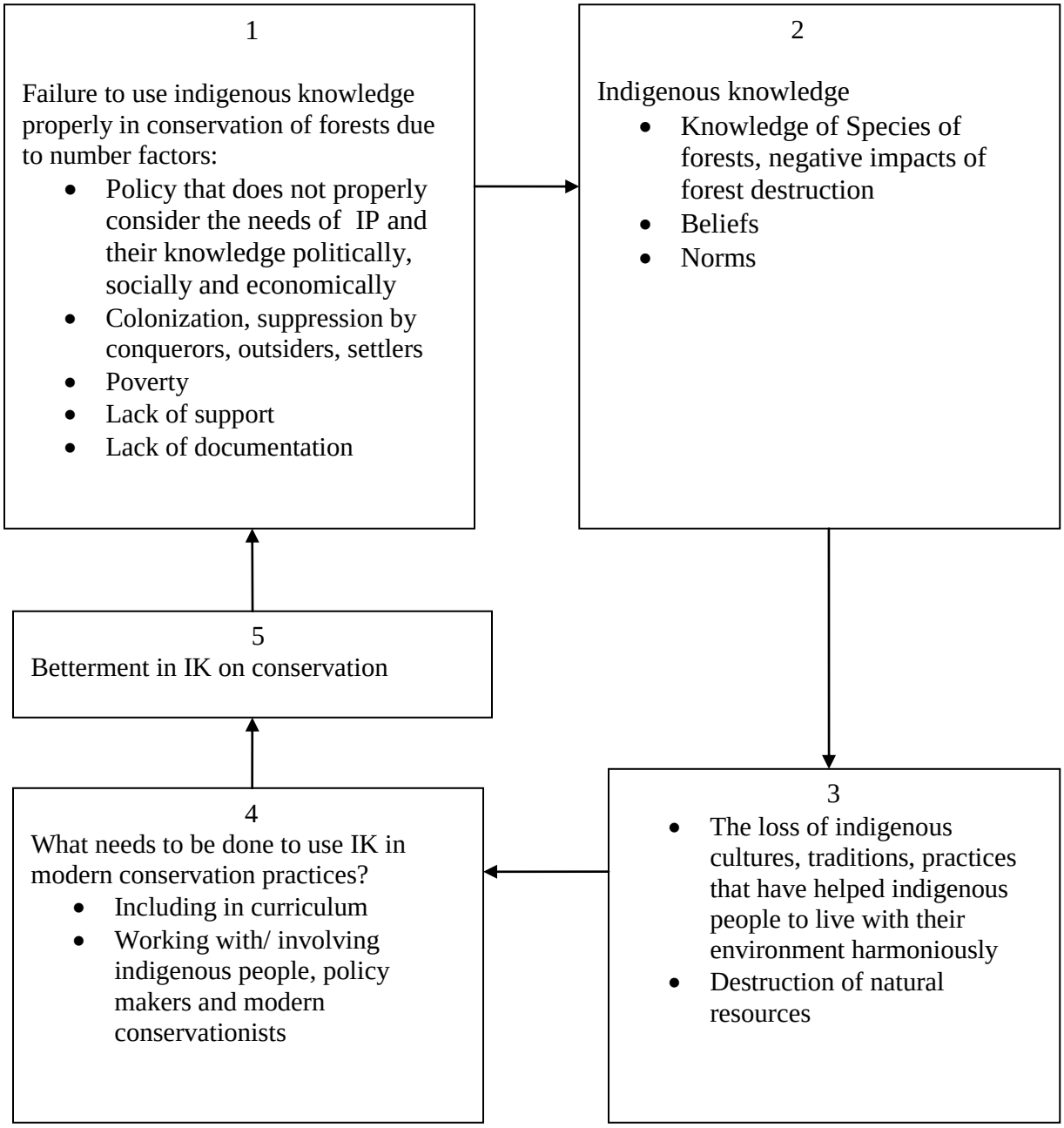

Figure 1: Conceptual Framework

The framework shows the fact that indigenous people in different parts of the world are able to live with forests and other natural resources harmoniously and that the present generation needs to learn from them. Through long time interaction with their

environment, indigenous people know the impact of forest destruction on their livelihoods. The values they give to forests and their beliefs and norms that guide their interaction with forest and other resources of the environment seem to have helped them to coexist with natural resources.

However, due to pressures on indigenous people in the form of colonization/neo colonization, conquest, and suppression by the more powerful ones and the less attention given to them in political, social and economic spheres, they have been losing their indigenous knowledge for ages. Accordingly, useful indigenous knowledge in conservation of forests has been lost.

Hence, it is necessary to work on how to revitalize such valuable indigenous knowledge. This could be done by including indigenous knowledge in the curriculum and modern conservation practices that the present generation will continue to use and pass to the next generation. In order to do so, it requires the development and implementation of policy that protects the rights of indigenous people politically, economically and socially. The work that is to be done in these areas is expected to bring about betterment in indigenous knowledge on conservation of forest and other natural resources, and hence, in the improvement of all cycles of the framework.

2.10 Conclusions

Indigenous knowledge on forest conservation is the understanding, beliefs and practices of indigenous people on the sustainable use of forests gained through protracted close tie with their environment. For a very long time, Eurocentric approach to education has neglected indigenous knowledge. Consequently, little attention was given to indigenous knowledge, values and practices in formal schooling and modern conservation practices. This view goes with that of postmodern theorists. However, advancement in Western or Eurocentric science and technology has not yet brought about the intended conservation of resources.

Despite the debasing of indigenous knowledge by the advocates of Eurocentric education, many studies show that indigenous knowledge has contributed a lot to the conservation of natural resources. Unearthing this fact, conservationists seem to have diverted their attention to indigenous knowledge to learn from indigenous people how they have been able to coexist with natural resources for so long.

Hence, it is necessary to deconstruct the wrong yardstick used to evaluate indigenous knowledge and the wrong connotation attached to it so as to include it in curriculum as well as in modern conservation activities. This requires knowing how learning takes place in indigenous way: mainly through doing, observation, and imitation techniques which are also predominant in constructivist and social cognitive learning theories. Moreover, careful attention should be given to both internal and external factors working against indigenous knowledge.

Nevertheless, some of the studies show that indigenous knowledge alone may not solve the large scale destruction of natural resources (Wohling, 2009) and the problems people are facing (Adidepe, 2004) in the world these days. That is why the integration of indigenous knowledge and Eurocentric scientific knowledge has been recommended (Adidepe, 2004; Barnhardt and Kawagley, 2005; Banda, 2008; Ball and Pence, 2001).

Integration could take place by including indigenous knowledge contents in related subjects (correlation) or fusing indigenous knowledge contents and related contents from modern sciences to form a broad field. I think inserting indigenous knowledge contents in different subjects may produce fragmented contents which may not give students a holistic and in-depth understanding of conservation. Thus, it appears valuable to develop a broad field subject consisting of indigenous knowledge and modern science contents on conservation of forests where they can be fused together or as an independent field of study where fusion is difficult. This could be realized through cooperative work of indigenous knowledge holders, teachers and curriculum developers.

CHAPTER THREE

RESEARCH DESIGN AND METHODS

In this chapter, the research paradigm, the sources of data, sampling techniques, the instruments and procedures of data collection and the methods of data analysis are presented.

3.1 Research Design

In this study, a qualitative case study design has been used to study indigenous knowledge of the Guji Oromo and its implications to curriculum development. Qualitative researchers study things in their natural settings, attempt to make sense of or interpret phenomena in terms of the meanings people bring to them (Denzin & Lincoln, 2000: 3). As the present study is about indigenous knowledge or value laden tradition of the society, qualitative or non-positivist approach, which strives to understand and interpret the world in terms of its actors appears to be more appropriate than the positivist paradigm, which strives for observablity, measurability, predictability, controllability, patterning the construction of laws and rules of behavior, and the ascription of causality (Cohen, Manion & Morrison, 2000: 28).

By rejecting the detachment of the knower, by positivists, from the thing to be known, qualitative researchers argue that individuals' behaviors can only be understood by the researcher sharing their frame of reference. That means, understanding of the individuals' interpretation of the world around them has to come from the inside, not from the outside (Cohen, Manion & Morrison, 2000: 20). Therefore, in this study, the data collected, their description and interpretation largely depend on the society's understanding of their environment with some explanations by the researcher.

Even though the review of the related literature refers to different parts of the world and Oromia, the data for this study were collected from Guji Zone, Southern Oromia, as it is a qualitative case study. Cases can be individuals, groups, neighborhoods, programs, organizations, cultures, regions or nation states (Patton, 2002: 447). This study has focused on describing the activities of a group, in this case the Guji, and shared patterns the group developed over time (Gay, Mills & Airasian, 2009).

A case study investigates and reports the complex interactions of events, human relationships among themselves and with their environment and other factors in a unique instance. It can penetrate situations in ways that are not always susceptible to numerical analysis (Cohen, Manion & Morrison, 2000: 181), and is concerned with a rich and vivid description of events relevant to the case.

Stake (1994) indicates that case study could be intrinsic (the study is done to understand a particular case), or instrumental (a particular case is examined to provide insight into an issue or refinement of a theory). In the latter case, the case becomes of secondary importance and plays a supportive role to understand something else. Some also consider a case as a choice of what is to be studied (Stake, 2000); others regard it as methodology (Berg, 2001: 225). This research is an instrumental case study intended to know the role of indigenous knowledge on forest conservation. So, ‘case’ is taken to mean a method in this study.

Concerning the strengths and weaknesses of case studies, Hitchcock and Hughes (1995) state that case studies catch unique features which may otherwise be lost in large scale data (example, surveys); they are immediately intelligible; they provide insight into similar situations or cases, and can embrace and build unanticipated events and uncontrolled variables. On the other hand, case studies are not easily open to crosschecking, are prone to problems of observer bias and their results may not be generalizable. However, critical peer analysis and triangulation of the data helped the researcher to overcome bias in this research.

3.2 Selection of Research Site

Selection of research site depends on the purposes of the study and the possibility to get the needed data for the intended research. The Oromo indigenous knowledge cannot be seen apart from their traditional socio-political institution: the *Gadaa* system, which has maintained the culture of the Oromo. Therefore, site selection takes into consideration the practices of the *Gadaa* System. Despite the suppression of Oromo and their culture by successive Ethiopian rulers, the Borena and the Guji were relatively able to maintain the tradition of Oromo, the practice of *Gadaa* System (Asmarom, 1973; Hinnant, 1977; Dhadacha, 2006). Moreover, as the study focuses on forest conservation, it is necessary to observe forests. From this view point, forest coverage is better in Guji than in Borena zone (OFWEBGBO, 2000/2010). Forests to be observed were natural forests with which the community lives as well as those protected by the government. These made the Guji Zone a preferable site of the study and the Guji Oromo the preferable Oromo group for the study. Accordingly, the three Guji groups: the *Hookkuu*, the *Maattii* and the *Uraagaa* who lead their lives interdependently under common *Gadaa* System in a confederation form (Dhadacha, 2006; Jemjem & Dhadacha, 2011) were selected for the study from middle and high altitude areas excluding lowland areas with thorny bushes.

3.3 Data Sources and Sampling

In case study research, the most common form of sampling is purposive sampling. It is based on the assumption that the investigator can discover, understand and gain insights in what is studied. That means, the investigator must select a sample from which the most can be learnt (Cohen, Manion & Morrison, 2000; Patton, 2002; Gay, Mills & Airaian, 2009). Therefore, in this study, purposive sampling has been largely used with very limited use of random and available samplings. To do so, I went to the study site and discussed with the community to identify the most knowledgeable and resourceful persons and forests for the study. Accordingly, *Abbaa Gadaa* and other respected and resourceful elders or persons among the community who are considered to be the custodians of the indigenous knowledge of the society were selected.

I selected two from *Adoolaa Reeddee*, three from *Oddoo Shaakkisoo*, one from *Uraagaa* (acting as *Abbaa Gadaa* of Guji), and one from around *Me'ee Bokkoo* of *Annaa Sorraa* districts who were used as key informants in the research. Two indigenous women were also interviewed. Moreover, the interview made with Forest and wildlife Enterprise officers at region, zone and district levels and the observations made at different areas during fieldwork in the zone were the sources of the data about the status of forests. For this, one expert from Oromia National Regional State, three from Borena-Guji Forest and Wildlife Enterprise, two from *Adoolaa Reeddee* District (one at nursery site) and one from *Oddoo Shaakkisoo* District were purposely selected and interviewed. Based on the information obtained from the community and the Borena-Guji Forest and Wildlife Enterprise officers, observations were made to *Anfaraaraa, Biluu, Kuchoo, Bilooyyaa* and *Zambaabaa* in *Adoolaa Reeddee* District, *Shaakkisoo* in *Oddoo Shaakkisoo* District, *Angadhii-Sukkee-Xooree* in *Uraagaa* and *Me'ee Bokkoo* in *Aanaa Sorraa* District.

The other sources of the data were experts working on cultural affairs at woreda level. Accordingly, two experts, one from *Adoolaa Reeddee* and one from *Oddoo Shaakkisoo* were interviewed. In addition, chairperson and development agent (DA) in *Ganda Biluu* (*Bilu Kebele*) were used as sources of data. This is the site where forests are under rapid destruction for agriculture activities and resettlement. In Ethiopia, *Kebele/Ganda* is an administrative structure below the district level and consisting of villages. Here, purposive sampling was used for the selection of the samples. The responses obtained from the Culture and Tourism and Forest and Wildlife officers of the districts were found to be similar to the responses obtained from Borena-Guji Forest and Wildlife Enterprise. As a result, it was unnecessary to look for more samples from *Uraagaa* and *Annaa Sorraa* districts.

Available sampling technique was applied to select samples from the community members around forests. Accordingly, three participants from *Zambaabaa*, two from *Kuchoo*, six from *Biluu*, three from *Anfaraaraa*, and four from *Shaakkisoo* were interviewed. From the total of 18 community members, nine of them were non-indigenous inhabitants (five recent settlers, from 2003 onwards) and one was a student of

grade seven. In addition to these major data sources, focus group discussion was carried out with elders and an official at *Shaakkisoo* and with the community members at *Biluu*. The focus group discussion at *Shaakkisoo* consisted of one government employee (from culture and tourism office) and three elders of between 65 and 80 years of age. The focus group discussion at *Biluu* involved eight informants of diverse category: kebele chairperson, DA, elder, youngsters, adults, a settler and a woman (see figure 16 on page 195).

To know whether the indigenous knowledge has been transmitted to the youngsters, four randomly selected school youngsters (one each from each grades 5-8) and four purposely selected members of the community (with similar age to the students) around forests were used as sources of data. Moreover, four teachers of *Kuchoo* Elementary School and three curriculum developers for elementary schools of Oromia were interviewed. The teachers and students were selected from *Kuchoo* Elementary School. Furthermore, curriculum materials (textbooks) of elementary school in Oromia Regional State were assessed to see the inclusion of indigenous knowledge of the Guji Oromo on conservation of forests. The total number of the informants (49) with some background information was presented in appendix C.

Furthermore, few documents obtained from the office of Oromia Forest and Wildlife Enterprise and its branch office of *Boorana-Gujii and* Gjii Zone Drought Prevention and Preparedness Office were used as secondary sources of data.

3.4 Techniques and Procedures of Data Collection

The study involves enquiring, experiencing and examining the phenomenon under investigation. In relation to this approach, Patton (2002: 4) identifies three techniques of collecting qualitative data: interview, observation and documentary analysis, all of which have been used in this study.

3.4.1 Interviews

Interview was used to collect the necessary data from the selected sources. Using interview one can explore and probe participants' responses to gather in-depth data about their experiences and feelings (Gay, Mills and Airanian, 2009: 370). Interview could range from formal (structured) interview, in which a set of questions are asked and the answers are recorded on standardized schedule, through less formal interview, in which the interviewer is free to modify the sequence of questions, change the wording, explain them or add to them, to informal interview, in which the interviewer may have a number of key issues which s/he raises in conversational style (Cohen, Manion & Morrison, 2000: 268). It is suggested that structured interview is useful when the researcher is aware of what s/he is searching for and is therefore, in a position to frame questions that will supply the knowledge required. However, unstructured interview is useful when the researcher is unaware of what s/he does not know and, therefore, relies on the respondents to tell her/him (Lincoln & Guba, 1985: 269).

In this study, semi-structured and informal interviews were used to collect the data. The semi-structured interview guide (Appendix A) was prepared based on the review of related literature and was modified using the feedback from three experts from the Department of Curriculum and Teachers Professional Development Studies, Addis Ababa University and one expert from the Office of Forest and Wildlife Enterprise, Oromia Regional State. Moreover, modifications were made in the process of data collection in the field, considering the real situation of the local conditions. Most of the modifications were made during the first field work in November to December 2010. In this process, some of the interview questions were modified and some new ones were added. For instance, some of the first questions were about Oromo in general. They were later adapted to the reality in Guji. For example, questions about *Odaa* and ritual areas were adapted to *Odaa* and ritual areas in Guji. Questions for students were developed based on the indigenous knowledge that *Abbaa Gadaa* and elders of Guji had told me.

The responses to the semi-structured interview were audio-recorded and were transcribed immediately after each interview. On the other hand, the unstructured (informal) interview questions were generated spontaneously as the real situations in the field necessitated them throughout the field work. Much of the informal interviews were carried out through informal talks or discussions in different areas: in a bus, in hotels, cafeterias, on the road and so on. No audio-recording of the information drawn from the informal interviews had taken place during the talking or discussions, but notes were taken in the researcher's diary on the spot or afterwards. Sometimes I was fortunate to get people discussing about conservation of forests as I was passing much of my time with people working in this area. Most of the time, when I was introducing myself to others, that I was doing research on indigenous knowledge on forest conservation, they themselves would continue talking on the issue, and this has provided me the opportunity to raise questions I had on the topic. At other times, whenever I got the opportunity, I was encouraging people to discuss the issue further. I was taking field notes immediately after the informal talk or discussion was over using small pocket notebook. Some of the missing points identified in the process of analysis were also filled through telephone interview with my key informants.

3.4.2 Observation

Based on the literature review and information obtained through the interviews, some observation focal points were developed (Appendix B). The observations were carried out in and around the forests. Observation is attractive method of data collection as it provides the researcher the opportunity to gather 'live' data from 'live' situations (Cohen, Manion & Morrison, 2000: 305). Observation enables researchers to be open-ended and inductive, to see things that might otherwise be unconsciously missing, to discover things that participants might not freely talk about in interview situations, to move beyond perception based data (e.g. opinions in interviews) and to access personal knowledge (Patton, 1990). Moreover, observation enables the researcher to gather data on the physical setting (the physical environment including forests) (Morrison, 1993: 80) and the interaction between human beings and their physical environment.

Some of the ideas obtained through reading literature and interview were used as agenda for observation. In other cases, the real world observed in the field by itself has become an object of observation. Accordingly, both semi-structured observation (in which the observer has an agenda of issues in a far less predetermined or systematic way) and unstructured observation (in which the observer is far less clear on what s/he is looking for) were used in this study.

On the side of the researcher, there are various degrees of participation in observation. Le Compte and Preissle (1993: 93-94) indicate that these include 'complete participant,' 'participant observer,' 'observer as participant' and 'complete observer'.

The 'complete participant' is a researcher who takes on an insider role in a group being studied, and may not even declare that s/he is a researcher (covert research). In this case, the degree of subjectivity and empathy may be greater. The 'participant observer' is part of the social life of the participants and documents and records what is happening for research purposes. The 'observer as participant' is known as a researcher to the group, and may have less extensive contact with the group or what is studied. With the 'complete observer', participants do not realize that they are being observed (e.g. using one way mirror). There may be greater objectivity in this type of observation (Cohen, Manion & Morrison, 2000: 311).

As a 'complete participant', the researcher dare not go outside the confines of the group for fear of revealing his/her identity; as a 'complete observer', there is no contact with the observed, so inference is dangerous. Hence, I opted for the middle position mainly as an 'observer participant' in observing forests, agricultural fields, ritual areas, settlement areas, nursery sites and dwellings as the nature of these things made me take this position. In this regard, my childhood and high school life experiences in rural areas helped me a lot to carry out the observations walking for long distances.

In the process of data collection, the information obtained through interviews led me to the observation of forest sites which in turn made me go for interviews and further

reading of related literature and analysis of documents related to the topic for more clarification and understanding. In the meantime, to clarify some of controversial ideas raised by different interviewees and the inconsistency between the data obtained through interview and observation, focus group discussion was used. Hence, the research process has continued in such a cyclic form. The data obtained through these methods were presented in chapter four.

Some of the observations were photographed and very limited cases were videotaped. In the cases where the use of photograph was not feasible, as the case when I was using vehicle, I was simply observing and taking field notes.

After the first round data collection in November-December 2010 which took two months, further reading of the related literature and analysis of the data continued hand in hand for about a year. In this process, important missing points and areas of observations were identified. Then, the second round fieldwork was carried out in December 2011 for a month. Beginning from January 2012, the analysis of the data collected during the second round field work has been done. After the analysis was made and consolidated, the indigenous knowledge of the Guji Oromo on conservation of forests was identified. Therefore, the identification of indigenous knowledge of the Guji Oromo on forest conservation was done inductively.

3.4.3 Document Review

Few available documents on the objectives and activities of Borena-Guji Forest and Wild Life Enterprise were consulted and integrated in the review as well as data analysis part (especially under participatory forest management). Moreover, some of the data on the number of recent settlements obtained from the Guji Zone Drought Prevention and Preparedness Office were included in the analysis part.

3.4.4 Field Notes

Field notes were used extensively to collect data for the study. Field notes are notes taken while observing forests, agricultural fields, ritual /sacred areas, dwellings, on transport, during and after informal interview and when ideas about the research came to my mind spontaneously. Many of the critical points for analysis of data were recorded in the field notes. Hence, field notes helped me a lot in doing my research.

3.4.5 Content Analysis

The other technique used to collect data was content analysis. In this case, analysis of elementary school curricula (textbooks) of Oromia was carried out to identify whether or not the indigenous knowledge of the Guji Oromo on forest conservation was included in the textbooks. This was done on the assumption that indigenous knowledge of the society is most probably included in the curricula prepared by regional education bureau. In the content analysis of 'the status of population and family life education in relation to its impact on the environment' on geography, biology, English language and civic and ethical education for grades 9 and 10, I hardly found indigenous knowledge of the Oromo on population planning and conservation of natural resources (Desalegn, 2008). This would mean that no more is expected in grades 11 and 12. That is why the research has focused on elementary school curricula.

Content analysis is a method that may be used with either qualitative or quantitative data in an inductive or deductive way (Elo & Kyngas, 2008: 107). Qualitative content analysis is a systematic, rule guided text analysis which tries to preserve some methodological strengths of quantitative content analysis (Mayring, 2000). As a result, it does not shut off quantitative analytical procedures but attempts to incorporate them without undertaking overhasty quantifications (Mayring, 2004: 267). Hence, it is a means of countering the frequently criticized dichotomy between 'quantitative' and 'qualitative' content analysis (Mayring, 2004: 269). Moreover, whether to use inductive or deductive content analysis depends on the purpose of the study. Inductive content analysis is recommended in cases

where there is no enough prior knowledge about the phenomenon or if this knowledge is fragmented. On the other hand, deductive content analysis is used when the structure of the analysis is operationalized on the basis of the previous knowledge and the purpose of the study is theory testing (Kyngas & Vanhanen, 1999).

In qualitative content analysis, there is a need to fit the material to a model of communication and to follow rules of analysis, to form categories as center of analysis and to consider reliability and validity (Mayring, 2000). Fitting to communication model refers to the part of communication on which inference is made: the communicator (his/her experiences, opinions, feelings), to the situation of text production, to the text itself or to the effect of the message. The material has to be analyzed step by step following procedures. The interpretation of the data based on analysis and referring to research questions requires the formation of categories that reflect the subject of the study (Kyngas & Vanhanen, 1999). Credibility of the research findings also deals with how well the categories cover the data (Elo & Kyngas, 2008: 112).

Even the approach in content analysis is based on the coding of categories and the origins of the codes and threats to trustworthiness (Hsieh & Shannon, 2005). Direct content analysis approach starts with a theory or relevant research findings as guidance for initial codes. In conventional content analysis, however, coding categories are derived directly from the text data. A summative content analysis approach, on the other hand, involves counting and comparisons usually of key words or content followed by interpretation of underlying context. All these approaches are used to interpret meaning from the content of text data in naturalistic paradigm (Hsieh & Shannon, 2005). The analysis process and results should be described in sufficient detail so that readers have a clear understanding of how the analysis is done and its strengths and limitations so as to achieve trustworthiness in the study. The procedure has the pretention to be inter-subjectively comprehensible to compare the results with other studies in the sense of triangulation and to carry out checks for reliability (Mayring, 2000).

In this study, deductive content analysis has been employed based on indigenous knowledge identified through interview and observation. I was searching for the indigenous knowledge identified throughout elementary school textbooks. The analysis of the textbooks was carried out by reading the contents between lines. The contents of indigenous knowledge on conservation of forests were identified as written messages and sometimes as pictures estimated in terms of page. Both the contents of conservation of forests in general and the contents of indigenous knowledge on forest conservation in the textbooks were presented in tables to provide opportunities for the reader to crosscheck. The proportion of contents on forest conservation (the general and indigenous knowledge) was calculated by dividing the total number of lines of the contents dealing with conservation by the total number of lines on a page. In such a way, the total proportion of the contents about conservation of forests was first calculated and then the proportion of the indigenous knowledge on forest conservation was identified out of the total pages of each textbook of grades 1-8. The calculation for identifying pages for contents on conservation of forests in general as well as indigenous knowledge on conservation of forests was carried out based on the researcher's intuition, not on an appropriate and rigorous quantitative research formula or model. Here, what really matters is this: "are the indigenous knowledge contents identified through interview and observation included in the textbooks?" It is not the quantitative aspect of the contents. In spite of this, the reading and the identification of the pages were done carefully and critically. The results of the content analysis which would help to forward implications for the future curriculum development are presented in chapter four of this study.

3.5 Methods of Data Analysis

The collected raw data cannot be immediately available for analysis. It rather requires some sort of organizing and processing before it can actually be analyzed. The tape-recorded information needs to be transcribed and field notes need to be edited, corrected and made more readable (Berg, 2001: 34). In fact, some of the data analysis took place while data collection was on progress. For example, in the course of interviewing my informants, the inconsistency between what some of the informants had described was

identified. Conducting the interview is data collection but recognizing the inconsistency between the sources is data analysis. Hence, data analysis began at the time of data collection. This led to the collection of new data by which the discrepancy was resolved. This means that data collection and analysis continuously interact. In such a way, collecting data and doing some analysis took place in the field for three months. The first two weeks of the first round data collection were the time of preliminary data collection which enabled me to modify some of my questions. During the rest of the time, the main data collection took place. Data analysis involves three concurrent flows of action: data reduction, data display, and conclusion and verification (Berg, 2001: 35).

Data reduction is focusing, simplifying and transforming raw data into a manageable form (Berg, 2001: 35). The data obtained through interviews were transcribed and translated from *Afaan Oromoo* into English. The data obtained through observations and those jotted down in the field notes were reorganized and some themes were identified. Some of the photographs were also selected. The entire data were organized, according to their similarity, under themes through rigorous reading and rereading of the data collected. Data reduction and transformation process has occurred throughout the span of the research project (Berg, 2001: 35).

Data display is the presentation of an organized, compressed assembly of information that permits analytical conclusions (Berg, 2001: 36). The data obtained through interview were presented in phrases and statements in verbatim as well as in paraphrasing. The content analysis and document review were presented in tables using simple percentages and qualitative interpretation. Some pictures were also included for illustration of the data. Finally, the data were interpreted, consolidated and presented. It is very important to note that, on the basis of the analysis, interpretation was made with a great care in order not to divert from the participants' points of view. To do so, one of the lecturers at Bule-Hora University, who is indigenous to the area of the study, was asked to read the first draft of the paper and comment on it. His comments were found constructive and included in the paper. Even though data reduction, data display, verification and

conclusion are intertwined, I have brought much of the conclusion toward the end as indicated by Berg (2001: 35).

Hence, the analysis of data involved three recurring steps: reading/memoing, describing what is going on in the setting, and classifying research data (Gay, Mills & Airanian, 2009). The process focused on becoming familiar with data and identifying potential themes (reading/memoing), examining the data in depth to provide detailed descriptions of the setting, participants and activity (describing) and categorizing and coding pieces of data and grouping them into themes (classifying). In this process, listening to the records many times, note-taking, rereading, identifying themes and reducing repeated issues were the usual and sometimes tiresome activities.

3.6 Verification

Verification is a twofold consideration. First, it refers to confirming the reliability of conclusions drawn from the data. The correctness or credibility of the description, conclusion, explanation or interpretation (Maxwell, 2005) is of great concern in qualitative research. In relation to this, I was carefully checking my path of data collection and analysis which helped me to modify my questions and collect additional data and do the analysis repeatedly by improving my work. Moreover, many researchers, two from the area of curriculum, one from the area of sociology, one from language and one from among indigenous society (Guji) have read this thesis and I incorporated their comments as recommended in qualitative research (Berg, 2001: 36).

Long term involvement in data collection, repeated observations and interviews were carried out to clarify the emerging ambiguity in the process of data collection by personally engaging with research participants (Creswell, 1998: 193). This involved getting feedback from the informants about the meaning of data they offered. The data was evaluated using peer (critical friend) debriefing to test my growing insights on the research. I was reporting to my friend and he was commenting on what I did.

Triangulation, cross-checking of information obtained through interview, documentary analysis and observation was used in the study to assess the convergence of the information. Triangulation has also involved using the same questions for different respondents to see the similarity of the responses.

My childhood experience, my MA research on environmental education and interest in the area in general, have made me dedicate myself to come up with reliable results.

In general, I have learnt a lot in the process of doing this research. For instance, first, I attempted to present the analysis of data following the order of my research questions. When I read the first draft of my work, I found repetitions in many areas. Then I read it again and again and formed themes under each research questions. I organized similar contents under each theme. Through continuous rereading and reorganizing, I came up with the final paper.

3.7 Ethical Considerations

Among the most serious ethical concerns that have received attention recently is the assurance that participants are voluntarily involved in the research and are informed of all potential risks (Berg, 2001: 53). Therefore, researchers need to clearly explain to the research participants the rights and responsibilities of both the researcher and the participants. In most institutionally sponsored research, consent of participation must be ensured in writing and as a rule signed by both the researcher and the participants. On the other hand, an implied consent can replace a signed consent slip when researchers conduct tape recorded in-depth interview (Berg, 2001: 57). The benefit of this particular style of informed consent is the elimination of any record of participants' names.

In this study, a formal written letter from the Department of Curriculum and Teachers' Professional Development, Addis Ababa University has been used to communicate with Oromia National Regional State's Forest and Wildlife Enterprise and Culture and Tourism Bureaus. A support letter was written by the Bureaus to their respective offices

at zone level; and a similar letter was written by the zone to the districts or *woredas*. More importantly, a colleague, who is a university lecturer and who is indigenous to the Guji has facilitated conditions for my data collection in Guji. He identified the appropriate places to go to and persons to contact. With the help of this colleague and officials and community members in Guji, I identified my informants. Before collecting data, I conducted discussions with the informants on the purposes of research and how confidentiality would be maintained even though many of the participants were eager to share their experiences without worrying about its confidentiality. Accordingly, an implied (verbal) consent (Berg, 2001: 57) was used in this study to collect data from the participants through tape recorder and field notes. I maintained lists of real names parallel to pseudonyms on separate sheet until I finish analysis and report writing to ensure consistency in analysis and report writing (Berg, 2001: 58). Finally, I omitted the real names and used only pseudonyms in reporting the results.

CHAPTER FOUR

CONTEXT OF THE STUDY

This chapter presents the context of the study including the geographical, social-political and economic background of Guji.

4.1 Geographical Background and the Location of Guji

Here, the geographical background of Guji is presented focusing on its location, climatic conditions and economic activities.

According to Guji tradition, *Adoolaa* and its environs was the point of the origin of the Guji (Hinnant, 1977; Taddesse, 1988; Dhadacha, 2006). Elders narrate that, a man named *Gujoo* who was born and lived there with his three sons: *Uraago, Maatto, Hookku* and other members of the family, left the area toward the northeast and settled at a place called *Girjaa* (Taddesse, 1988; Dhadacha, 2006). There, they lived as prosperous cattle herders and barley farmers for many generations. With this long and prosperous stay at *Girjaa*, the Guji developed a strong emotional attachment to the land. This seems to be the reason for Guji to identify their origin with this land, *Girjaa,* and consider themselves as *Gujii Girjaa*, the implication being 'the Guji who originated in Girja' (Taddesse, 1988). One of the informants of the study, *Baatii* (17 November 2010), also quickly rushed into expressing the history of Guji saying, 'Guji Girja'.

The descendants of Guji had then split into three parts: *Uraagaa, Maattii* and *Hookkuu,* after the three sons of *Gujoo,* and moved to the west, north and south respectively. However, their collective name remained that of their founding father *Gujoo,* and later to become *Gujii*. This attachment of the Guji tradition with their cradle land seems consistent with many scholars' reconstruction that the origin of Oromo is in and around

the areas now inhabited by the *Gujii, Boraana and Arsii* (Haberland, 1963; Lewis, 1966; Asmarom, 1973; Taddesse, 1988). Even though the time and the causes of the separation of Oromo groups is not yet known, the Guji were autonomous people with their clearly demarcated territories and political leaders, *Abbaa Gadaa*, during Menelik's conquest of their land in 1897 (Taddesse, 1988: 11). According to Taddesse (1988), the population of Guji was relatively small during those days. Land was communally owned by clans and there had always been plenty of land for everyone to graze his herds and to grow crops. Movement was free for individuals within the territory allotted to the clan, and this was the base for the then wide spread of transhumance. Moreover, it was the time of abundance and glory for the Guji.

With Menelik's conquest, however, the major patterns of Guji life were changed. Most Guji land was taken from them and was given to the followers of the king. *Gadaa*'s legal, political and arbitrational functions were replaced by the government administration. These restricted the once wide spread transhumance and the Guji's basic rights of deciding their own affairs at the local level. Taxes and labor services for landlords were imposed on them and the Guji were gradually reduced to tenancy and poverty with little or no concern for them on the part of the government (Taddesse, 1988: 11).

The Guji live in the southern Ethiopia, predominantly in the heart of the previous Sidamo Administrative Region. The majority live in the former Jamjam, *Areeroo* and *Boranaa* Awrajas (provinces) even though they also live in all the *awrajas* (provinces) of the administrative region. They are found in *Bulee*, Fiseha Genet, Yirga Chafe, Wonago *Woredas* (Districts) in Gedeo *Awraja* extending to the northern part of Lake Chamo and east of Lake *Abbayaa* bordering Korre down to Segen and *Galaanaa* Valleys and to the Burji in *Areeroo Awraja*. In Sidama *Awraja*, the Guji live in Shebedino *Woreda*, touching *Baddeessaa* and also Bilate in Wolayta *Awraja*. They are also found in Hagreselam, *Harooressaa*, Malgie, Wondo and Sidama *Woredas*. The Guji live across borders of *Baalee-Arsii* at *Bidiree* and *Oborsoo* in *Dalloo Awraja* and *Nansaboo* in *Gannaalee Awraja* in the east (Dhadacha, 2006). The boundaries of their territories, though they live across them, are, therefore, Lake *Abbayaa* in the west and *Gannaalee Guddaa* (the big

Gannale River) in the east. Gannale is the biggest river in the area which takes its name *Gannaalee Guddaa* after its size (*Nageessoo*, interviewed 28th December, 2011). In the north, the boundary is an imaginary line that unevenly stretches between the towns of Hagreselam and *Booree*. In the south, the boundary is slightly north of the town of *Negellee Boranaa* (Hinnant, 1977; Taddesse, 1988). Crossing these boundaries is always a possibility for all pastoralist communities, and the Guji is no exception.

There has been a significant change in the boundaries of the Guji (Hinnant, 1977; Taddesse, 1988) as there is a continuous expansion of Guji toward the South. Accordingly, the *Maattii*, one of the sections/phratries of Guji, have major inroads into the territories of the *Hookkuu*, the other section/phratry. They are also gradually expanding over the land that was once occupied by the *Arsii* by crossing *Gannaalee Guddaa* River to the east. Similar trends are true for *Arsii Oromoo* who are now living in *Gooroo-Doolaa* and *Liiban* districts crossing the *Gannaalee* River. This expansion is largely a consequence of at least early days of ritual wars that were organized under the *Gadaa* System every eight years. The Guji in turn had lost much of the land in the north due to other groups (the Sidama and Gedeo) expanding south ward (Taddesse, 1988).

The Guji zone was created in September 2002, when the upland woredas of the Borena Zone were split to form it (www.gujizone.org/index.php?option=com_content&view). Based on the census conducted in 2007, the zone has been asserted to have a total population of 1, 389, 800, of which 702, 580 are men and 687, 220 women with an area of 18,577.05 square kilometers and population density of 74.81 persons/km² (PCCFDRE, 2008).

In the current administrative structure of Ethiopia, the Guji inhabit *Shaakkisoo, Hamballaa, Girjaa, Gooroo-Doolaa, Daamaa, Annaa Sorraa, Waadaraa, Adoolaa, Booree, Uraagaa, Qarcaa, Dudda, Bulee-Horaa, Galaanaa, Abbayaa, Negeellee* and *Liiban* districts of the Oromia Regional State, with their capital at Negeellee (Jemjem & Dhadacha, 2011: 56). The current location of Guji confirms their southward expansion as indicated by Hinnant (1977) and Taddesse (1988). The interviews made with the people

around *Anfaraaraa* and *Adoolaa* towns of *Adoolaa* district and in *Shaakkisoo* District reveal continuous southward influx of the Sidama and Gedeo into the Guji territory from the north, intensifying the southward expansion of the Guji. Moreover, the expansion of the Somali toward the north and the west, settling in many parts of the *Liiban*, instigated the Guji to give attention to the south. As a result, the southern boundary of Guji has now extended to the south west of *Negeellee* town including *Liiban* district. What is most important here is that, the *Gujii* and *Booranaa*, including some minorities, co-inhabit these frontal areas.

The information obtained from the Guji Zone Administration in December 2011 shows that the Guji zone consists of two administrative towns (*Negeellee* Administrative Town, *Adoolaa Woyyuu* Administrative Town) and thirteen districts, namely, *Liiban, Gooroo-Doolaa, Girjaa, Sabbaa-Boruu, Adoolaa Reeddee, Waadaraa, Oddoo Shaakkisoo, Qarcaa, Booree, Annaa Sorraa, Uraagaa, Daamaa* and *Hambalaa Waamannaa.* Of these, large parts of *Negeellee* administrative town, *Liiban, Gooroo-Doolaa, Girjaa, Sabbaa-Boruu* are found in what is traditionally known as *Gammoojjii* (semi-arid areas); *Adoolaa Woyyuu* administrative town, *Adoolaa Reeddee, Waadaraa, Oddoo Shaakkisoo, Qarcaa,* in *Badda daree* (middle altitude), and *Booree, Annaa Sorraa, Uraagaa, Daamaa* and *Hamballaa Waamannaa in Baddaa* (high altitude areas). Temperature ranges between 20 and 27, 15 and 20, and 10 and 15 degree centigrade for *Kola* or *Gammoojjii* (semi-arid), *Woina dega* or *Badda-daree* (middle altitude) and *Dega or Baddaa* (high altitude) areas respectively (www.gujizone.org/index.php?option=com_content&view).

This study included middle and high altitude areas where there is relatively better forest cover and excluded lowland areas with thorny bushes.

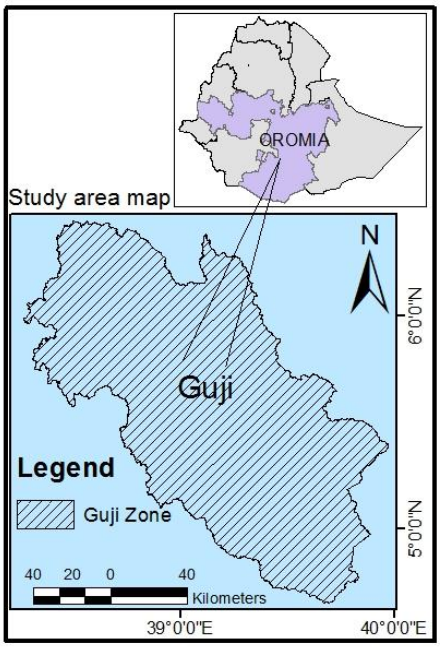

Figure 2: The Location Map of Guji Zone in Relation to Oromia and Ethiopia

In terms of altitude, the Guji land can be divided into three distinct zones: lowland, middle altitude and highland (Taddesse, 1995). The lowlands are mainly found in the Rift Valley in the western part (Taddesse, 1995: 37). They have low average rainfall; consequently, they suffer from periodic drought. In the Guji Zone, the annual rainfall ranges between 500 and 750 millimeters for *Gammoojjii* (mainly in lowlands) (www.gujizone.org/index.php?option=com_content&view).

In the lowlands, population spread thinly over vast savannah land, subsisting predominantly on livestock herding (Taddesse, 1995: 37). When the grass withers in the dry season, the option for those in the lowlands is to move their herds to the middle zone where they had kinship ties. Likewise, individuals from the middle and highland areas often utilize the lower elevation when there is heavy rain in their respective areas.

The middle altitude lies between 1500 and 2500 meters above sea level. This area includes the vast land lying between *Adoolaa* and *Negeellee* towns in the east and between Wonago through Yirga Chafe down to the borders of *Booranaa* in the west. In Guji zone, the middle altitude areas have 750-1500 millimeters annual rainfall (www.gujizone.org/index.php?option=com_content&view). This land is evergreen with lush vegetation and forests. Population is denser in this region than in the lowland areas and people practice a mixed economy of livestock herding and crop cultivation (Taddesse, 1995: 39) including coffee. In the valleys of the *Gannaalee* and *Hawaxaa* rivers, they cultivate maize and some *teff (Eragrostis abyyssincica).*

The highlands are located in the northern part of Guji covering much of *Maattii* and *Uraagaa* lands. These areas have an altitude of over 2500 meters above sea level (Taddesse, 1995: 39). Rainfall is more frequent and abundant than in lowlands and ranges from 1000-1500 millimeters (www.gujizone.org/index.php?option=com_content&view). There is an important natural forest in the area and abundant pastureland in the valleys (Van de Loo, 1991: 15). People are permanently settled, and density is relatively high (Taddesse, 1995: 39). They cultivate barley and several pulses. *Musa ensete,* 'false banana' is also grown in small plantations close to the houses.

The vast stretch land of Guji mainly lies within the terrains between and around the big rivers in the southern Ethiopia: *Gannaalee* in the east and *Galaanaa Sagan* in the west. Moreover, *Daawwaa, Hawaxaa, Mormoraa, Iyyaa, Gabarticha* and the other important rivers and major tributaries like *Kojowaa* and *Afalataa* bisect the Guji land. Many of the rivers start from the northern tip and flow toward the south. The major rivers enclose the main Guji land, which is rich in natural resources (various types of minerals like gold and virgin forests) and which has the potential for the development of the region and the country at large (Jemjem & Dhadacha, 2011: 58).

In pastoralist areas, at least in the past, the real wealth of Guji used to depend on cattle herding (Taddesse, 1988; Van de Loo, 1991). The social status of a person is based on the number of cattle he owns. Ritually, cattle are also used for sacrificial purposes. Hence,

cultivation was despised in the earlier days. People who worked on land were called *gaagurtuu or gaxaa* (those who do not have knowledge of cattle herding). The emphasis of Guji on cattle herding rather than cultivation of crops might have contributed to the maintenance of the natural forests, which are now under great pressure in the zone. Today, however, cultivation of crops has gained greater importance among most Guji, and farming combined with herding and bee keeping is the preferred pattern of economic activity (Taddesse, 1988). Recently, with the increase in the price of coffee in the world market, coffee production has been increasing in the zone (my observation of 2010-11). Bee keeping is also common in Guji Zone, especially in the highland and middle altitude, where flowering *Gatamee (Schefflera abyssinica), Baddeessaa (Syzngium gaertn), Eebicha (Vernonia galamenis)* and others proliferate.

4.2 Societal Composition

The Guji Oromo consist of seven major groups, namely, *Uraagaa, Maattii, Hookkuu, Haloo, Weessituu, Ootuu* and *Sheelloo*. However, only four of these: *Uraagaa, Maattii, Hookkuu and Haloo* have currently settled evenly adjacent to each other, while the other three have been engulfed in other ethnic groups and settled separate from the other Guji groups (Dhadacha, 2006; Jemjem & Dhadacha, 2011). Moreover, only the former ones are known to abide by common *Gadaa* rule in a confederate system of administration. Furthermore, only the three: *Uraagaa, Maattii and Hookkuu* possess the political power (*haaganaa),* while *Haloo (Alaadduu*) plays a mystical role in the *Gadaa* system as they are hereditarily responsible for the *Qaalluu* (religious) institution. That is why the Guji traditional political administration is often known as *haaganaa sadiin* (meaning administration system by the confederation of three political powers, the three groups or phratries). That means, they form the confederation of three independent but related groups known as *Uraagaa, Hookkuu, Maattii*. In fact, *Uraagaa* is very big numerically and formed a separate group called *Alaadduu*, which, by itself, is a confederation of two groups known as *Haloo* and *Weessituu*, each of which has its own territory and leader.

The other two smaller groups, the *Sheelloo* and *Ootuu* live deep in the territory of the former Sidamo Administrative Region (now in Southern Nations, Nationalities and Peoples' Regional State). They adapted many cultural elements of the people they came in contact with and, therefore, have slightly diverged from Guji culture (Taddesse, 1995: 40). The areas now occupied by *Sheelloo* and *Ootuu* might have been places reached by the Guji during the great Oromo expansion, from where the main group may have been pushed back to the present territory, most probably due to the pressure from their neighbors (Sidama and Gedeo). This view can be supported by the fact that some old shrines of the Guji such as Dama, Dara, Bansa and Dadoy, which are now in Sidamo and Gedeo territories, are often included within shrines now in Guji land during prayers (Taddesse, 1995: 41).

Concerning the great *Qaalluu* (supreme religious leader) of Guji, Hinnant (1977: 18) states that, he stands above all Guji groups and clans. He lives near the town of Wonago in *Alaadduu* territory. In addition to being the supreme religious leader of Guji, he legitimizes the *Abbaa Gadaa* of all groups and clans and acts as a mediator between them when there are disputes. He does not interfere in the authority of the *Abbaa Gadaa* of other phratry/group. Hence, each group has its own territory and political leadership: *Gadaa* System of administration. Even though, the *Hookkuu*, *Uraagaa* and *Maattii* have their territories and *Abbaa Gadaa*, they lead an interdependent life under common *Abbaa Gadaa*. By the virtue of being an elder, the *Abbaa Gadaa* of *Uraagaa* is, by default, taken as a prime (president) though he does not interfere in specific regional issues of other *haagaanaa* (regional states)(Jemjem & Dhadacha, 2011: 67). The *Hookkuu*, *Uraagaa* and the *Maattii* act together in war; help each other during economic crises and conduct *Gadaa* rituals together. There is little difference among them (Hinnant, 1977). Indeed, individuals or families from one group can move and settle in other group territory. Intermarriage is fairly common among them (Taddesse, 1988: 13). Hence, this study focuses on them (the *Hookkuu, Uraagaa* and *Maattii)* as they are relatively still living with their strong *Gadaa* administration and have maintained the Guji tradition.

4.3 Socio-political Structure

The traditional socio-political structure of Guji Oromo was dominated by two crosscutting organizations with the *Qaalluu* at the top (Taddesse, 1998). These bases of their social structure are the *Gadaa* System and the moiety-clan lineage structure. The Guji, in their oral tradition trace their political history to matriarchal society, the female as the head of the family and the society (Dhadacha, 2006: 21). According to the myth, female's rule appeared with the emergence of the Guji society. As the time went on, matriarchy (the reigns of *Akkoo,* as Guji call it) failed to sustain social order and stood in favor of females and, therefore, the pains of the popular convulsion of men overturned it. The last woman of the *Akkoo'*s reign was known as *Akkoo Manoyyee*.

With the fall of matriarchal society, patriarchal society in which the man exercises the administrative power on his family and fellow men came into being. Subsequently, the top man who played a significant role in the deposition of *Akkoo Manoyyee* seized power and became a ruler with personal authority (*mootii).* The *mootii*'s charisma which rested upon the quality of wisdom in his individual leader made him become a legitimate individual decision maker as an executive and judicial authority. There used to be no challenge to what he had decided. This caused instability and insecurity to the society as *mootii*'s rule failed to achieve the desired goal moving along hereditary dictatorial rule and was found to be no better than that of *Akkoo*'s rule. Consequently, in view of soothing *mootii*'s rule, the Guji people enacted advisors (*maltuu*) to him, and these advisors later on elevated to a collegiate administration (Dhadacha, 2006: 22).

Maltuu created favorable conditions in easing different social problems. Of others, they created the *fira* (clan) system for administering the community in the form of division of labor. Later on, the *fira* became responsible for its members and weakened the power of *mootii.* Gradually, decision making became a matter of discussion. Finally, *maltuu* neutralized the dictatorial power of *mootii* and, as a result of tactful contrivance, y*aa'a*, a mobile vigilance committee came out with the objective of assuming just leadership in conjunction with attendances of sacrificial ceremonies. In such a way, *maltuu* became

hayyuu (experts) and replaced *mootii* by *abbaa yaa'aa*, a symbol head (Dhadacha, 2006: 22). The new administration revises its enacted law (*seera)* and decides on the new one periodically every eight years by the special body of people called *gumii* (a legislative congress).

From the myth, one can understand that the Guji administration, from the time immemorial, began with matriarchy and gradually changed into *mootii* and then to *Gadaa* System, which are patriarchal.

4.3.1 *Gadaa* System

The *Gadaa* System of administration moved the Guji society from primitive form of life into rational or political society (Dhadacha, 2006: 22). Accordingly, the system established compulsory submission of all disputes to arbitration of the umpire that rationally ordered punishment and legal procedure. The protection of human rights, the prosecution of injuries, persons or properties have been placed under the guarantee of the political coercive apparatus of the *Gadaa* administration or to whom it may delegate the task (Dhadacha, 2006).

On political sphere, there are five *luba*, a natural but socio-political grouping of the Guji people, whose membership is hereditary and integrates all clans of the Guji population for the purpose of collective political and social interests. These are *muudana, halchiisa, dhallana, harmuufa* and *roobalee*. The five *luba* hold power *(baallii)* in rotation (Dhadacha, 2006: 23). *Baallii* also refers to the developmental stage in *luba* (Dhadacha, 2006) or *Gadaa* grades (Hinnant, 1977: 121). The ideal length of one *baallii* is eight years. If a father and his son are separated by five *baallii* (or ideally forty years), they are prevented from occupying political power at the same time. Hence, it prevents the handover of power from the father to the son. The five *luba* are almost similar to the present day political parties in the sense that they promote the rotation of power among the *luba* and avoids the concentration of power in one group. Unlike the present time political parties, in *luba*, any person in the population is endowed membership from the

ancestor directly and no one is left out. The *luba* is not organized for electoral purpose to win power as they do not use pressure to influence the system nor do they fight to take over the government. The *luba/miseensa* is guaranteed by the system. When the time comes, it is imperative that the power is handed over to the legitimate *luba/miseensa* (Dinsa, 1975: 28). Hence, *luba* is systematically devised for organizational stability of the *Gadaa* system of administration as a mechanism of keeping balance of power.

The Guji *Gadaa* system was studied by Hinnant (1977), Van De Loo (1991) and Dadhacha (2006). The developmental stages in *Gadaa* and their duration are shown in Table 2 (Dhadacha 2006: 37).

Table 2: Duration of Stages and Phases in *Luba* Cycle

No	**Developmental Stages**	**Stage Duration**		**Phases**	**Phase Duration**	
		In Year	In *Baallii*		In Year	**In *Baallii***
1	*Dabballee*	1-8	1	Passive	1-24	**3**
2	*Qarree Duraa (I)*	9-16	1			
3	*Qarree Duubaa (II)*	17-24	1			
4	*Kuusa*	25-28	½	Active	25-48	**3**
5	*Raaba*	29-36	1			
6	*Doorii*	37-40	½			
7	*Gadaa*	41-48	1			
8	*Baatuu*	49-56	1	Retirement	49-72	**3**
9	*Yuuba*	57-64	1			
10	*Yuuba Guddaa*	65-72	1			
11	*Jaarsa Guduruu*	73-80	1	Extinctive	73-96	**3**
12	*Jaarsa Qululluu*	81-88	1			
13	*Jaarsa Raqiyyaa*	89-96	1			
14	*Ginyaa*	97-death	-	Extinctive	97-death	-

Source: Dhadacha (2006: 37)

Here, *baallii* refers to the *Gadaa* grades. In relation to this, Hinnant (1977: 121) notes that, "the Guji word for the *Gadaa* System as a whole and for each stage, or grade, is *baallii*. The ideal length of one *baallii* is eight years." Almost similar classification was used by Van de Loo (1991: 24), who did his study in the *Maattii* group of Guji, except that he used the name '*gammee*', which is also called *dabballee* and added *hurraa* at the end, next to *jaarsa raqaa.* Van de Loo (1991) also elaborated how *qarree* grade has a longer duration as it is divided into *qarree duraa* and *qarree duubaa*. *Jaarsa raqaa* literally means 'the person who has reached a very old age and does not move by himself'. Should someone reach the final named class in the hundred and four years of G*adaa* cycle, he is called *hurraa*, 'chaff', a name alluding to his degraded health and senility (Van de Loo, 1991: 53).

Dhadacha (2006: 37) listed the *Gadaa* grades as *dabballee, qarree duraa (I), qaree duubaa (II), kuusa, raaba, doorii, gadaa, baatuu, yuuba, yuuba guddaa, jaarsa guduruu, jaarsa qululluu, jaarsa raqiya and ginyaa.* In this list, the first grade in *Gadaa* begins with *dabballee* without mentioning the name *suluuda* used by Hinnant (1977) and Van de Loo (1991). Moreover, Dhadacha (2009) added one stage called *ginyaa* at the end as done by Van de Loo (1991) by the name *hurraa*. However, the classification of *qarree* into *qarree duraa* and *qarree duubaa* by Dhadacha (2009: 37) goes with that of Van de Loo (1991) and long duration assigned to *qarree* grade by Hinnant (1977). Even though the naming of the *Gadaa* grades could vary; my review of the works of the three researchers on *Gadaa* System of Guji shows that, there is no fundamental difference in the roles of people in the corresponding *Gadaa* grades.

Dabballee have little social responsibility and are pictured as small children. They are given care by their parents and responsible for herding small animals (Dhadacha, 2006).

The status of a person increases starting at *qarree* stage and reaches its climax at *gadaa. Qarree* has to herd the fully grown cattle at its full capacity. In *Maattii* and *Hookkuu*, the last four years of *qarree* are called *raaba diqqaa* and *raaba jiisaa* while in *Uraagaa, qarree* or *doobbii* is used alternatively (Dhadacha, 2006: 37). At this level, youngsters are

involved in hunting of large game animals and raiding for cattle against the *Boorana*, Sidamo and Arsi (Hinnant, 1977: 127). *Qarree* are accompanied by their fathers or a few other young men on these dangerous adventures. Alternatively, *qarree* may go alone as a display of great bravery (Hinnant, 1977: 127).

The active phases in the *Gadaa* grades are *kuusa, raaba, doorii* and *gadaa* (Dhadacha, 2006: 37). At *kuusa* level, the members start to acquire economic right as fathers give heifer to their sons. Heifers may symbolize growth and development as they are preferred for reproduction. This stage is a transitional period where the men are considered to be norm less, vulgar and immoral. The *kuusa* trains in rituals, wars, politics and laws. After the training, the members of *kuusa* are made to conduct a symbolic traditional war (simulation) that prepares them to stand by themselves. It was during *kuusa* grade that men participated in *buttaa* wars (offensive wars against non-Guji groups conducted every eight years) in the past. Groups of *kuusa* were led by the *abbaa duulaa* (father of battle or commander-in-chief of war*)* of *Gadaa* grade and were advised of appropriate times for going into battle by oracles (*abbaa gorsaa*) (Hinnant, 1977: 129).

At *raabaa* stage, the individual is able to marry legitimately. In addition, *raabaa* is in a position to be listened to and obeyed by others, particularly by those at *qarree* grade. *Raabaa* marks a slight increase in ritual authority. During the G*adaa* transition (promotion) ceremonies, it is *raabaa* who organizes people in the lower grades for music and dance (Hinnant, 1977: 129). Upon becoming *raabaa*, full economic right was acquired; and what was actually owned by *kuusaa* is now formalized (Dhadacha, 2006: 40).

The final grade before *gadaa* is *doorii.* There is no great difference between *raaba* and *doorii* in the social roles which are appropriate to the grades (Hinnant, 1977; Dhadacha, 2006). In the ritual sphere, however, *doorii* marks the end of novice period and the beginning of full participation as a senior man (Hinnant, 1977: 130).

Concerning its function, the *Gadaa* grade that assumes its office once every eight years was the most important grade in *Gadaa* cycle. The *Qaalluu* and other lineage leaders at the clan level and the outgoing *Abbaa Gadaa* (*baatuu*) were responsible for selecting the new *Abbaa Gadaa* and their assistants (*yaa'a*). Concerning the selection of *Abbaa Gadaa*, Hinnant (1977: 184) states that before a man become *Abbaa Gadaa*, his personal *kaayoo* must be good. *Kaayoo* is loosely defined as destiny or perhaps providence which subsumes the entire philosophy of interaction between man and *Waaqaa* (Dhadacha, 2006: 9). *Kaayoo* is not a thing but a symbolic representation of good or bad/evil that manifests itself in birds' calls, in animals like snakes and persons (Hinnant, 1977; Tadesse, 1988; Van de Loo, 1991).

The *kaayoo* of candidates for *Abbaa Gadaa* is examined in two ways. First, a candidate must meet certain physical standards. He must be young, vigorously healthy, and handsome and must have no physical blemishes on his body. Second, he must belong to one of a limited number of lineages. In each section, only three clans are *warra kallachaa* (people of phallic head ornament). Only the three clans produce *Abbaa Gadaa*. In relation to this, Asmarom (1987) in Jemjem and Dhadacha (2011: 166) identifies that *Daraartuu* of *Uraagaa*, *Insaallee* of *Maattii* and *Heeraa* of *Hookkuu* are said to comprise *warra kallachaa*, the favourite lineage to yield the *luba* leadership (*fira nami irratti bule*). Within these clans, only a few lineages within specific primary clan divisions (*mana*) may provide *Abbaa Gadaa*.

There is a mechanism which prevents the office of *Abbaa Gadaa* from becoming hereditary within one lineage and being rotated amongst brothers every eight years. As all members of a given lineage belong to one of the *Gadaa* classes and the 'middle generation' of each grade enters the *Gadaa* rank, it is a young man of legitimate lineages of that class who is selected as *Abbaa Gadaa*. For instance, Hinnant (1977: 185) reported that the *Abbaa Gadaa* of each of the three sections (*Uraagaa, Maattii and Hookkuu*) was of *roobalee gadaa* class at the time of his field work. All men of the *gadaa* rank in Guji were *roobalee.* The sons of all these *gadaa* were passing through the *maq-baasaa* ceremony (ceremony carried out in transition from *dabbalee* to *qarree*) and becoming

qarree. The fathers of those who were *Abbaa Gadaa* at the time were *jaarsa qululluu*. All the three generations were, of course, *roobalee*. *Roobalee* would not again become *gadaa* (and produce *Abbaa Gadaa*) until the present junior which is at *qarree* passes through *qarree, kuusa, raaba, doorii* and itself becomes the middle generation of *gadaa* with its sons just passing through *qarree.* In the mean time, the middle generation of each of the four *Gadaa* classes (*muudana, halchiisa, dhallana and harmuufa*) would have passed through the lower ranks and become *gadaa*. As a result, the lineage in each class which may produce *Abbaa Gadaa* may only provide one *Abbaa Gadaa* in five *gadaa* or forty years.

In addition to meeting the genealogical and physical requirements of good *kaayoo*, a man who is to become *Abbaa Gadaa* must demonstrate the attributes of leadership. He is evaluated in terms of his truthfulness, dignity, ability to conduct rituals and to make people respect and obey him (Hinnant, 1977: 186).

There is also a pre-selection process which occurs long before the final selection of the A*bbaa Gadaa*. When the *Abbaa Gadaa* and his *yaa'a* become *baatuu (yuuba*), they select one member of the junior generation of their *Gadaa* class to become a prime candidate. At this time, the junior generation has the rank of *kuusaa* (Hinnant, 1977: 187). The prime candidate and other potential candidates are given some form of training in which they are given care and fed and participate in *Gadaa* ceremonies that prepare them for leadership ahead of them. The prime candidate becomes *abbaa raabaa* at *raabaa* grade. He and his seven original followers select other men who become his *ya'aa* (councilors) (Hinnant, 1977: 187).

The *abbaa raabaa* and his followers have little to do in the *Gadaa* cycle other than assembling when the *Abbaa Gadaa* has meetings or ceremonies. At the next rank change, when *abbaa raabaa* becomes *doorii*, he may get the title of *abbaa doorii*. If his conduct during *raabaa* has not been satisfactory, his *ya'aa* may select another candidate to become *abbaa doorii*. The *abbaa doorii* again has little to do with the administration of the society except that he accompanies the *Abbaa Gadaa* on formal occasions. He has his

own ceremonies for the welfare of his clan. Even if a man has become *abbaa doorii*, there is no guarantee that he will become *Abbaa Gadaa*. If *abbaa doorii* failed to meet the requirements of conduct, if he had become physically infirm, or if he had become too old, another candidate would be selected (Hinnant, 1977: 188).

The preliminary offices of *abbaa raabaa* and *abbaa doorii*, therefore, provide a means of evaluating the conduct of a candidate and a long training time before the assumption of office. Ideally every eight years, a new *Abbaa Gadaa* takes office. He then selects those who are to act as his *yaa'a* if he has not already done so (Hinnant, 1977: 189).

The handing over of rank by *Abbaa Gadaa* begins on the fourth day of *Adoolessaa* (September), when *Abbootii Gadaa* and their counselors (of the three sections: *Uraagaa, Maattii and Hokkuu*) leave their homes and begin to move to their common meeting point, *Me'ee Bokkoo* tree (the most sacred tree in Guji) (Hinaant, 1977: 196). It is located just off the main road between the towns of *Adoolaa* (Kibre Mengist) and *Booree*. Along the way, they sacrifice at several shrines. Arriving at *Me'ee Bokkoo*, the *Abbootii Gadaa* build their *Qachaa* (a group of hats for *yaa'a*). They then wait through the rains of October into November (Hinnant, 1977: 196). In November begins *guutuu* (full). Now, the three A*bbootii* G*adaa* (of *Hookkuu, Maattii* and *Uraagaa*), along with *abbaa raabaa, abbaa doorii* and their counselors assemble at *Me'ee Bokkoo* and begin to travel across the country to the house of great *Qaalluu*. Each *Abbaa Gadaa* takes cattle to the *Qaalluu* as an offer to get his blessing and approval.

Following the *guutuu*, the various *Gadaa* groups return to *Me'ee Bokkoo* for the next step of handing over of *baallii (for Maattii group) and* the *gumii* (literally, the all here or general assembly). The handing over of *baallii* takes place on the open land to the left hand side near the road that goes from *Adoolaa* to *Booree* while the law making process takes place under the *Me'ee Bokkoo* tree among the forest on the right hand side of the road (*Muuda*, 27 December 2011; *Jiloo*, 24 December 2011). The general assembly is ideally held every eight years and is commonly known as *Gumii Bokkoo* (general assembly of *Bokkoo*). It is a great assembly in which the outgoing *Abbaa Gadaa* settles

any legal or ritual problems remaining from his reign. Any man who has passed through *maq-baasaa* (transition ceremony from *dabballee* to *qarree duraa*) may speak at the *gumii*, and in addition, he may speak for those of lesser rank who must remain silent. Various legal cases, within each clan are brought to the appropriate *Abbaa Gadaa* and settled. The ritual rules of the *Gadaa* System are subjected to scrutiny and changes are suggested (Hinnant, 1977: 202). Here, laws referring to different aspects of the life of the society are enacted and declared to the people.

Among these laws are the laws of conservation of forests and related resources, which are the concern of this study. During my field work, I was not fortunate to get the law making process at *Me'ee Bokkoo* as it was not in that years. As the law making is orally done, I have not got any written law. Hence, my data collection about it was based on interview with *Abbaa Gadaa,* which will be presented in the analysis part.

Finally, the old *Abbootii Gadaa* end their law and travel to the actual handing over of power/ authority (*baallii*), which takes place in the lowlands near the *Gannaalee Guddaa* river (for *Hookkuu* and *Uraagaa* groups) (Hinnant, 1977). Hence, the handing over of power may take about a year starting toward the beginning of September and ending toward the end of August (Hinnant, 1977).

In general, after assuming office, the major activities of those in G*adaa* grade are to administer Guji, to reconsider the old Guji laws in the assembly, to move about the Guji land according to the prescribed calendar, performing a number of different sacred shrines and to select *abbaa duulaa* (war leaders). In the past, the *Gadaa* System assumed military, economic, legal and arbitrational responsibilities. Today, however, the function of *Gadaa* in Guji has been reduced to ritual activities (Hinnant, 1977: 183).

The grades after *gadaa* are all *yuuba.* The person at this grade withdraws from administrative activities and leaves affairs of daily life to junior generations. An area in which *yuuba* is dominant is that of ritual (Hinnant, 1977: 131). He also serves as an expert for consultancy on law and custom. In the first stage of *yuuba, baatuu,* he has the

obligation to pass on his knowledge of the crucial *Gadaa* grade to those who have just entered it before retiring from legal and political concerns. The second (*yuuba*) and the third *(yuuba guddaa)* stages are increasingly freed from non-religious concerns and become increasingly pure (*qululluu*). *Qululluu* also means 'someone who has nothing' like a cow or bull without horn. That means, those who are at this stage become powerless mainly in political sphere.

The final set of grades, the three *jaarsa* take full cognizance of a paradox in the life cycle. *Jaarsa* who has seen many *gadaa* should be the wisest and most revered of all. He has passed through the entire life cycle and achieved purity. But, at the same time, he has lived long enough to be structurally senile. As a result, the *jaarsa* grades combine great respect with total freedom from social or ritual tasks (Hinnant, 1977: 132). Taddesse (1988: 13-14) has summarized the main structural and functional features of *Gadaa* System in Guji as follows:

- *Gadaa* is, first of all, a male (patriarchal) institution. Women's participation is very much limited. Girls are considered as the daughters of their fathers' *Gadaa* grade; women are referred to as the wives of their husbands' grade.
- *Gadaa* divides the stages of life from childhood to old age into series of formal steps. There are thirteen such steps in contemporary Guji case. Transition ceremonies make the passage from one stage to the next. Within each stage, activities and social roles are formally defined, both in terms of what is permitted and what is forbidden. For instance, *sulluuda* (the first *Gadaa* grade equivalent to *dabballee* in Dhadacha (2006) herd small animals, *kuusa* participate in organized war parties, *gadaa* administer the country, etc.
- Recruitment in *Gadaa* System is based not on biological age in an age set system, but upon the requirement that one remains exactly five stages (ideally forty years) below one's father. It is based on the maintenance of one socially defined generation between the father and his son, a system which prevents adjacent generation from competing for status. Accordingly, all of one's sons could occupy the same grade regardless of their age.

- The ideal length of one rank or G*adaa* grade is eight years, but some variations are possible as could be observed from the classification by Dhadacha (2006: 37).

4.3.2 Moiety System

There are two non-exogamous moieties in Guji: *akaakuu* and *dhalataa*. In the past, these moieties were known as *kontomaa* and *daarimuu*. This category assumes a formal but natural division more than the political role (Dhadacha, 2006). Hinnant (1977) asserts that the division is based on the order of birth in that *kontomaa (akaakuu)* are the first born (*angafa*) and *dhalataa (daarimuu*) are those who came later. According to Hinnant (1977), only the *kontomaa* have the opportunity to achieve a number of ritual offices. On the other hand, Dhadacha (2006: 19) argues that the category is a nominal denomination which may not be identified in terms of their abode, cultural make up and mode of life. Nevertheless, in *Hookkuu*, most *kontomaa* members dwell on the other side of the road between *Hawaxaa* River and the main road from *Finfinnee* (Addis Ababa) to *Negeellee*, whereas the *daarimuu* live on the other side of the road, on the side of the *Gannaalee* River to the east. Of course, both may live wherever they prefer without discrimination. In support of this idea, one of the informants of this study, *Jiloo (*24 December 2011) has also indicated that "there is no formal segregation between the two in terms of abode. However, as the *kontomaa* are elders, priority is given for them in G*adaa* administration." It is indicated that the *dhalataa* are the adopted groups and they trace themselves to the genealogy of the descent group, the clan and the tribe that they were wrapped up in, and it is very difficult today to tell the difference between the Oromo proper and the assimilated groups (Asmarom, 1987) in Jemjem and Dhadacha (2011).

In general, the seven Guji groups are divided into *fira* (clans) and the *fira* into several lineages or sub clans (*warra*), each of which comprises several kinfolks (*mana*) and ends at *balbala* referring to sub-*manaa* or extended family (*miiloo*)(Jemjem and Dhadacha, 2011: 65). Accordingly, *Uraagaa*, *Hookkuu* and *Haloo* have seven clans (*fira)* each and *Maattii* three, *Ootuu* six, *Sheelloo* two and *Weessituu* four. Then each clan is divided into a number of *worraa* and *worraa* into *manaa* and *manaa* into *balbalaa*. *Maattii* was

formerly said to have seven clans out of which the four were eliminated by the *didhaa/buttaa* war with *Arsii*. That is why the Southern Guji: *Hookkuu, Maattii* and *Uraagaa* (Hinnant, 1978: 230) often say '*Gujii balbala torbaa, baallii shananii'* when talking about their societal composition and cycle of *lubaa* (Jemjem & Dhadacha, 2011: 65). Their saying appears to refer to the seven Guji sections and the seven clans of the southern Guji and their five *lubaa*: *harmuufa, roobalee, muudana, halchiisa and dhallana).*

When it comes to moieties, all the same composition of the clan is structured into a *Kontomaa (akaakuu) and daarimuu (dhalataa*) category. The overall structure of the Guji society at higher level could be shown schematically as follows:

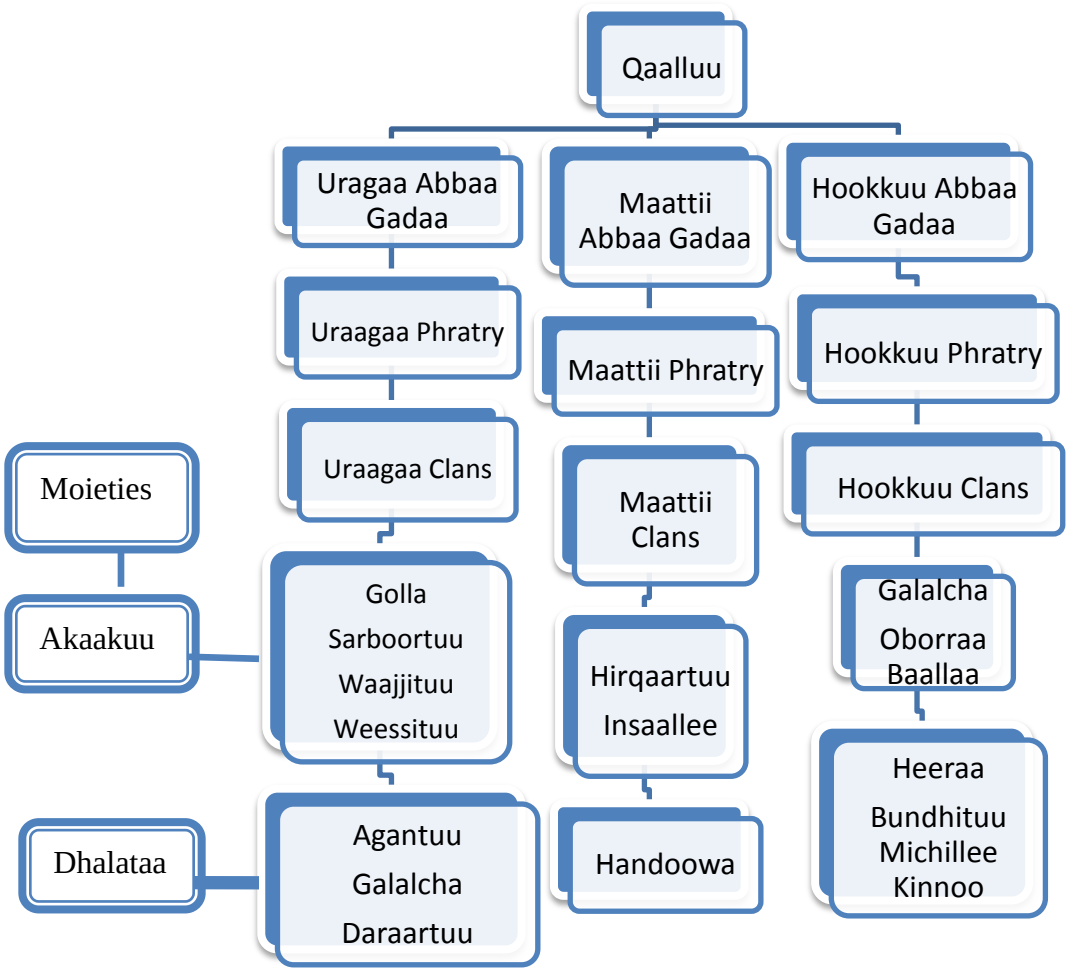

Figure 3: The Overall Structure of the Guji Oromo

Source: Taddesse (1988: 16) and Jemjem and Dhadacha (2011: 66-73)

In the above structure of the Guji society, some modification has been made to the classification by Taddesse (1988: 16) referring to the classification by Jamjem and Dhadacha (2011: 70-73). Taddesse has included *Haloo* and *Galalcha* under the *akaakuu* and *Weessituu* under *dhalataa* moieties of the *Uraagaa* excluding *Waajjituu*. On the other hand, Jemjem and Dhadacha have included *Waajjituu* and Weessituu under the *akaakuu* and *Galalcha* under the *dhalataa* moieties of the *Uraagaa*. In my reading, I came to understand that *Haloo* are one of the seven groups of the Guji (Jemjem & Dhadacha, 2011: 66).

4.3.3 Family Structure

The Guji family, like most Cushitic families of rural Ethiopia, is a large patriarchal extended family. An ideal family consists of one husband, several wives and as many children as nature allows. The eldest son, along his spouses and children, is expected to live with his parents. Younger ones can live wherever seems appropriate for them. The family of most ordinary men, however, consists of a husband, a wife and the children (Taddesse, 1988: 17). Marriage, in most cases, is either arranged or based on self selection. Bride wealth is paid by the groom's family to the bride's family in the form of cattle and money nowadays. There is also one very rare type of marriage in which the bridegroom is not required to pay bride wealth: *addibaana*, marriage in which the girl goes to the groom's house without his knowledge to offer herself in marriage.

4.3.4 Religion

Religiously, the Guji were/are traditionally *Waaqeeffata*, who believe in *Waaqaa* (God) as do other Oromo groups. A number of ritual activities are carried out in different parts of the zone. The main tenet of the rituals or the worship is not to the physical features like trees but to *Waaqaa*, who created these beautiful and graceful physical features. In relation to this, Taddesse (1988) states that, the Guji do not worship physical objects but

the spirit of *Waaqaa* that is believed to dwell in them. The *Qaalluu* of the Guji, a religious leader, seems to act as 'priest in Christianity' for the people. The Guji also believe in the existence of *dursinee or durriisa /seexana*, devil whose main function is said to mislead people to do something wrong.

There is also a concept called '*kaayoo*', which is not a thing but a symbolic representation of good or bad/evil (Hinnant, 1977; Tadesse, 1988; Van de Loo, 1991). In *Wallaggaa*, it is known as "*milkii*". It is surprising that every major undertakings of Guji are governed by *kaayoo* (Taddesse, 1988). Before going out for wars and hunting, requesting a girl for marriage, holding certain important ceremonies, etc, people have to carefully examine *kaayoo*. If it is said to be bad, in most cases, they postpone or cancel their plans. If their *kaayoo* is good, they know that all will be well. Similar to the experiences of the Guji Oromo, in *Maccaa (*Matcha) Oromo of the extreme Western Oromia (to the border of Gojam of the Amhara Region) *kaayoo* or (*milkii* as it is called there) guides every day- to- day activities of the people.

When I was in grade three, for instance, I had that experience. At the time, I was living with my grandfather (my mother's father) and attending school. Sometime my mother called us to a ceremony. While we were going to visit my parents with my grandfather, we accidentally faced a falling tree along our way in the forest. My grandfather left me alone and went back to his home saying that *"milkiin gaarii miti."* It is to mean that *milkii/kaayoo* is not good. I, about ten years of age at the time, traveled alone throughout the day almost all in the forest crossing many rivers which I may not do even after I became an adult for fear of the situation.

From this example, it is possible to understand that there is cultural similarity between Oromo groups settled at extreme parts of Oromia: Guji in the south and *Maccaa* (Matcha) *O*romo of east *Wallaggaa* in the West.

CHAPTER FIVE

PRESENTATION, ANALYSIS OF DATA AND DISCUSSION

This chapter presents the data collected through interview, observation, content analysis and document review. It is divided into six parts. The first part presents about the indigeneity of the Guji briefly. The second part deals with indigenous knowledge of the Guji as mainly obtained from the elders. The third part treats the current status of indigenous knowledge considering elders' reflection, youngsters' awareness of the knowledge and field observation. The fourth part describes factors contributing to the deterioration of indigenous knowledge. The fifth part analyzes factors which could help in revitalizing indigenous knowledge. The last part discusses, condenses the findings and gives reflections on them.

5.1 Indigeneity of Guji

Indigenous knowledge, as knowledge obtained through protracted interaction of humanity with its environment, cannot be seen apart from the indigeneity of the people or adoption to the indigenous culture. Concerning the indigeneity of the Guji to the area studied, all the elders interviewed confirmed that they are indigenous to the area (*Jiloo*, interviewed on 15 November 2010; *Baatii*, 17 November 2010; *Culuqqee*, 20 November 2010). The well-experienced former *Abbaa Gadaa* of Guji, *Culuqqee* (20 November 2010) has indicated that "as much as I know based on the information I got from our fathers, this land is the land of Guji from the very beginning." Another elder, *Baatii* (17 November 2010) said that, "this land is the land of Guji as we were the first inhabitants of this land originally coming from *Madda Walaabuu"*. Be they were from *Madda Walaabuu* or from where they are now, the elders have indicated that they are the first inhabitants of the area.

It was identified that "the Guji Oromo were leading their lives on a communal land under *Gadaa* administration before the Amhara came to the area" (*Jiloo,* 15 November 2010). *Jiloo* said that "the Guji have lost their traditional ways of administering themselves as a result of the conquest by Menelik."

In his study conducted in the Horn of Africa including Boran in Kenya, *Booranaa*, *Gujii* and *Karrayyuu* in Ethiopia, Bassi (2003: 3) used the term 'autochthonous' to mean 'the children of the soil, formed or originating where found' to stand for the indigenous people studied. The studies done by many scholars referring to the indigenous culture of the Oromo (Asmarom, 1973; Kassam & Gemetchu, 1994; Bassi, 2003; Tenna, 2005; Workineh, 2005; WIBD; 2005; Desalegn et al, 2005) were made on *Booranaa* and *Gujii*. This by itself is an indication of how these people are indigenous people with rich indigenous knowledge of the Oromo. Their rich knowledge of conserving natural resources particularly forests, which is the focus of this study presented in this part also corroborates the indigeneity of the Guji. Indigeneity, in this case refers to the first inhabitants of an area with rich historical and cultural ties to the area.

5.2 Why and How the Guji Conserve Forests

Humans may conserve forests for different purposes. The purposes may be similar or different from society to society and from place to place. Accordingly, the Guji have their own reasons and methods of conserving forests.

5.2.1 Shade for Animals, Humans and Plants

Forests serve as shades for animals, humans and the undergrowths. They "shade the land and serve as a shelter for cattle during dry season," (*Jiloo,* 15 November 2010; *Liiban*, 1 December 2010). The Guji tend their cattle in the forest during winter and leave out during summer season. Accordingly, forests under which cattle shelter and travel to drink

water are protected, (*Culuqqee*, 20 November 2010; *Baarii* & *Dullacha*, 21 November 2010).

Animals also shelter under big trees when there is heavy rain. The use of trees/forests as shades for cattle and the care given to them for this purpose was repeatedly mentioned by the informants of this study (*Jiloo*, 15 November 2010; *Liiban*, 1 December 2010; *Culuqqee*, 20 November 2010; *Baarii* & *Dullacha*, 21 November 2010).

This seems to be common in Oromia as indicated by Kitessa (2007) in Jimma. My own observations in Western Oromia indicate that our people leave trees even in agricultural fields under which cattle shelter during dry season. It is reflected in the traditional songs of the *Maccaa* (Matcha) Oromo of Western Oromia, *Wallaggaa*. The song goes as follows: "*Yaa mukeen gaaddisa loonii murtaniiree; yaa gurbeen yaaddessa diinaa dhuftaniir*ee?" This is roughly to mean, "Have you cut trees which are shades for cattle; you youngsters who threaten our enemy, have you come?" This traditional song shows the need to conserve or not to cut down trees which serve as shades for cattle. Similarly, it also indicates that trees are shades/ shelters for cattle in the same way that youngsters are defenders of their people from enemy. The association of forests with rearing of cattle by the Oromo groups of different areas is, indeed, a clear witness that the Oromo are mainly cattle herders.

As *Baatii*, one of the informants of this study has indicated, "Forests are also useful for humans to protect themselves from blazing sun, heavy rain and strong wind'' (*Baatii*, 17 November 2010)." It is common that people take rest under the shades of trees when they are on journey or on work during dry season and shelter under big trees to protect themselves from heavy rain during rainy seasons. Forests also divert or weaken strong winds (cyclone) from demolishing houses or damaging crops. *Culuqqee* (20 November 2010) states that the use of *Odaa* as a hall in *Gadaa* assembly is one of the unique examples of the use of trees or forests as shades for our people.

Forests also serve as shade for coffee production (*Baarii* & *Dullacha*, 21 November 2010). Coffee production has been expanding on highlands of *Uraagaa* and in the middle altitude areas of *Adoolaa* and *Shaakkisoo* (field notes). Coffee requires forests as shades for its production as could be attested in coffee producing areas of Oromia like *Jimmaa* (Kitessa, 2007) and *Iluu Abbaa Booraa* (Zewudie, 2009).

The protection that big trees give to coffee and other undergrowths is symbolized by big trees as belonging to the 'outside' realm of nature, being close to God, the *alolla* (Kassam & Gemetchu, 1994). *Gurraachaa Duubaa*, an elder living outside the *Manquubsaa* forest near the *Negeellee* town, has already articulated these values (Kassam & Gemetchu, 1994). The *Manquubsaa* forest was nearly destroyed by fire in 2000 and the remaining area was seriously affected by illegal and selective cutting of juniper trees for wood processing industries and different construction purposes. *Gurracchaa* mentioned that the juniper trees are like the Borena elders *(jaarsolii*): they stand taller than the others and have a long white beard (whitish lichen, *arrii*, is often hanging on the juniper's leafy branches). Just as there cannot be Borena society without elders, the *baddaa* (forest) will fall in chaos when all the junipers are cut and destroyed.

It is obvious that when big trees are cut, they fall on small under growing tress and other plant species and destroy them. Moreover, people clear the undergrowths in order to make the cutting of big trees easier. Therefore, the cutting of big trees like juniper trees in *Manquubsaa* forest, unless systematically done would perturb the ecosystem and do much damage to the whole plant and animal species in the area. That is probably why the juniper trees were analogically symbolized with the *Boorana* elders and the rest of plant species as *Boorana* society since there is a dynamic link between the two. According to the present administrative structure, *Manquubsaa* forest is in Guji zone.

Therefore, forests which serve as shades for animals, humans, coffee and other under growing plants like gesho *(Rhamnus prinoides),* and enset *(Musa enset)* are not cleared or burnt by the Guji (*Culuqqee*, 20 November 2010; *Baarii* & *Dullacha*, 21 November 2010; *Jiloo*, 15 November 2010; *Liiban*, 1 December 2010).

5.2.2 Sources for Forest Related Resources

Forests are the sources of wood for construction, fuel, and household furniture. Traditionally the Guji often use dead trees for firewood and branches for different construction purposes including part of their houses, for kraal; and big trees mainly for poles in constructing houses and for making furniture. Even the wooden scepter (*bokkuu*) handled by the *Abbaa Gadaa* is made of branches of a tree (*Baatii*, 17 November 2010). However, when it is said that big trees are respected as elders in *Gujii*, it does not mean that all trees are not totally cut. Concerning this, *Baatii* (17 November 2010), an elderly of 70 years of age explained:

> *Mukooliin gurguddaan immoo, yoo nuti foon keenyaan addaan baanee gara lafaa seenu, ilmi keenya, niitiin keenya, horiin keenya, waanti nuti sila qabnu nu wajjiin biyyee hin seenu; muka kanatu nu wajjiin hawwaalama. Kanaaf muka kana baay'isnee hanga ilma keenya olitti jaallanna, nuti Oromoon* (*Baatii*, 17 November 2010).

This is to mean that when we die, our sons, daughters, wives, friends and wealth do not enter the grave with us. However, boxes which are made of big trees are buried with us. Hence, we Oromo like these big trees very much even beyond our children.

From the above quotation, it is possible to infer that the Guji Oromo like big trees very much. On the other hand, it is an indication of how the big trees are used by the Guji Oromo for making boxes and other furniture. However, the data obtained from informants showed that the Guji are selective in the use of trees. That is why elders argue that it is not the culture of Guji Oromo to cut growing and big trees (*Culuqqee; Jiloo; Baatii; Barii & Dullacha*, interviewed in November 2010). Sometimes when it becomes necessity to cut big or growing trees, the Guji will show their condolence by putting green grass on the remaining parts of the trees wishing them quick recuperation (*Jaarraa* and *Barii*, 21 November 2010). In support of this idea, Negessa stated that the Guji reflect their sadness saying:

I did not cut you for destruction
It is not to harm you
Let your root grow down
Let your leaves grow up
Let you grow and stretch
Let your flowers bloom and flavor (Negessa, 2011: 55)

This seems to show how much they are concerned about trees or forests.

According to the Guji elders, forests are sources of traditional medicinal plants like *Vernonia galamenis,* a kind of a flowering tree with bitter leaves and bark (*Baatii,* 17 November 2010) and *Hagenia abyssinica,* (*Araarsaa,* 16 December 2011; *Didoo*, 31 December 2011) which serve as medicines. Moreover, a number of flowers, fruits and wild food are in the forests. The flowering *Schefflera abyssinica), Syzngium gaertn* and others are useful for harvesting honey as the case in *Anafaraaraa-Booree* forests and many areas in Guji. Wild fruits which serve as food for animals and humans like *Syzngium gaertn* and *Qilxa (Ficus vasta)* are also there (field notes). There are a number of wild vegetables, fruits and roots that serve as food for human beings and animals in the forests. The vegetables include *Hadhawa, Raafuu, Laleessa, Doobbii* and others which are mostly cooked and consumed with food made of maize, wheat and barley. They are believed to give good flavor and nutrients. There are also fruits like *Baddeessaa, Goraa, Meexxii, Hadheessa, Hudhaa, Hagamsa, Waddeessa, Qlaatii, Bururii* and others which are eaten by human beings and animals. Roots such as *Maroda, Burii, Silinga, Kurtee, Kilichuu* are mostly consumed during drought seasons when there shortage food crops (Negessa, 2011: 57). Forests are also the sources of water which is very necessary for living things (*Culuqqee,* 20 November 2010). They are also the sources of grasses for cattle. Concerning the uses of forests and why to conserve them, *Jiloo* (15 November 2010) stated that, "we know that forests are lives; if there are no forests, no rain, no grass, no cattle, no sheep, no goat, no honey and no crop production." This shows their understanding of forests as sources of resources which are necessary for their livelihoods.

5.2.3 Beliefs of the Society and Sacred Lands

'Beliefs' in this case refer to feelings that the destruction of forests results in punishment from W*aaqaa,* God. In relation to the contribution of their beliefs to the conservation of forests, the Guji elders explicated in the following way: "We consider young growing trees as our boys and daughters. We believe that for those who cut growing trees, children will not grow," (*Bariisoo,* 16 November 2010). "We do not cut the growing part or tip of a plant rather its branches. Moreover, when someone cuts trees and they fall, they shatter violently. We believe that they are applying to God the damage made to them and God will punish us. Hence, trees are considered as *woyyuu*," (*Jiloo,* 15 November 2010).

As one of my research centers was *Adoolaa Reeddee* Woreda (District) whose capital is *Adoolaa Woyyuu*, I was eager to know the meaning of the word *woyyuu* that was mentioned by my informant. He explained that in Guji tradition, there was an Oromo named *Reeddee,* who was living there and worshipping God (*Waaqaa*) as he was *Waaqeeffataa,* a traditional Oromo religion. The *Gadaa* ceremony was carried out there, and in the ceremony, ceremonial honey for *Abbaa Gadaa* was collected in the container called *Doolaa* under a sycamore tree called *Odaa,* which gradually took the name *Odaa Doolaa*. From *Odaa Doolaa* then adapted the name *Adoolaa* for the area. This place of practicing G*adaa* and worshipping *Waaqaa* was considered as sacred means *woyyuu*. Hence, the ritual practice, *dooluu* gradually became *Adoolaa* and the sacred place *woyyuu* formed the present name *Adoolaa Woyyuu*.

Reeddee declared this sacred place and its resources to be protected. As a result, the natural resources of this area were respected. Even hunters did not kill animals from this area. Sometime in the past, *Hidemaa Horoo,* an Oromo from *Galalcha* clan of Guji, killed buffalo and became mad. As a result, it was believed that '*Adoolaa Woyyuu* was a sacred land, which does not carry a criminal (*Adoolaa Woyyuu nama daba hojjete hin baadhattu*). Therefore, "there was no crime, abduction, and killing of human beings and animals or bloodshed on this land" (*Jiloo,* 15 November 2010). The area within the radius

of five kilometers was totally recognized as *woyyuu* (sacred) by all Guji (Jemjem & Dhadacha, 2011: 307). The historical place where *Gadaa* has been practiced is still there in *Adoolaa Woyyuu* Town in the compound of *Adoolaa Reeddee* Woreda (District) Administration office where *Odaa Adoolaa* is still standing. An interview made with

Figure 4*: Odaa Adoolaa*

Duuba (5 December 2010), Head, Culture and Tourism Office, *Adoolaa Reeddee* District and *Culuqqee* (20 November 2010), also supports the ideas forwarded by *Jiloo* that *Adoolaa Woyyuu* was a sacred place where *Gadaa* was practiced, human rights were respected, animals were not killed and forests were not cleared. From this case, it appears that *Adoolaa Woyyuu* was a sacred place where the rights of human beings were respected and animals and plants were protected. This traditional narration supported by the living evidences like *Odaa Adoolaa* and a number of big trees in the town and forests in the surrounding areas, seems to show the contribution the beliefs of the Guji Oromo have on conservation of forests.

Figure 5: A Partial View of Adola Town

Adoolaa Woyyuu Town and its environs, where I started my study of the Guji Oromo's indigenous knowledge on conservation of forests, is also considered to be the origin of the Guji Oromo in Guji tradition (Taddesse, 1988; Dhadacha, 2006). Hinnant (1977), who did a detailed study on the *Gadaa* System of Guji, took *Adoolaa* as one of his major centers since he believed that the place is relatively rich in the tradition and culture of the Guji society as described by Asmarom (1973), who had conducted a research on the *Gadaa* System before Hinnant (1977).

Trees or forests around where ritual practices take place are protected. The case in point of such trees is, *Odaa,* the symbol of Oromo, under which socio-political decisions and ritual practices take place. In Guji tradition, ritual areas are highly protected. In my study, I made observation to *Me'ee Bokkoo* where the general assembly of the Guji, *Gumii Bokkoo,* takes place on 27 December 2011. It is located between *Adoolaa* and *Booree*

towns. The highway that goes from *Negeellee* through *Adoolaa* to *Booree-Finfinnee* crosses the place of *Gumii Bokkoo*. When one goes from *Me'ee Bokkoo,* a small town which is about 4-5 kilometers away from the place of *Gumii Bokkoo*, there are forests on both sides of the road. Along the road, there are sparsely constructed houses. The houses and the forests are living together even though there is some pressure on the forests by the inhabitants by clearing them for small garden plants (field notes). At *Me'ee Bokkoo,* where *Gumii Bokkoo* takes place, there are forests in its southern and eastern parts. The place, where the general assembly takes place and *baallii* (power) is transferred from the former *Abbaa Gadaa* to the new one (for *Maattii* group) is an open space with small patch of forest.

Figure 6: *Me'ee Bokkoo* area

On its northern part, there is a beautiful grazing land. For a moment, it is kept intact; it is not ploughed or settled on. One of my informants, *Muuda Baallii* (27 December 2011*),* told me that "the *Abbaa Gadaa* protects the land. Even on the day of *Gumii Bokkoo,* no one is allowed to cross or walk on the land wearing shoes. The ones who violate the law

of the *Gadaa* and attempt to exploit the land will be punished by the *Abbaa Gadaa*." Now, "on the left side, near the road from *Adoolaa* to *Booree* where *baallii* transfer takes place, a foundation for the construction of Museum has been laid. After the *baallii* transfer takes place here, the making of the law is carried out under the *Me'ee* tree, *Odaa* in the forest on the opposite side, to the east near the road," (*Muuda Baallii,* 27 December 2011).

As the researcher has observed, despite the better protection of the sacred land, sparse settlements are encroaching on the land at a near distance in all sides, (field notes). Hence, this encroachment is worrying to the land. According to Jemjem & Dhadacha, (2011: 308), this sacred land, untouchable equivalent to *Adoolaa* constituting an area within10 kilometers radius has shrunk to less than 1 kilometer radius by development ventures endorsed by central government. The researcher also observed a factory established at about 2-3 kilometers from the ritual place. This observation is consistent with the study of Taddesse (1995) who identified that ritual areas were kept intact in the past but now increasingly under the pressure of human activities.

In spite of pressures on sacred lands that came into being with the conquest of Guji by Menelik II and the weakening of *Gadaa* laws, there are a number of sanctuaries for which the Guji have great respect. Among these, the most common grounds are *Adoolaa, Me'ee Bokkoo, Samarroo (Fuutoo),* which is found to the east of *Adoolaa,* near *Gannaalee* River where the B*aallii* transfer for *Hookkuu* and *Uraagaa* takes place, and *Haroo Gobbuu,* about 40 kilometers south east of *Adoolaa* in *Wadaaraa,* a ritual area for *Galalchaa* sub-clan. There are also numerous shrines in Guji lands where ritual practices take place (Jemjem & Dhadacha, 2011: 305-307). These ritual areas are relatively with better protected natural resources. In a study conducted around *Finfinnee* (Addis Ababa) such as *Bushooftuu* and other area, Lalisa (2008) also found out that, areas in the sphere of the property of traditional religion, *Waaqeeffannaa,* are much more conserved as compared to the surrounding degraded lands.

5.2.4 Pattern of Settlement in Relation to Forests

The pattern of settlement of people influences the conservation of forests. The Guji often do not settle in forests, but outside forests. In my observation of *Anfaraaraa* forest (19 November 2010), I found dwellings and very minor cultivation of maize, and inset *(Musa ensete)* on the sides of the natural forests of the highlands of *Anfaraaraa* forest, where the settlers are mainly the Guji. In the middle and at the foot of *Anfaraaraa* highlands, around *Anfaraaraa* Town, the forest seems thick seen horizontally. However, much of the undergrowths were cleared and replaced by coffee and inset *(Musa ensete)* (field notes). This has a great impact on the biodiversity of the forest.

According to the information obtained from the inhabitants of the area (Gelagile, Jego and Wariso, 19 November 2010), many of the inhabitants were from the Southern Nations, Nationalities and Peoples Regional State, mainly the Gedeo. Here, there was a conflict between the officials of the Borena-Guji Forest and Wildlife Enterprise and the inhabitants on the ownership of the forestland in which ripe coffee in the forest was cleared, an act for which the inhabitants blame the Borena-Guji Forest and Wildlife Enterprise for the loss of the coffee. Likewise, the Forest and Wildlife Enterprise blames the inhabitants for destroying the natural forests for coffee and inset production by encroaching on protected state forests. Identifying the true cause of the problem is beyond the scope of this research and was handled by the court. However, in my observation in the forest, I found the remaining part of the cleared coffee which the inhabitants showed me within the boundary of the protected forests. What has been revolving in my mind is why the Borena-Guji Forest and Wildlife Enterprise had waited until the coffee grew up and became ripe for collection (as observed from the remaining standing coffee trees) and then clearing it? Anyhow, what is important, here, is in the areas where the Gedeos have settled (in and around *Anfaraaraa* forest), coffee and inset production is expanding in the forest and is affecting the biodiversity of the area.

On the other hand, up the hills toward *Booree,* where the majority is Guji Oromo, there is relatively less penetration into the dense natural forest as many of them have settled

outside the forests. “Traditionally, the Guji do not settle in forests. They use forests as shades and grazing areas for their cattle during dry season; and those who do not have cattle need not settle in forests” (*Culuqqee,* 20 November 2010). In relation to this, Taddesse (1995: 37) confirms that cattle come to the middle altitude areas in search of grass and water during dry season and go back to the lowlands during wet seasons. The information obtained from the study informants has shown that the rotational use of forests for cattle herding, as shades and sources of water and grass for dry season, and the settlement pattern of the society seem to have contributed to a relatively better conservation of forests by the Guji (*Liiban*, 1 December 2010; *Culuqqee*, 20 November 2010). On the other hand, the intensive coffee production coupled with inset cultivation by the Gedeo and the Sidama as relatively different from the Guji, who were mainly cattle herders with minor crop cultivation, seem to have a greater impact on conservation of natural forests (field notes). Despite giving emphasis to the rearing of cattle by the Guji and cultivation of coffee and inset by Sidama and Gedeo, the Guji, Sidama and Gedeo have, in general, similar culture of maintaining forests for their livelihood, as shades for coffee and/or cattle. They have similar rituals too (Taddesse, 1988).

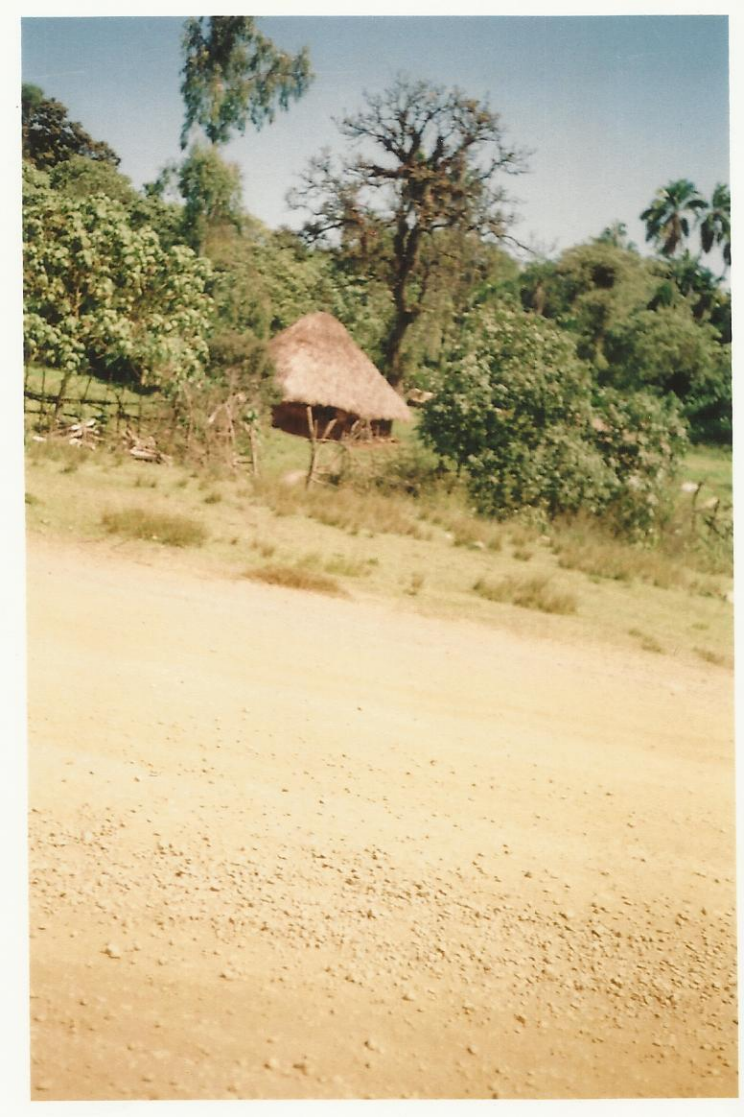

Figure 7: Friendly Settlement around Forest in *Aanaa Sorraa*

Hence, my observations of *Anfaraaraa* forest (19 November 2010), *Me'ee Bokkoo* (27 December 2011), *Shaakkisoo* (10 December, 2010) and other areas show the relatively friendly settlement of Guji around forests.

5.2.5 Selective Conservation of Trees in Agricultural Fields

In my observations of *Kuchoo* forest on 23 November 2010 and 15 December 2010, *Biluu* Forest on 24 November 2010 around *Adoolaa*, *Shaakkisoo* on 20 November 2010

and around *Angadhi-Sukkee-Xooree* in *Uraagaa* on 30 and 31 December 2011, I found many big trees in the agricultural fields. Therefore, these series of observations of the forests in the Guji zone appear to confirm the data obtained from the informants, that the Guji respect big trees.

Figure 8: Trees in Agricultural Fields in *Ganda Biluu*

In relation to this, Negessa (2011: 64) has identified that the Guji do not cut down big trees during the preparation of farm lands because of cultural values attached to them, their ability to attract rain and help to get good harvest. Adurhaman (2004) in his study conducted in *Arsii Negeellee*, has also found out that the Oromo of the area have the tradition of leaving big trees in agricultural fields.

Hence, the Oromo in many areas leave a number of trees in their agricultural fields perhaps to use the trees as shades for their cattle during the dry season, for construction, ritual, medicine or for other purposes or due to the respect they have developed for the

trees traditionally. In *Jiddaa*/*Giddaa Ayyanaa*, where I was brought up, the norm of the society does not allow a person to cut trees from the agricultural field of another person without getting permission from the person.

My observation in Guji and my lived experiences in *Jiddaa Ayyaanaa* could be witnesses to the idea of Bassi (2003: 11), who stated that the Oromo have the ethos of selective management of trees as, for instance, in the agricultural Oromo highlands where many trees characterize the agricultural fields of the Oromo.

Moreover, Salviac (1901), based on his observation in different parts of Oromia, clearly states how the Oromo are so concerned about forests. Therefore, what I observed in Guji Zone seems to go well with the findings of Bassi (2003), Salviac, 1901), and with my own experiences at *Jiddaa Ayyaanaa*. Thus, it appears that the Oromo in general and the Guji in particular have had the tradition of conserving trees in agricultural fields.

5.2.6 Species Selective Conservation of Forests

My key informants (*Culuqqee*, 20 November 2010; *Jiloo*, 15 November 2010 and *Dullacha*, 21 November 2010) have indicated that all plants are useful and together give beauty to the land even though they differ in their uses. Consequently, the care given to them depends on their uses. This idea is well explained by *Culuqqee* as follows:

> *Trees are trees. However, based on their growth and their uses for human beings and in increasing the fertility of the soil, some trees are more useful than the others. For example, some trees like Heexoo/Koosoo (Hagenia Abyssinia), Waddeessa (Cordia abyssinica), Birbirsa (Podocarpus falcatus), Hindheessa (Teclea nobilis), Gololcha (in Afaan Oromo), Gudubaa (Polyscias fulva), and Baddeessa (Syzngium gaertn) are useful for construction and furniture. Especially Hindheessa and Gololcha which are very strong and durable and can pass from generation to generation are more preferable for construction. Soft trees like Bakkaniisa (Croton macrostachyus), muka hurraa hurraa (soft wood) are useful for increasing the fertility of the soil (Culuqqee, 20 November 2010).*

The idea that 'trees are trees' seems to show the society's holistic outlook toward trees, that all trees are useful. On the other hand, they give care for different species of trees to use the trees for different purposes. With this regard, some plant species like *Hiddii (Solanium marginata)* and *Eebicha (Vernonia galamenis),* serve as medicines (*Baatii,* 17 November 2010). Hence, different species of plants are conserved for the particular uses they have. The species selective conservation of trees by the Oromo based on their uses becomes vivid when we consider the attention and care given to *Odaa* in Oromo land. In relation to this, *Culuqqee* has stated the following:

> *The Oromo proverb about Odaa that we learned from our fathers says that Odaa has three things on it. It has water under it; fruits on its tips and a grey stem. It has the complexion of Eebicha (Vernonia galamenis), a tree whose leaves cattle feed on during dry season. Eebicha of the cattle owners has a complexion of a married man. A married man is believed to have a good complexion in Guji as he is given care by his wife. Perhaps it was due to this that Odaa was selected from among the trees and the general assembly of Gadaa (Gumii Bokkoo) is conducted under it. It is under it that judgments are carried out and decisions are made; one becomes Abbaa Gadaa; one becomes expert or hayyuu; and one becomes jaldhaaba (a military or police in Gadaa). It is said that it is the one who attended the meetings under Odaa that has news about laws as they are told to the attendants there. Therefore, Odaa buluu is a special ceremony where the yaa'a gadaa (gada practitioners) are expected to spend the night. That is why it is said that 'it is the one who passed his time under Odaa who has oduu (news)' (Culuqqee, 20 November 2010).*

As could be understood from the quotation above, the proverb appears to reflect that *Odaa (Ficus sycomorus)* has many advantages in that it absorbs water from the ground through its roots and maintains the moisture content of the soil under it. It also has a good, attractive complexion and it bears fruits. It is a big tree with expanded branches which make it suitable to conduct meetings under it. The other informant, *Jiloo* (15 November 2010) also said *"Odaan banqaqaa dha. muka ardaa jilaati; muka aananiiti. muka nagaa fi araarati. mallattoo dagaaginaati."*

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Figure 9: Meeting under *Odaa*

As stated by *Jiloo*, *Odaa* has very large branches and broad leaves. As a result, it is a tree under which the *Gadaa* assembly, arbitration and decisions are made. Consequently, it is associated with peace. It is even believed that harmful animals like snakes, baboons and monkeys do not live on it. It is also believed that lightening does not affect *Odaa*. But it requires careful and long time observation to prove whether this belief is true or not. In general *Odaa* is considered as a symbol of peace and development. That is why "the Oromo often conduct meetings, worship their *Waaqaa* and bless one another under it" (*Baatii*, 17 November 2010). Accordingly, *Odaa* is considered as the symbol of the overall Oromo indigenous socio-political system, *Gadaa*, in which one comes to power democratically and peacefully and stays on power only for eight years on the basis of his contribution to the wellbeing of his society at successive levels of *Gadaa* grades.

Odaa is also the symbol of the greenness of Oromia. Oromia used to be very much rich in natural resources, and even today it is relatively the richest region in Ethiopia in this

regard. As it is practically observed, natural resources including forests have been under great destruction due to a number of factors that this study will deal with later on. To revitalize the tradition of conserving forests, Oromia Forest and Wildlife Enterprise Director, *Raggaasaa Ayyaanaa* (9 November, 2010), insisted that, "the enterprise has been working hard in the area of conservation and it is preparing the seedlings of *Odaa* to be distributed to the people so that they plant and grow it in their fields". He also added that his organization "is trying to make *Odaa* a national tree so that it will become popular and every citizen will give care for it."

Moreover, fruit bearing plants that are used for honey production and trees which serve for hanging beehives on, medicinal plants, plants which serve as wild food are given special protection. Fruit and seed bearing plants, not only those used for food and honey production but also others are given care by the Guji. This seems to be associated with indigenous knowledge of Guji Oromo to maintain plants by giving care for their reproduction, (*Barii* & *Dullacha*, 21 November 2010). Giving care for fruit and seed bearing plants is common in many parts of Oromia. For instance, in West Shewa, around *Amboo,* an elder named *Tulluu* (16 April 2012) stated that "in our tradition we do not allow our animals to graze in the forest mainly during their flowering season in order not to thwart their reproduction but we do so during dry season when there are less flowers." Giving care for flowering and seed bearing plants is also common in *Wallaggaa*. My observation of *Hagenia abyssinica* with beautiful hairy flowers, which the local people use as medicine (*Araarsaa,* 16 December 2011; *Diidoo,* 31 December 2011) on intensively agricultural lands of *Booree* and *Daamaa* districts in Guji, where it is difficult to get natural trees, appears to be a good witness for species selective conservation of trees/forests in Guji.

My informants, (*Uturaa,* 24 December 2010; Tamiru, 25 November 2010; *Diidoo,* 31 December 2011 and others) were able to identify the species of trees in the forests by their names and uses which I was not able to record for their being numerous. This would help in the use of the plants for their appropriate purposes and in the attempt to recover the destructed forests with indigenous species.

The above findings seem to show that the Guji Oromo elders know how all plants are useful in different ways but, based on the specific purpose for which they are used and the level of their utility, selective conservation is made for them. An interview made with *Liiban*, (1 December 2010), Head, Borena-Guji Forest and Wildlife Enterprise, supports the idea of the elders that the Guji people have had the tradition of protecting some species of big trees such as *Ficus Sycomorus, Cordia abyssinica, Syzngium gaertn, Podocarpus falcatus, Ficus vasta, Juniperus abyssinica, Hagenia abyssinica, Polyscias fulva* which are now protected by the government. This selective conservation of trees by the Oromo was also found out in the studies by Bassi (2003), Abdurhaman (2004) and Bassi and Tache (2007).

5.2.7 Conservation of Forest Related Natural Resources (Grass and Water)

Related to the conservation or wise use of grass and water, the *Gujii* (mainly in lowlands) and the *Booranaa* have *seera marraa-bishaanii* (the laws of grass and water) (*Culuqqee,* 20 November 2010). He stated that open lands are used for summer season grazing and forestlands for dry season. Similarly, permanent water sources in and around forests are used for dry season and surface water (rain water) is used during summer. In lowlands, wells are used during dry seasons. The implication is that the law recognizes the rotational use of grazing land and water which is useful for the recovery of grasses and forests of the areas. However, my informants at *Zambaabaa* reported that, "with an increase in the number of population and shortage in rain and grazing land, the productivity of the traditional way of rearing cattle is declining" (*Halakee,* 29 November 2010). Therefore, with the change of communally owned land into personal ownership through certification and the shortage of grazing land, the traditional rotational use of grazing land may not seem to work even though it is ecologically sound. Consequently, a modern method of rearing cattle on small land needs to be put in place, with earnest caution that it should not ignore the culture of the people.

In spite of different traditional conservational activities, clearing and/or burning of forests for different purposes is the major human activities in the rural parts of Ethiopia. These

activities are mainly done to get or expand *fichaa* (farm land). Fire is also set to forests to initiate the growth of new grass for grazing and to ease the hunting of animals by creating open spaces. Moreover, careless use of fire in collecting honey and by the smokers could cause the destruction of forests. In addition, fires caused by lightening are also a threat even though they are not as common and dangerous as fires caused by humans which cause destruction to the forests.

5.2.8 The Proper Use of Fire

In Guji Oromo's culture, careless setting of fire to forests is prohibited. "Even when it becomes necessary to use fire as in the case of preparing farm land, buffer zones are first prepared so that the fire will not go beyond the limit of the needed area. The use of fire in forests was more common in grasslands than in high forests as the purpose was to initiate the growth of new grasses," (*Halakee*, 29 November 2010; *Barii* & *Dullacha*, 21 November 2010). "In the past, when the fire was used to burn grasslands, even though you may not have used buffer zone, the fire would not enter into the forest since the land in the forest was wet. It is recently that the land has become drier and drier. The dryness of the land could be attributed to the increase in the number of population, the decline in forest cover and the amount of rainfall" (*Halakee,* 29 November 2010).

With regards to the use of fire in harvesting honey, *Baatii* (17 November 2010), *Barii* & *Dullachaa* (21 November 2010) have pointed out that honey collection is not new to their people. The people never make careless use of fire. Honey harvesters carry fire in one of their hands and water in the other. After using fire for harvesting honey, they do not allow any bit of the fire to fall on the ground and burn the forest; they extinguish it with the water.

Traditionally, honey is collected from grooved trunks of trees or from the local beehives which are long, cylindrical objects hung high in trees. Fire in hand, the harvester climbs the tree using a rope, smokes out the bees and then drops the fire down to the ground.

This fire, if not put off immediately, could cause fire. However, the proper use of fire by the Guji indicated above could help to overcome this problem.

The proper use of fire by the people of Guji is reflected in other activities. For instance, in the year of the transfer of *baallii* from the former to the new *Abbaa Gadaa*, the burning of forest is strictly prohibited (*Jiloo*, 24 December 2011). The *yaa'a* or *gadaa* practitioners never carry or take fire with them when they pilgrimage for ceremonial settlement; they always make a new fire or *Ichima/Uchuma* (small sticks that produce fire by friction). This may also seem to reduce the risk of destructive wildfire. There is a riddle from Guji, '*hadhuma dhallatte, haduma lafa fixxe*', whose answer is 'fire'. It means 'born now and destroyed the land quickly.' This is to instill the danger of fire if mismanaged.

Asked, "If these are your traditional practices, what were the causes of the devastating forest fires of 2000 in your area around *Shaakkisoo* and *Adoolaa*?" many of my informants at *Adoolaa, Shaakkisoo* and *Zambaabaa* were not interested to respond to this question. I observed a feeling of fear from many of them and some systematically passed over the question. But three elders who did not want their names mentioned indicated that the people of the area got annoyed with the administrator's blaming of them for causing the devastating forest fire. They argued that the Guji people have no culture of setting fire to *baddaa* (forest). Even when the preparation of agricultural land requires fire, it is done carefully using buffer zone. Moreover, the elders pointed out that attributing the forest fire to the careless use of fire by the people in preparation of agricultural land and honey collection did not seem sounding as their people know how to use it properly. They furiously expressed that they have never seen such destructive forest fire in their lives. They also stated that after the fires started, the attempts made by the surrounding community to extinguish the fires were not effective as they were starting simultaneously from other areas as they were being extinguished from one area. According to the elders, it seemed that the fires were set in deliberately using matches. However, the elders did not pass over without indicating how there was a competition among the settlers, investors and indigenous people over the land in the area.

In my view, the forest fires that broke out in Guji in 2000 need to be seen in relation to the forest fires that occurred throughout the forestlands of Oromia and some areas of neighboring regional states. As identified by Dechassa (2001: 3), the forest fires of 2000 in Ethiopia started at the end of January 2000, and raged for about three months. They occurred in *Baalee*, *Booranaa*, *Jimmaa, Iluu Abbaa Booraa, East Wallaggaa, East* and West *Harargee* and *Arsii* zones in Oromia and in some parts of the Benishangul Gumuz, Gambella and Southern Nations, Nationalities and Peoples Regional State. Even though the use of fire to prepare land for agriculture before the rainy season under the control and management of community members is common in Ethiopia, the forest fires of 2000 were certainly different from previous fires and constituted a serious disaster due to both the scale and the type of land affected.

It was estimated that in *Baalee* and *Booranaa* (including *Gujii* before it became a zone) alone, the fires destroyed 100,000 hectares of forest land, 699 heads of wildlife, 353 heads of domestic animals, 112 houses, 167.20 metric tons of agricultural food crops, 1226 hectares of forest coffee, 300 beehives, 24,087 kilograms of honey and 2400 kilograms of wax. These destructions were estimated about 331,179,405 birr in aggregate (Wirtu, D, 2000 in Dechassa, 2001: 11). Above all, the fires eliminated indigenous trees which take many years to grow and brought irreparable ecological damage (Dechassa (2001: 3). During my observation of the forests around *Adoolaa* and *Shaakkisoo,* I came across secondary succession of undergrowths in a high density in the 2000 fire affected forests, particularly in *Zambaabaa* forest. The undergrowths are too dense and are affecting the remaining trees in the forest. That means, they have become weeds.

Figure 10: Thick Undergrowths in 2000 Forest Fire Affected *Zambaabaa* Forest

The second unique character of the 2000 fires was, unlike the previous ones which were common in savannah lands, they were concentrated in highlands and high forests (Dechassa, 2001: 3). Surprisingly, the fires occurred in the rare dense forests remaining in Ethiopia.

In my data collection, my informants indicated how the forest fires in Guji zone were initiated and expanded deliberately even though from their responses they seemed to be afraid of exposing the real cause of the fires. Dechassa also identified that:

> *Even though government officials all agree that traditional use of fires for agricultural production caused the fires, many scholars and politicians trace the historical scars and evidence that fires in high forests were used in political struggles and locally to dismiss anti-government bodies. During this study, some of the key informants including farmers gave the impression that they had no interest to openly comment on the causes of the fire (Dechassa, 2001: 3).*

Woldesilassie, in Dechassa (2001: 2), indicated that the use of forest fires for political purposes was not new in Ethiopia. Historical evidence indicates that high forests of Ethiopia were victims of war, conflict and forest fires. Yodit/ Gudit (849- 897 A.C) ordered her army and the local people to set fire into the forests stretching from Tigray to Gondar and Wollo, lest the forests were serving as hiding grounds for the soldiers of emperor Dinald. Similarly, Gragn Mohammad (1527- 1542 A.D) ordered his troops to clear and burn all the forests stretching from the eastern lowlands to the central highlands to make access to battle fields easier and to destroy strategic hiding grounds of the soldiers of emperor Lebene Dingil and clergies.

Moreover, (Tekletsadik, 1961: 30) has shown that, "Atse Tewodros also went to Zege (island in Lake Tana) and plundered all the properties of those he thought supported his opponent (Tedela Guwalu) and uprooted garden plants."

Hence, it appears that Ethiopian forests have been victims of conflicts and wars. On my part, I want to raise some questions that revolve in my mind about the forest fires of the 2000 in Oromia which may help the readers to think critically and have better insight about the problem.

- Why did the fires start in different parts of Oromia and in parts of neighboring regions simultaneously?
- If they were for agriculture and honey collection as claimed by administrators, were all these forestlands agricultural lands? Did the preparation of agricultural lands take place at the same time in these different agro-ecological zones? How did the hanging of beehives and the harvesting of honey or the preparation of agricultural land take place in different areas of the same forest simultaneously as the forest fires were observed to start in different areas of the same forest simultaneously as in the cases of *Shaakkisoo* and forests around *Adoolaa*?
- How could farmers simply set fire to the forests to lose their own coffee, honey, cattle, houses and different forest products in such a way?

- How did the forest fires concentrate on dense highland forests unlike the common traditional lowland (savannah or grassland) fires?

I believe that identifying the causes of the 2000 devastating forest fires would help not to repeat such notorious deeds in the future. However, it requires rigorous research in the future provided that people around the forests feel free to express their true observations and feelings. Nevertheless, the forest fires of 2000 have brought about the destruction of the rare natural forests that the country may not get them back in generations' time. It devastated the forests that the indigenous people have maintained for a long time using their customary laws and rules of conservation. Hence, it might have brought about hopelessness and showed powerlessness of indigenous people to conserve forests using their indigenous knowledge as before. To mitigate the negative impact of the forest fires on the attitude of the indigenous people and their traditional conservation approach, it requires working with these people closely. Even though my research has not identified the evil doers who caused the fires, I want to raise the saying of the Guji Oromo *"jaarsi gowwaan biyya abaaree wajjiin bada."* This means, "a foolish elder curses the whole community and perishes with them."

From this, it could be inferred that elders have the power of acceptance by God. But if they become foolish, they may use it wrongly and put themselves and their community in danger. Analogically, human beings have the capacity of either maintaining or destroying forests. However, if they become foolish and destroy forests, they will also bring an end to themselves.

5.2.9 Laws of Forest Conservation in *Gadaa* System

All of my informants reported unanimously that their culture does not allow them to misuse natural resources. This instigated me to raise question about what rules or laws of natural resource conservation are there in *Gadaa* System which is the custody of Oromo culture (Asmarom, 1973; *Gadaa*, 1999). *Culuqqee* explicated in his own words that they decree in the general assembly, *Gumii Bokkoo*:

> *Marri woyyuu dha; bishaan woyyuu dha; mukti woyyuu dha; lagni woyyuu dha; gaaleen woyyuu dha; maddi woyyuu dha; hardaan woyyuu dha. Bosonni gaaddisa lafaati, seera qaba hin ciramu; muka qaba mana ittiin ijaarratan; gaaddisa qaba, loon jala yaa'aan; yeroo bonaa jallatti dheessan; gaaleen muka irraa ni dhorkama; maddi ni dhorkama (Culuqqee*, 20 November 2010).

Culluqqee said that on the general assembly of the *Gadaa*, they make and decree laws which protect grass, water, trees, rivers, tendril (hanging plants used for tying up wood together in construction of houses and kraal, and making traditional beehives), sources of water bodies and the land as they are considered 'sacred'. Forests give shade for the land and serve as shelter for cattle during dry season; people get wood and tendril from forests for house construction. Hence, forests should not be cleared and destroyed.

Culuqqee further explained that there are grasses for winter and summer grazing seasons. Accordingly, they are conserved for the purposes they are intended for. He also explained about the conservation of water and tendril. As it is not easy to get water everywhere, streams and wells are protected from spoilage by animals and improper use by humans. Tendrils are not simply cut and destroyed. They are conserved for proper use. The conservation of forests and trees are effected by not felling growing and big trees unless it is a necessity to do so for a particular purpose. Instead, branches and dead trees are used. As mentioned before, forests are protected for different purposes, for instance, as shade for animals, as sources of fodder, water, honey harvesting, and so on. There is no careless settlement in forests. Gada laws give protection to forests and the related resources (*Culuqqee*, 20 November 2010).

5.2.10 Enforcement of Gada Laws on Forest Conservation

When asked what would happen to those who do not obey the laws of conserving forests, grasses and waters decreed at *Gadaa* assembly, *Culuqqee* (20 November 2010) stated that "those who fail to respect *Gadaa* laws are made to slaughter their bulls for their wrong doings and in certain cases chased out of the forests by *jaldhaaba"*. He also said '*ni lubooman', that* is to mean, they are punished for their wrong doings." In relation to

this, Taddesse (2004: 76) noted that the Guji people seem to have good knowledge of the advantages of trees. Because of this, they have law which forbids the felling of big trees. The *Abbaa Gadaa*, the *Qaalluu* as well as elders in the village often proclaim that trees should not be cut down. If a person cuts down a tree without the consent of the *Qaalluu or Abbaa Gadaa,* s/he undergoes corporal punishment in the form of beating in public or a payment in cattle. Thus, they perceive that cutting down of trees is comparable to killing a person. It is possible to learn such active laws of the people from the proverb presented below:

> *Mukti lubbuu dha, lubbuu hin huban.*
> (Trees are life; one does not harm life).

In relation to this, Negessa (2011: 42) states that forest management and conservation related measures in Guji range from advice-beating-bull offering-killing. But currently there is no practice of killing a person. Thus, such customarily strong laws have helped in conservation of forests in Guji.

In general, the Guji Oromo's indigenous knowledge of forest conservation seems to be based on the utilitarian values of forests, the belief system and the norms of the society. Accordingly, through their day-to-day life experiences, the Guji know that forests serve as shades for their cattle, human beings and for coffee production and other undergrowths. They are sources of medicinal plants, flowering plants and big trees for collecting honey, wood for fuel, construction and household furniture, tendril for construction and making of traditional beehives, wild fruits and seeds for food. Forests also serve as sources of water and grass particularly for dry season grazing, as places for ritual practices; as aesthetic resources. Furthermore, they increase the fertility of soil and provide suitable climate for living.

The Guji's holistic outlook of nature in which they believe that, different species of trees give beauty and shade to the land together and related resources like water sources, grasses and wildlife appears to have contributed to an integrated approach to the

conservation of natural resources. In addition, the special attention given to some species of trees could serve as a base for an attempt made to preserve endangered species of trees in modern conservation practices. The care given to the growing part of a plant is a good conservation practice of the people. Their seasonal use of grazing land and water sources in a sustainable way and the care they give to forests as sources of all these related resources shows how much they are far-sighted. These indigenous conservation practices seem to have helped Guji to retain forests in the zone even though now they are under great pressures. Therefore, the indigenous knowledge of the Guji Oromo on forest conservation appears to coincide with the deep culture of the classification of the Cultural Iceberg by Barnhardt and Kawagley (2005).

The belief system of Guji has also helped in the conservation of forests. Traditionally, like the other Oromos, the Guji Oromo believe in *Waaqaa*, who is the creator of all creations. They believe that mistreating creation would bring punishment from *Waaqaa* (*the* creator). The care given to big trees by equating them with Guji elders and growing trees with Guji youngsters may emanate from their belief system. The protection of ritual areas is also the result of their beliefs. Associated with their beliefs, their norms which they call *ceera* or known as *safuu* or *qaanii* (in *Wallaggaa*) play an important role in conservation of forests as violation of them is considered to be *fokkoo, ceera cabsuu* or *safuu wallaaluu* (violating customary law or ignorant of the norms of the society) and brings social disgust and exclusion. Therefore, Guji's interaction with natural resources (including forests) is guided by *safuu* (indigenous norm). Improper destruction of *uumamaa* (creations) is considered as violating the will of *Uumaa* (the creator, God).

The laws passed by the general assembly of *Gadaa, Gumii Bokkoo* on conservation of forests, grasses and water appear to have a significant contribution to the conservation of these resources.

The styles of living of the Guji in which they traditionally settle on the outskirts of the forests and maintain the forests for the dry season grazing and their attempt to protect some areas like areas of ritual practices seem to go with the reserve approach to

conservation even though they might not have practiced in its scientific way whereby some forests are remained intact for their biodiversity.

Concerning the traditional/customary conservation practices in *Boorana* (including *Gujii)*, Bassi and Tache (2007: 51) elaborated that the Borena conserved landscape is an outstanding example of territory managed in sustainable and eco-compatible way through customary institutions and customary laws. They stated that within the broader landscape category (IUCN Protected Areas Category V), certain zones are customarily managed under more restricted rules of access and use corresponding to the IUCN Categories Ia (Strict Natural Reserve), Ib (Wilderness Area), and III (Natural Monument)(Bassi & Tache, 2007: 63).

In my observation of the forests, there are some wilderness areas but many of the forests and ritual areas are now affected by humans. Therefore, even though, the categories mentioned by Bassi and Tache (2007) appear to go in line with some realities on the ground, the former wilderness areas are now affected by human activities.

From the discussion made so far, it is possible to understand that the *Gujii* Oromo have rich custom/tradition of conservation of forests and the related natural resources like water and grasses. Their indigenous knowledge of forest conservation is also reflected in some of their sayings.

> *Bosona mancaasuu jechuun uccuu ofirratti gubuu jechuu dha qaama ofii gubuun hin hafu waan ta'eef.*
>
> (Destroying forests means just burning your clothes on yourself; since it may not stop without burning you).

This is simply to mean that the destruction of forests will bring the destruction of human beings. Hence, it is a saying that warns people to conserve forests.
The other proverb of the Guji is:

Nama wayyaa hudduu irra deeffate dhuufuu hindhaga'anii; namni biyya ofii dhaanee balleesse waan jala qubatu hinqabu.

(He who has worn clothes or has not exposed his buttocks, his fart could not be heard. The man who destroyed his country has no place to shelter or live).

That is to mean that, in contrary to the man who has worn clothes, a man who destroyed his country has nowhere to shelter or live. In this saying, resources of the land, particularly forests, are considered as clothes. As human beings cannot live without clothes, destroying forests will make the land bare so that we have nowhere to live. In other words, the proverb indicates the need to conserve the resources of the land including the forests in order to live in this world.

There are also a number of sayings in Oromo which show the need for conservation. The following are some of the many examples of such proverbs:

Waan ol kahan, ol kahanii fudhatu.
(What you put up there, you stand up and take).

This means that, if you have not kept something for the future, you will have nothing to search for when the need arises. A similar saying which denounces the overuse of resources only for the present need without thinking about their uses for tomorrow is:

Bor hin beeknee, qoodaan bukkoo lama.
(A woman who does not worry about tomorrow has two objects for dough).

That means, she has excess dough in two objects to be consumed now without thinking for tomorrow.

Hence, there are sayings and proverbs in Guji and the Oromo in general that show the fact that the Oromo and the Guji in particular have their own culture of conserving

resources. A relevant question that one would raise at this juncture is ‘what does this indigenous knowledge or customary practice of forest conservation look like these days?’ The following section will address this important question.

5.3 The Current Practices of the IK of Guji on Forest Conservation

The current practices in using indigenous knowledge for conservation of forests refer to the state at which indigenous knowledge is in the community these days. The data obtained through interviewing elders, youngsters, experts in the area of conservation and practical observations of fields show both continuity and deterioration of indigenous knowledge.

The presence of natural forests relatively in a good condition as in some areas of the zone such as *Bilooyyaa, Anfaraaraa, Waadaraa, Shaakkisoo, Magaadaa, Uraagaa and* big trees even in agricultural fields, the better protection of forests in ritual areas, the settlement of indigenous people on the margins or outskirts of the forests living with the forests together, the use of branches of trees for construction and dead trees for fire particularly in the countryside, the observation of trees standing with some of their branches being cut leaving their apex or growing part in many areas are the indicators of the presence of indigenous knowledge of the Guji Oromo on conservation of forests. The confidence and the flow of ideas of the elders in responding to questions about their customary conservation of forests in the process of interview also seem to indicate how the indigenous knowledge is still with them.

Figure 11: Forest in *Me'ee Bokkoo* area

However, the destruction of forests in many areas as in the case of *Biluu* and *Shaakkisoo* forests, particularly where there are settlers, and the destruction of forests for fuel, wood processing industries and construction mainly around *Kuchoo* and *Manquubsaa* forests which are nearer to towns, the clearing of forests for agricultural activities in many areas in the countryside, and youngsters' less awareness of the indigenous knowledge of the Guji Oromo (interview with youngsters) around *Biluu, Kuchoo* and *Zambaabaa* forests and at *Kuchoo* Primary School (grades 5-8) seem to show the deterioration of the indigenous knowledge of the Guji Oromo on forest conservation (FC). My key informants have also indicated that the tradition of the Guji Oromo on conservation of forests is deteriorating (*Jiloo; Baatii; Culuqqee & Barii*, November 2010).

Barii, who I interviewed at *Shaakkisoo,* (17 November 2010), informed me that he was a *kebele* chairperson during the Dergue regime. Comparing the status of the forest during the Dergue regime with the present time (2010-2011) and the role of modern education with the customary conservation, he said that, *"ijoollee yeroo nuti hinbaratiin bosonni*

eegamee, yeroo keessan yeroo namni barateetti akkana manca'ee mitii jedheen namoota warra baratanii fi dargagootatti hima." That means, he tells the educated people and the youngsters that the forests that had been maintained in the past by uneducated people are being destroyed during the time when there are educated people (in modern education). In this case, it appears that the traditional approach to conservation is valuable in conservation of forests. With the growth of modern education, however, it has been declining and forest destruction has been increasing. The Borena-Guji Forest and Wildlife Enterprise officials also uncovered the declining of the indigenous knowledge of the Guji Oromo on conservation of forests (*Liiban*, 1 December 2010; *Bariisoo*, 16 November 2010).

Concerning the failure to enforce *Gadaa* laws nowadays on those who violate the laws and destruct forests, *Culuqqee* contends:

> *We, Abbootii Gadaa (the Gada leaders), now do not have power. The power/authority is in the hands of kebele administrators, small group (goti) leaders and the police. Seeing the severe damage made to forests in our area, I applied to government bodies to the level of Oromia Regional State. But I did not get response. Being hopeless, I told my God and have simply left it out now (Culuqqee, 20 November 2010).*

Culuqqee's saying shows how much the tradition/custom of the society is losing its previous functions in current/modern practices. As broadly described and explained in chapter two, the review of related literature, indigenous knowledge has been deteriorating throughout the world, bringing great negative impacts on conservation of natural resources in the world. The deterioration of indigenous knowledge has necessitated the assessment of the factors which have contributed to its decline and searching for a means to revitalize and use it.

5.4 Factors Hindering the Development and Use of IK of Guji on FC

There are a number of intricate factors that have hindered the progress of indigenous knowledge in the world. As the factors are so complex and intertwined, it is very difficult

to form distinct categories for them. Likewise, factors that have been hindering the development and use of indigenous knowledge of the Guji Oromo on forest conservation are so complex. They are mainly related to external factors, the influence of other groups on Guji people. Based on the information obtained through interview, observation in the fields and documentary analysis, I have presented the factors forming some categories as follows even though the categories may not be exclusive.

5.4.1 The Suppression of Indigenous People and the Influence of Settlers

The Guji Oromo have been facing newcomers both from within and outside Ethiopia, a situation that has an impact on the deterioration of their indigenous knowledge.

Baatii (17 November 2010) stressed that "the Guji Oromo are among the eldest of the Oromo groups with rich history. But we were belittled by a person named *Goobanaa Daaccee*." *Goobanaa Daaccee* is known by the Oromo as an Oromo who 'had bitten his mother's nipple or committed betrayal' as he was a war leader in the conquest of the Oromo and their country, Oromia, by Menelik II in 1880s-1900. The elder was recalling what happened to the Guji Oromo as what happened to Oromo of the other areas. The conquest of Guji by Menelik, supported by some Oromo like *Goobanaa Daaccee,* had brought a great damage to Guji's indigenous way of administering themselves and they became subjects/ tenants to the conquerors.

Recalling about the war between the indigenous people, the Guji, who were ill- equipped with spears and very traditional weapons, and the Amahara ruling class and their supporters who were well armed with machine guns, *Barii,* who I interviewed at *Shaakkisoo, (*21 November 2010), reported that "before the war began, the Amahara sent their Oromo servants to the Guji to submit peacefully and to become *gabbars*/tenants for them. But the Guji had refused and fought the enemy fiercely but with archaic weapons." Concerning the condition of the war, there was a saying of the Guji people who were surprised by the speediness and mercilessness of the rifle guns "*wonni boonsho'oo nama aati, yennaa boonshoon achii bukki jettu nami asii buphi jedha*." This is roughly to mean

that "they (the Amhara) started fighting with a cylinder like hollow stick; the moment they open that hollow stick at the other end, immediately our fellow man smashes to the ground" (Jemjem & Dhadacha, 2011: 389). "The conquerors fought the Guji with modern machine guns that the Guji people even had not known before. Finally, the leader of the Guji understood that they could not withstand the force of the enemy and told the conquerors, 'I would be gabbar/tenant for you.' Then, the conquerors asked the people to bring their former administrator. Fearing that if their *Abbaa Gadaa* was presented to the conquerors, they would kill him, the Guji people discussed and agreed to present another person among themselves who had already passed *Gadaa* grade. The conquerors made the person their own representative at the bottom level, who was collecting taxes from and administering the indigenous people," (*Barii*, 21 November 2010).

From this historical account, even though it needs more substantiation on when, where and who were involved in the war, it is possible to understand that the Guji Oromo had lost their land and the right to administer themselves. As a result, the communal way of land holding that the Guji had been practicing and the *Gadaa* administration were replaced by conqueror's governance. *Gadaa* (1999: 63) elaborates what happened to the Oromo as a result of the conquest. "The Oromo had lost their lands and become tenants for the conquerors. The Oromo were shared among the conquerors with their lands to serve them as tenants. In addition to that of state machinery, large tracts of land were given to the Orthodox Church from which she was collecting taxes from the indigenous people: the Oromo." Similarly, Hinnant recorded Guji's understanding of Menelik's administration as follows:

> *Mengist (government) allowed the 'Amhara' to take land and livestock from Guji. Men were compelled to work in fields owned by these 'Amhara' and to carry 'loads on their backs like donkeys'. Their women were sometimes forced to work as domestics in the homes of towns' men and to be their mistress (Hinnant, 1990: 67).*

Jiloo (15 November 2010) indicated that "the conquerors confiscated communal lands on which people did not settle and made only their own, saying it was no man's land. In

such a way much of the forestlands became the possession of the conquerors." *Barii*, on his part, states that:

> *Before, they were only Guji Oromo who had been living on this land. We were leading our life under Gadaa governance; there was abundant forest managed by our own traditional way. The problem of the destruction of forests was associated with the coming of others to the area (Barii, 21 November 2010).*

The quotation above is buttressed by *Culuqqee* (20 November 2010) in his report that "the Guji did not even know the making of charcoal and selling it before the conquerors came. Our people learnt the making and selling of charcoal from the new comers and now we are doing it in a similar way."

Hence, the views of *Barii* (17 November 2010) and *Culuqqee* (20 November 2010) seem to go with the idea that the destructive activities to forests seem to have come after the coming of conquerors that outlawed the traditional practice of the indigenous people and replaced by their own. My personal experience also shows how people who are strange to the culture of the indigenous people may bring new culture which could be destructive to natural resources.

It was in 1985 that, for the first time, I saw people who cut a growing tree and sell as firewood in my birth place, *Nafuroo Dinii*, in *Jiddaa Ayaanaa* District of East *Wallaggaa*. These people were settlers who came to the area from the northern parts of Ethiopia during the Dergue regime. The indigenous people of the area were using dead trees for firewood. Even though a number of trees are found near their dwellings, they go to distant areas to search for dead trees. This has contributed to the conservation of trees and forests in the area. After observing the newcomers, some of the indigenous people have begun to do the same way.

However, it may lead to a mistake to consider all new cultures are learnt through imposition. Some may be learnt by the indigenous people thinking that the new culture is more important than theirs or out of a feeling that the practice of a new culture may offer

a short-cut solution. However, this may be true in a condition that indigenous people have freedom to make choices. In the case of the Guji and the Oromo in general, however, the issue of choice became very narrow with their conquest and occupation by the Amhara ruling class. Treating factors that had contributed to the conquest of the Oromo seems to be beyond the scope of this research. What is important, however, is to struggle the legacy which is still working in the 21st century in different forms against the use of the indigenous knowledge of the society. This is what I will treat under the market economy.

Coming back to the conquest of Guji, Hinnant (1977) describes that, Menelik promoted parasitic garrison towns in Guji which housed soldiers needed to maintain control of the region, along officials such as tax collectors, judges and local governors These towns highly depended on the exploitation of farmers' produce for their survival (Taddesse, 2004: 9). The establishment of towns also played their part in imposing government rules on indigenous people, assimilating indigenous people to the Amhara culture, exploiting the natural resources of the area (Taddesse, 2004) and in debasing indigenous knowledge of the Guji in general.

The conquest by Menelik was, therefore, a turning point in the history of Oromo and their indigenous knowledge. The Oromo *Gadaa* administration and the ritual places where *Gadaa* was practiced were banned, and many of the *Abbootii Gadaa* (Gada leaders) were killed (*Gadaa*, 1999: 63). The information by *Barii* (17 November 2010), that "the people feared the conquerors would kill their *Abbaa Gadaa*" seems to emanate from the people's practical experiences of the killings of *Abbaa Gadaa* by the conquerors.

The suppression of the indigenous practice of Guji had continued under the subsequent Ethiopian rulers. For instance, elders recalled that the attempt made during Hailesilassie regime to uproot *Odaa Adoolaa* had failed with help of *Waaqaa* (*Jiloo*, 15 November 2010; *Baatii*, 17 November 2010). In support of this idea, Jemjem and Dhadacha (2011: 308) state, "Hailesilassie once plotted to defame the name of the place and tried to uproot *Odaa Adoolaa* using bulldozers. However, history witnessed that it is really not an ordinary tree; the blades and hammers of three bulldozer machines were consecutively

broken into pieces in trying to uproot and dismantle the tree away from the area." Anyhow, the emperor changed the historical name *Adoolaa Woyyuu* (holy place) into Kibremengist.

However, during their occupation of Ethiopia (1936-1941), the Italians abolished the *naftenya-gabar* system (serfdom) and land task in Guji; the Guji were given greater freedom to conduct their traditional socio-economic and political practices (Taddesse, 2004: 19). The Italians also constructed the two north-south roads through the Guji (*Finfinnee-Negeellee* and *Finfinnee-Mooyaalee*) and established lumber mills which offered occasional employment to some Guji (Taddesse, 2004). Here, it is necessary to note that the establishment of lumber mills is the introduction of modern technology that enhances the destruction of forests unless it is systematically done by maintaining the sustainability of forests.

After the expulsion of Italians out of Ethiopia, Hailesilassie intensified his assimilation policy to deliberately and systematically change the ethnic identity of Guji. The traditional practices and customs were looked down upon as inferior and evil, and thus discouraged (Taddesse, 2004: 20).

The conquest of the Guji and the exploration of Gold and other natural resources of the area (virgin forests, fertile land for crop production and rearing of animals) seem to attract people from other parts of Ethiopia to Guji. Consequently, "in addition to the conquerors, many people immigrated to the area from the neighboring areas like Gedeo, Sidama and from distant areas like Shewa (mainly agriculturalists) and from different parts of the country as miners and merchants" (*Jiloo*, 15 November 2010). The immigrant agriculturalists expanded the cultivation of cereal crops, a practice which is destructive to forests of the area and the ritual areas of the indigenous people which were almost kept intact until the conquest of Guji. *Araarsaa* (16 December 2011), who was originally from *Meettaa Roobii* in Shewa and came to *Adoolaa Reeddee* before 25 years said "when we came to this area, the indigenous people did not know the cultivation of cereal crops as such."

The conquest brought about the degradation of the culture of the indigenous people and opened door for the new comers not to respect the tradition of the Guji. As it was discussed before, in my field observation at *Anfaraaraa,* where the Gedeos settled, the forest is under great encroachment for the cultivation of coffee and Inset **(***Musa ensete).* In other areas in Guji, where there are many people from the central highlands and from Hararghe, cereal crops production is common and forests are greatly endangered. The recent resettlement areas like *Sawwaanaa* in *Shaakkisoo* and *Biluu* in *Adoolaa Reeddee* districts are places where natural forests are rapidly declining (field notes).

Traditionally the Guji are mainly pastoralists with limited subsistence agriculture. But now, many are moving toward cultivation of crops being influenced by the settlers and the introduction of new tenure system by the government which has weakened the communal traditional land use of the Guji. Moreover, the extensive mining activities in the forests, the concentration of people in the area and the greater demand for fuel wood and construction have put pressures on the existing natural forests of the area (*Barii,* 21 November 2010; *Jaarraa,* 21 November 2010). This means that in addition to mining, which is carried out in the forest area destructing the forests, polluting the water and the atmosphere of the area, some of the immigrants who fail to be successful in mining also engage in agricultural activities and the cutting and selling of wood products for fuel, construction, and wood processing industries (*Bariisoo*, 20 December 2011).

Moreover, after the socialist period, the resettlement of migrated communities and returned communities from abroad have also made the *Booranaa* and the Guji lose their customary land to others (Bassi & Tache, 2007). In addition, the resettlement program that has been going on within the Oromia Region has recently aggravated the deterioration of the indigenous knowledge of the Guji Oromo and the destruction of forests. My informants at *Adoolaa* and *Shaakkisoo* reported that people from *Harargee* who have settled in and around forests are acting in a dangerous way to the forests that the indigenous people have maintained up to now (*Jiloo, Baatii, Culuqqee, & Bariisoo,* November 2010). The data for the resettlement in the years 1995/2003-1998/2006 obtained from Guji Zone Drought Prevention and Preparedness Office also show that

many of the legal resettlements are in *Shaakkisoo* and *Adoolaa Reeddee* Districts, which are with better forest coverage.

Table 3: Number of Settlers in Guji (2003-2006)

No	**District/*Aanaa***	**House heads**		**Number of Family**	**Total**
		Males	Females		
1	*Shaakkisoo*	575	21	3087	**3683**
2	*Adoolaa Reeddee*	370	14	2708	**3092**
3	*Waadaraa*	78	4	357	**439**
Total		**1023**	**39**	**6152**	**7214**

Source: Guji Zone Drought Prevention and Preparedness Office (2004/ 2012)

The above data was obtained from the Guji Zone Drought Prevention and Preparedness Office after I observed the resettlement areas in *Shaakkisoo* and *Adoolaa* where there is a great pressure by the settlers on the natural forests of the areas. Hence, it seems to confirm that the rapid forest destruction observed in the areas is associated with resettlement in the areas. The data included the settlers who were legally registered. The discussion made with the community, however, revealed that the number of settlers is by far greater than the official document. The case in point is *Ganda Biluu,* where the legal settlers were 70, but about 2000 settlers are living there (*Roobaa*, 26 December 2011).

Some of these settlers came to the area illegally on their own being attracted by their friends and by some advantage seekers from among agriculturalists, businessmen and government officials (*Culuqqee*, 20 November 2010). As indicated by *Culuqqee* (20 November 2010), "the legal settlers were given a hectare of land and the rest who came illegally did not get any land". He argues that, even the land given to the legal settlers is not enough for them. Those who came illegally have been working on the land of the indigenous people who possessed the land legally as well as others like businessmen that possessed the land illegally and share 50% of their produce for the possessors of the land.

This initiated some of the indigenous people and other benefit seekers to attract the settlers to the area. Hence, *Culuqqee* (20 November 2010) is sympathetic to the settlers attributing the immigration to the area to poverty, and blaming the indigenous people and others for making the settlers tenants. Moreover, he blamed the government authorities for selling the forestland to the settlers, investors and businessmen illegally. All these are done in and around forests, particularly in *Shaakkisoo* and *Ganda Biluu* mainly for production of coffee as well as cereals (field notes).

My informants told me that the settlers from Hararghe have a proverb which goes: 'two men should not pass the night together; one should leave'. By analogy, one of the men represents forest and the forest has to leave space for the real man from Hararghe as they are incompatible. The settlers from Haraghe do not respect the culture of the indigenous people that states;'*lattuu fi guddattuu hin ajjeessan*', which means, it is not appropriate to kill up-shooting and growing tress (*Tamiru* & *Guyyoo*, 25 December 2011). They are agriculturalists producing cereals, coffee, and *chat* (*Catha edulis)*. As a result, they are greatly clearing and converting dense natural forests which the indigenous people have maintained up to that time into settlement and agricultural lands. My observation of *Biluu* Forest in *Adoolaa* District and *Shaakkisoo*, where the people from Hararghe have settled was a proof of the information obtained from my informants.

One of the experts in the office of *Adoolaa Reeddee* District Forest and Wildlife Enterprise, *Husen* (November 2010) said, ''when we accuse those who destroy forests, the administrators and the court leave them freely." He told me a case in which a *kebele*/ *ganda* chairperson who accused the settlers for their destructive activities to the forests and settlers' acquisition of the chairperson for being anti-resettlement program by the government, which led to the chairperson's deposition from his authority.

Figure 12: Natural Forest Cleared by Settlers at *Biluu*

The document of the Borena-Guji Forest and Wildlife Enterprise also shows that the illegal selling of lands has become common in *Oddoo Shaakkisoo* District (BGFWE, 2001/2010). The informal discussion with different government employees also exposed the presence of illegal selling and buying of land in the area. In a focus group discussion, *Barii, Dullacha* and *Jaarraa* (21 November 2010) indicated that the business in the selling and buying of land is run by the chain created with the higher authorities at district and Kebele/*Ganda* levels. *Barii* further described:

> *In forests, you get many huts and many people clearing the forests. When the police are called, the destructors immediately leave the area. Hence, there could be a mobile phone communication among the destructors of the forests and the businessmen and government officials. That is why the destructors are not caught by the police" (Barii, 21 November 2010).*

The above quotation confirms the observation by *Culuqqee* (20 November 2010) that, businessmen and government officials have been involved in the selling and buying of land. The selling and buying of land has been carried out obscurely by the name of

renting land, (informal interview with community members on 25 December 2011). The settlers have destructed forests and cultivated coffee and cereals. The chairperson and the Development Agent (DA) *(*26 December 2011*)* of *Ganda Biluu*, though have mentioned their unawareness of the selling and buying of land, they concurred that the settlers who have settled in and around forest areas have brought about the destruction of the forests of the area. But now, the situation is minimized as a result of the demarcation of the forestland and the provision of education to the community. Culluqqee (20 November 2010), on his part, criticized the resettlement of the people in and around forests while there are possibilities of settling them in non-forested areas. In line with this, Negessa (2011: 69) argues that the authorized resettlement of the Hararge Oromo in 1995 E.C by the Oromia Regional Government has been a cause for the destruction of forests of the area and it has opened the door for additional illegal settlers who are coming from Hararge, local areas and other places.

In general, even though "the Guji Oromo have not had the culture of destructing forests, people from the other areas like those from Hararghe, central and northern parts of Ethiopia and encroachment on the forests by Gedeo and Sidama, have endangered the existing forests" (*Barii*, 21 November 2010). The encroachment on the Guji land by the neighboring groups under the influence of the Ethiopian rulers goes back to emperor Hailesilassie, who had made Guji to be under Sidamo and called by the name 'Jamjam Awraja', rather than by own name. The vast land of Borena was also included under Sidamo (Jemjem & Dhadacha, 2011). In such a way, people from the neighboring areas, Gedeo and Sidama were made to settle on the lands of Guji such as *Anfaraaraa* and *Girjaa* (my informants at *Anfaraaraa and Adoolaa,* November 2010).

The Sidama and Gedeo are engaged in coffee production, lumbering, cutting trees for fuel and construction purposes. When the indigenous people apply to the administrators against the destructive activities of these people, the administrators say it is the right of nations and nationalities to live and work wherever they like, (community members at *Biluu*, 25 and 26 December 2010).

Figure 13: A Big Tree cut for Lumbering in *Ganda Biluu*

It is true that educating people on conservation of forests and soil and the demarcation of forests have been going on extensively in the zone during my second round field work in December 2011. However, the local community indicated that the destruction of forests is still going on and the destructors are producing coffee and cereals and getting a lot of money. This has made the indigenous people, the Guji, angry at the situation and do the way the settlers are doing to the forests, (Tamiru and *Guyyoo*, 25 December 2011). This idea was supported by the elders *(Barii, Dullacha* and *Jaarraa*, 21 November 2010), who want the Guji Oromo to be coffee producers in the future. The new residence of *Culuqqee,* on the newly cleared forestland, seems to show the attempt made by him to have a share from the already destroying forests (field notes). Hence, it appears that there is competition between the indigenous people and the settlers on forestland. It is clear that if this situation continues, the natural forests of the area will be destroyed within a short period of time.

Figure 14: The Researcher with his Informants at *Shaakkisoo*

From this, it is possible to understand that the successive resettlements, the introduction of new culture to the area and the government's imposition of its laws on the people with the degradation of the customary laws of the indigenous people's administration and management of resources have brought about the deterioration of indigenous knowledge of the Guji on conservation of forests and the related natural resources. In general, the less concerned behavior of settlers to the new environment was found out by Le Breton (1993) and Zelalem (2009) as was also indicated by almost all of my informants at *Adoolaa* and *Shaakkisoo*. The failure to recognize the interests of the indigenous people

in Oromia, as indicated by Buli (2001), Nishizaki (2004), Zewudie (2009), Watson (2006) and Workineh (2005), is also recently witnessed in Guji as observed in the resettlement of newcomers in and around forests and range lands, a situation which the surrounding community blame because the settlers were made to settle without their consent (e.g., community in *Ganda Biluu,* 5 and 6 December 2011). The researcher's question is that, if resettlement has continued in and around the natural forests that the zone has, where shall be the new resettlement sites in the future for both the settlers and the indigenous people of the area after the exhaustion of the resources of the area?

The destructive act of the administrative bodies of the area on the existing natural forests by selling and buying of rural land which outlawed the constitution of Ethiopia also require close examination and corrective measures to maintain and recover the dwindling forests of the area.

In the constitution of the Federal Democratic Republic of Ethiopia (1995), article 40 number 3, it is stated that "land is a common property of nations, nationalities and peoples of Ethiopia and shall not be subjected to sale or to other means of exchange." Hence, what is going on at *Shaakkisoo* and *Biluu* is a violation of the constitution of the country. In general, the prevention of the existing forest from destruction is better than its cure. In relation to this, *Culuqqee* (20 November 2011) said, "If the existing forest is lost, it is not easy to recover it. I remember the seedlings that we planted around *Adaamaa* Town with Oromia Region's higher officials many years back which have not brought any significant change to the environment of the area until now."

However, most of the time, Oromia TV and Radio broadcast the improvement of the living conditions of the settlers and the recovery of the lands from which the settlers had gone to the new resettlement areas. On the other hand, they do not mention the destruction of the forests in the new resettlement areas. Hence, there appears to be a lack of objectivity on the information transmitted about the conditions of the forests in the resettlement areas.

In this regard, I am not opposing the resettlement of poverty stricken people. But I argue that rather than settling them in forested areas, it is more appropriate to settle them in grasslands and other non-forested areas. The other alternative could be using the income obtained from the forests in the form of timber production and other forest products to rehabilitate the poor people rather than settling them in the meager natural forests that the region as well as the country is left with.

I think it is necessary to raise some questions about what is going on in Guji as well as in Oromia so as to have a better understanding of the problems and make a wise use of natural resources particularly forests and the related resources. Is it due to lack of agricultural land that people are settling on forestlands? To the researcher, it does not seem so as the region as well as the country (Ethiopia) is believed to have vast uncultivated agricultural land and is attracting investors from different parts of the world. Is it due to unsuitability of the available lands for agriculture that new resettlements are going on in and around the very rare natural forest available in the country? Again, it does not appear so in case of Oromia as fertile lands on which people are producing food crops have been given to investors, not from the remote areas but from the central highlands of Shewa. The cases in point are many horticulture companies around *Finfinnee* and extensive maize producing farms around *Baakkoo,* west Shewa. On the other hand, if investment is more economical than small scale farming, what if we absorb people who settle in forests in these investment activities at least as laborers?

5.4.2 The Expansion of Farmlands

The resettlement of crop producing newcomers in the area has greatly influenced the economic activities of Guji in which many indigenous people are now transforming to crop production. This has also influenced their indigenous practice of conserving forests tied with cattle herding and small scale farming. With the increase in farming, the destruction of forests has also increased. In areas where there is more cereal crop production like *Daamaa* and *Booree,* there is less forest cover. The destruction of forests observed in many areas such as in *Biluu, Shaakkisoo, Anfaraaraa*, between *Shaakkisoo*

Town and *Uraagaa*, particularly on the hills is associated with agricultural activities like the cultivation of coffee, inset, maize and cereal crops such as barely, *teff* and wheat.

Figure 15: Dense Natural Forest under Clearance for Agriculture

Concerning the economic activities and their impacts on forests around *Zambaabaa*, *Baatii* (17 November 2010) indicated that "the government encourages us to be farmers but our land is not suitable for crop production. I do not know the criteria with which they classified us as farmers." As I have observed, even though I am not an agriculturalist by profession, the area is dry, infertile and does not seem suitable for crop production. The few attempts made in promoting farming seem to be further worsening the land to the extent that, in the future, even getting the grazing land will become very difficult. That is why *Halakee* (29 November 2010) commented that "our land is drying and it is easy for the fire to destroy the existing forests." In connection with this issue, one of the youngsters, *Roobaa* (29 November 2011) said, "due to dryness of the land, it has become very difficult even to rear animals as before."

The interview with elders at *Shaakkisoo* and *Adoolaa* also supports the observation of Oba (1998) that the large land of the Borena and some parts of the Guji around the lowlands of *Negeellee* and middle altitude areas like *Zambaabaa*, and parts of *Shaakkisoo* and *Adoalaa* does not seem suitable for sustainable agriculture particularly cereal crop production due to insufficient and erratic rainfall. But the change in the land holding system which restricts the mobility of people has forced them to engage in agriculture, preferably in coffee production, as less productivity of cereal crops is noticed through experience. Hence, this requires a thorough study by experts to identify an economic activity which is friendlier to that particular environment and more profitable for the people of the area.

In my view, encouraging the people to move toward agriculture particularly cereal crop production may bring more damage to the fragile environment of the area with little benefit to the local community. The forest and wildlife enterprise of the area also needs to work more on how to rehabilitate the vegetation of the area before the land remains bare. The conservation activities should not be limited to government protected forests. They have to involve patches of forests on community lands. I was informed that the enterprise has begun teaching the people to plant trees even in their own fields. But it has to work hard and bring observable changes on the ground.

"The expansion of agriculture into forests occurs by both individuals who have agricultural land and who have less or who do not have at all like young school leavers" (*Gadaa,* chairman of *gandaa*, *Bokkuu,* DA of the *gandaa* and the community of *Biluu*, December 2011). However, the chairman and the DA said that this situation is now minimized. The chairperson said that "as the forestland is demarcated by Borena-Guji Forest and Wildlife Enterprise, no more extra land is to be given to the needy". However, the indigenous youngsters who have completed grade 10 and are unemployed furiously threaten that if they are not given agricultural land on which they can lead their lives, they would destruct forest as the newcomers have done to it. This appears to be a controversial issue that requires urgent attention. In relation to this, Mulugeta (2004) stated that the expansion of farmlands into forests is dangerous to the existing forests and

the other related resources. Consequently, with the loss of the existing forests, the agricultural activities run today may not be feasible in the future.

Concerning the expansion of agriculture and its impact on traditional resource conservation of the *Booranaa* and *Gujii*, Bassi and Tache (2007: 52) state that the customary rules and modalities of resource conservation of the people have been progressively eroded by the introduction of agriculture since the time of the incorporation of the *Booranaa* into Ethiopia. These decisions were made disregarding the customary management of natural resources and have produced negative environmental impacts. Accordingly, it appears that the *Booranaa* and *Gujii* institutions and norms have been unable to cope with changes intruding into their lands and decisions on land allocations and land use imposed upon them by the state administration (Bassi & Tache, 2007: 66). This situation has dismantled their customary institution, *Gadaa* System and its laws of resource conservation. The weakening of the *Gadaa* by modern administration to enforce its traditional laws of resource conservation has also been identified by Oba (1998), Bassi (2003) and Bassi & Tache (2007).

For me, rather than destroying the forest for immediate benefits and bringing a lasting damage to the resources and the people of the area, it is preferable to work on how the surrounding community will get benefit from the existing forests through different means such as systematic timber production and traditional forest coffee production. My argument is that, whatever an activity it is, due attention must be given to the rare natural forests that the country as well as the region has been left with. The gross effect of the destruction of forest could be noticed, for instance, by the drought that occurred in many parts of Borena and lowlands of Guji in 2010-2011 in which large number of cattle, on which the livelihoods of the society depend, died.

5.4.3 The Development of Market Economy

Market economy has its own impact on conservation of natural resources of an area. *Culuqqee* (20 November 2010) stated that "the selling of fuel wood and charcoal was not the culture of our people. But now learning from the settlers, our people are doing it not less than them." This activity is intensified by the money obtained through selling of these materials. One of the guards of *Kuchoo* forest, *Uturaa,* reported:

> *With increasing wood processing industries, small scale wood works and demands for fuel wood and for construction in and around towns, the cutting of trees has greatly increased. I am getting 280 birr monthly salary. But those who cut trees and sell could get this amount within two or three days (Uturaa, 24 December 2010).*

Kuchoo forest is about 2 kilometers from *Adoolaa* town along the way from *Finfinnee* to *Negeellee* town. It is a protected forest demarcated by the Dergue. The outer part of the forest consists of mainly Juniper trees, and different species of natural forest are found in the inner parts of the forest. However, the outer part of the forest was greatly affected by deforestation. I made two days observations to the forest. The first day, I did not see any guard but I observed people carrying firewood to the town. Even on the second day, I found a pile of wood that seems ready to be taken somewhere, most probably to *Adoolaa* Town.

About a kilometer away from *Kuchoo* forest, there is a private wood processing industry. When I asked the forest expert who was with me from where has the industry been getting wood as raw material, he replied that "it has been getting from the other area.'' As it was hinted by the guard, there was no evidence that it does not get from the illegal tree cutters from the *Kuchoo* forest.

My frequent observation in *Adoolaa* town from November-December 2010 also helped me to see how the selling of charcoal and firewood is common. A sack of charcoal is sold for about 30-40 Ethiopian birr. A small pile of wood costs about 10-15 birr. These activities are the indications of the presence of pulling factors in the nearby town for the

cutting of trees in the surrounding areas. Therefore, the need for wood for construction, fuel, and furniture, and saw mills in the area has contributed to the destruction of forests.

The other factor is the involvement of investors and rich people in agriculture (both cattle herding and cultivation of crops) as described before. Moreover, the gold mining activities in *Adoolaa* and *Shaakkisoo* both by large investors and small scale miners have impacted the forest and water resources of the areas (*Culuqqee, Barii &Dullacha*, November 2010). The traditional mining of gold both by the locals and the people coming from all corners of Ethiopia and the existence of companies like MIDROC *Laga Dambii* Gold Mine, Adola Gold Mine Enterprise, and Kenticha Tantalum Mining Project in forests have greatly destructed the natural forests of the area as well as the indigenous forest conservation strategies of Guji (Negessa, 2011: 73). For instance, MIDROC Gold Mining Enterprise has deforested around 57.19 hectares of dense forest for mining activities (Demissie, 2009: 52), in Negessa (2011: 73). Adola Gold Mining is carried out in the dense forest of Beda Kessa. Here, "more than 80% of the 9 km² area was covered by dense forest before the mining activity started and now about more than 70% of the 9 km² area is destructed due to mining activity (Jarso, 2009: 26), in Negessa (2011: 73).

Concerning this, Dechassa (2000: 6) identified that in Oromia and SNNP regions, forestland was provided to investors without adequate feasibility studies in the name of free market and investment. Commercial investors are, therefore, interested in exploiting and using the available resources. This can be exemplified in the case of MIDROC Ethiopia in *Shaakkisoo* woreda of Borena zone (now Guji zone) where the enterprise is operating a gold mine.

Commercial timber extractions were also endangering the remaining *baddaa* (forests) which were seriously affected by the forest fires of 2000 in Guji. In my observation of the areas, I found that the Borena-Guji Forest and Wildlife Enterprise was producing large timber from the forests and transporting to *Finfinnee* and processing the rest there, (field notes). In these activities, the enterprise is getting a lot of money being deposited in the account of Oromia Forest and Wildlife Enterprise. One of the experts at the *woreda*

(district) level indicated that, half a year ago, they generated about 1.5 million birr. However, the centralization of the management of the money and its less allocation to the *woreda* made the workers at the *woreda* level complain for the shortage of financial resources to run their activities properly (field notes). This may also have a negative impact on considering the needs and interests of the people inhabiting around forests. On the other hand, almost all the protected forests were established during the Dergue regime by removing the inhabitants from their lands. These people are now observing the government selling and getting millions of birr from their forest resources. What attitude would these people develop to these protected forests?

The Forest and Wildlife Enterprise of the area argues that it tries to help the surrounding community by providing them with some facilities like chairs for schools. However, the surrounding communities around *Kuchoo* and *Zambaabaa* forests, however, have indicated that, rather than serving as laborers in cutting trees, making ways in the forest (which involves few people), no special benefit is obtained from the forests. So, how far is the market economy that disregarded the interests of the local people effective in the conservation of forests?

The eviction of indigenous people from their lands by the name of development and investment has been common in Oromia. This does not require special research; it is enough to simply go around *Finfinnee* and the major towns in Shewa and observe what is going on. In relation to this, Kenate (2008) identified that the expansion of Addis Ababa to the surrounding agricultural lands has brought about the disintegration of social ties among the people, the emotional attachment of people with their environment, unemployment, loss of access to common property (grazing lands, forestlands) and so on. Similar situations are going on in many parts of Oromia as mentioned before even in forest areas as in *Gujii*, *Baakkoo* in west Shewa, *Gumaroo* tea plantation in *Iluu Abbaa Booraa* (Workineh, 2005), *Baabbilee* elephant sanctuary in *Harargee* to mention some of the cases.

Here, the argument is not simply opposing investment and money economy. However, the investment and any development project need to consider the needs of local people and should not dismantle their livelihoods. Rather, they should bring betterment to the life of the people. Above all, they should be done in such a way that rare resources like forests are maintained sustainably. Why have these investment activities not mainly focused on sustainable development by absorbing the displaced people in the development projects so that they do not become more impoverished and get involved in destructive activities? Why is priority not given for displaced and poor people? If these people may not fit the type of the labor force that the investment projects require, why does the government not train them? To what extent are these investment activities underway without considering the sustainable use of natural resources? Above all, this work requires insightful administrators and experts who work in collaboration with the community and the community's traditional institutions like *Gadaa* and who give priority to the needs and interests of the people and to the sustainable use of scarce resources on which the whole life activities depend.

5.4.4 The Weakening of Traditional/ Customary Governance

With the conquest of Guji and the replacement of *Gadaa* by the conquerors' tyrant administration, the customary administration of Guji has declined (*Jiloo*, 15 November 2010; *Barii*, 21 November 2010; *Culuqqee*, 20 November 2010). The consequent strengthening of the emperors' rules and the suppressive systems they followed have continued to bring a further debilitating effect on the customary governance of the people.

The Ethiopian regimes' rule from its very inception has "outlawed the *Gadaa* governance and imposed an autocratic rule on the people. This was followed by immigration of people from the north and central parts of Ethiopia" (*Jiloo* and *Baatii*, November 2010). These people are with different cultures including mainly those who do not abide by the rule of *Gadaa*. Accordingly, the slavery system of Menelik II which snatched the Guji people of their rights to their indigenous land and made them subject to their conquerors,

the feudal system of Hailesilassie which made the people landless tenants (*Gadaa*, 1999), the socialist system of the Dergue which encouraged an inconsiderate expansion of agriculture/farm (Bassi and Tache, 2007) and villagization (Taddesse, 1995) had negative impacts on traditional administration of the Guji people and its customary laws of resource management. In other words, the policy that the Ethiopian rulers have followed has negative impacts on the indigenous administration and indigenous conservation of forests.

The villagization program that was carried out without the needs of the people, violating their traditional settlement and administration, has made the mixed agricultural people (practicing livestock herding and cultivation of crops) concentrate on small lands. Various plants such as enset *(Musa ensete), gesho (Rhamnus prinoides*), coffee and sacred forests/shrines (*woyyuu*) of Guji were cleared from the village sites. Many trees were cut for the construction of new houses. The concentration of people and cattle in limited areas has degraded the forests and the soils of the new villages. Hence, from all policy measures implemented under Mengistu regime, villagization was the major blow to the Jamjam (Guji) forests and the environment (Taddesse, 1995: 206). The current status of the *Gadaa* administration on resources is clearly explicated by the desperate words of *Culuqqee*:

> *We do not have power. The authority is that of the government: administrators of gandaa. Had we have power, how could the forest have been destroyed in such a way? We could have protected it using our laws. Now if we use our laws, the kebele administrators say that you are going in contrary to the laws of the government. Accordingly, if someone accuses us, we are to be presented in front of the government court. For instance, the forestland cleared in the rural area could be that of a merchant or a government employee possessed illegally either through buying or other means who you may have not seen at the site. If you accuse such a person, the person may say, I have never gone there. I am a merchant or government employee. At the end of the day, the accuser would get ashamed. The merchant or the government employee knows when the land is cleared and if measures are to be taken, he/she prepares a fertile ground for destructors of the forest to escape freely (Culuqqee, 20 November 2010).*

The quotation above shows how the *Abbaa Gadaa* and the local people became powerless in protecting their resources and the destruction of forests that is going on through the trickery ties/chains created among some businessmen, government employees, and administrators working for their own personal benefits. That means, the traditional institutions functioning actively at individual house, village, clan and *Gadaa (gumii*) levels in conserving forests in the past (Negessa, 2011) have lost their roles. The disregarding of the customary laws of the indigenous people in such a way has been damaging the natural forests and the related resources of the area.

The continuous weakening of *Gadaa* administration and its customary laws of resource management was identified by different researchers (Oba, 1998; Bassi, 2003; WIBD, 2005; Bassi and Tache, 2007). Specifically, WIBD put it as follows:

> *The pastoral indigenous institutions are run by elders with accumulated knowledge of the ecology and experiences. They have structures up to grass root levels that handle different issues. Younger people who lack the knowledge and experiences, on the other hand, lead pastoral associations. Currently, there is no clear demarcation as to the responsibility of the traditional administration and government administration in resource management. However, the indigenous institutions are losing their power of enforcing whatever sanctions they want to impose on resource abusers. The local institutions may not be able to impose sanctions and fines on the resource abusers without recognition from pastoral association (WIBD (2005: xxi).*

Hence, it is possible to understand from the above quotation that the traditional administration has its structures at different levels, but it has been losing its power of enforcing rules on the transgressors of its laws. In traditional administration, the measures taken include physical punishment, offering one's own property and, in some cases, social exclusion on the basis of personal behaviors. Accordingly, people who ignore decisions of clan leaders are excluded from resource use. In addition, for instance, those who make sexual contact with a virgin girl are totally expelled from the society. If the girl becomes pregnant and gives birth before marriage, both the man and the girl are called *cabana* and are ostracized from the system (WIBD, 2005).

Under the current system, some of the cultural values and rules have been challenged. For example, the formal institutions are challenging the exclusion and out casting of *cabanaa* from the system on the basis of human right conventions. Elders explain that *cabanaa* is increasing nowadays as formal institutions give them protection (WIBD, 2005: x).

The weakening of this traditional law of the people may bring more resource destruction. It encourages more premature pregnancy and school dropouts among girls, increasing bearing children at early ages and fertility contributing to population growth, which in turn has a negative impact on available natural resources including forests. The consequences and implications of this undesirable state of affairs are obvious: more unplanned birth rates, more unethical life styles and more poverty-ridden citizens. Hence, the imposition of statutory law and the transfer of decision-making authorities to formal state leadership are progressively leading to the erosion of legal base of ethnic/customary conservation of forests. As a result, the contribution of customary practices to biodiversity conservation is dramatically declining (Bassi, 2003: 7). Despite its decline in many areas, indigenous governance provides an extraordinary conservation asset (Bassi & Tache, 2007: 60).

As found out by *WIBD (2005: xxi)* and my interviews with elders, most of the formal administrators are youngsters who have formal education but who are inexperienced and with little knowledge of the customary *Gadaa* administration. Hence, their administration seems to have little room for the application of traditional resource conservation. Moreover, the top-down modern administration imposed on the indigenous people from the above has not given formal recognition for the *Gadaa* administration (Bassi, 2003; WIBD, 2005; Bassi & Tache, 2007). That is why, these days, *Abbootii Gadaa* (the Gada leaders) are invited to meetings on which they have no power of decision making. They often remain nominal and serve as statues for the modern administrators, most of *whom* are indeed unaware of the rules and laws of *Gadaa* administration. So what is the use of having *Abbootii Gadaa,* who have lost their authority of decision making even at local level, to participate in big meetings at region and sometimes at country levels? I think the

laws passed and enforced in Ethiopia are top-down almost unanimously throughout the country so that there is no room for the application of G*adaa* laws.

Moreover, many of the present G*adaa* administrators are not well equipped in modern education so as to be competitive in this globalized world. This shows the need to include valuable customary laws of resource conservation and other forms of *Gadaa* administration in formal education so that youngsters become well equipped with them and become the future educated *Abbaa Gadaa*. However, the inclusion of *Gadaa* System and its laws of resource management in the curriculum alone may not be enough unless the age-old suppression of *Gadaa* System is practically changed and replaced by the needs of the people so that they exercise their own indigenous system of administration. Yet, this does not mean the *Gadaa* System is perfect in every aspect. For instance, concerning the role of women in indigenous conservation of forests, *Sorsee* indicated:

> *Women play a passive role in Gadaa administration as we do not take power in Gadaa. Rather we provide services to Abbaa Gadaa and his counselors. We are usually involved in household chores like giving care for children, cooking, milking and processing milk products, fetching water and firewood. Traditionally, our collection of dead trees and branches instead of cutting and drying growing trees and using for fire would help in conservation of forests. In modern conservation too, we could help in planting and growing plants in the garden. Moreover, as we have close relationship with our children, we could play a leading role in influencing our children on their actions in relation to forests (Sorsee, 24 December 2011).*

However, drawing on an empirical study in India, Jewit (2000) challenges the above ideas claiming that women tend to collect dead wood, not because it necessarily represents good conservation practice, but because it does not need cutting; it is lighter to carry and it burns more easily than the green wood. Be it is for easier use, as argued by Jewit (2000), or for conservation purpose, the practice has, indeed, a conservational value. Hence, it appears good to supplement such practices with awareness-raising of the public on conservation of forests and natural resources. It also seems necessary to encourage the participation of women in *Gadaa* administration.

5.4.5 Population Density

Population density is a function of natural growth from within the society (birth rate-death rate) and immigration minus migration seen in relation to the total land area. This means that total population of an area divided by total land area. Based on 2007 Population Census of Ethiopia, the population density of Guji was 74. 81 people/km², greater than the national (67.05) and almost nearer to the region (Oromia)'s (76.93) population densities (PCCFDRE, 2008). It could be greater particularly in the middle and high altitude areas where there is relatively better forest cover and moderate climate.

It is obvious that with an increase in the number of population, the pressure on the available resources increases. One of my interviewees attested that "with increase in the number of population as a result of immigration and increase from within the Guji, the demand for grazing and agricultural lands increased" (*Jiloo*, 15 November 2010) resulting in the destruction of forests. Taddesse (2004: 19) confirmed that "besides natural increase, settlers from the North and from the neighboring groups (who settled on Guji land by *naftenya* landlords) have progressively increased population in Guji land." My Gedeo informants at *Anfaraaraa*, Gelagile, Jego and Wariso (19 November 2010) also concurred that they settled there by Hailesilassie. *Barii* (21 November 2010) stated that "when the land was inhabited only by *Gujii* by the time when there was no expansion of towns and resettlement by others, our law of governing resources was working effectively. With the coming of others and the increase in the number of population, there has emerged the need for more land, a situation which has greatly affected the forests of the area."

In the earlier days, there were various mechanisms to limit family size. Dejene (2009: 20) explicates that, in the earlier times when pastoralism was the mainstay of the Guji households, marriage at the right time and obeying all '*safuu*' (ethics/norm) that *Gadaa* system requires were some of the family planning mechanisms. These include the *cabanaa safuu*. Marriageable age was usually between 30 and 40 for men, and 18 for women as required by *Gadaa* rules. Moreover, women were avoiding sexual relationship

with their husbands for up to 10 months after giving birth to a baby. If husbands attempted to sleep with their wives, this could be reported to elders as a wrong doing. Customarily, this was considered as a transgression on women's rights. Recently, however, with the imposition of statutory laws on the indigenous people, which does not give formal recognition to customary laws, premature pregnancy and *cabana* are increasing (WIBD, 2005). On the other hand, polygamy, which is common among the Guji people (Taddesse, 1988), seems to contribute to the increase in family members and competition among the family on the property of the family. However, the expansion of protestant missionary in the society has to some extent counteracted against the practice of polygamy (field notes).

Hence, the increase in the number of newcomers with their own different cultures to the area, population growth from within, and the disregarding of customary laws have contributed to the destruction of the remaining forests and related resources in Guji.

5.4.6 Poverty

Poverty is one of the major driving forces for the destruction of forests. It is naive to expect the poor who have nothing to eat not to cut down trees to produce charcoal, firewood or other wood products or not to clear the forest for agriculture for the sake of respecting customary as well as statutory laws. This was witnessed by observation made at the *Kuchoo* forest in which the poor were cutting and carrying firewood to *Adoolaa* Town. Moreover, an interview with the women (26 December 2011) carrying firewood toward *Adoolaa* Town confirmed that it is poverty that made them involved in such tiresome and problematic activity.

The interview with the inhabitants at *Zambaabaa* showed that the decline in grazing land as a result of the increase in the number of people and shortage in rainfall forced them to engage in agriculture for the sake of maintaining their lives even though their land is not as such suitable for agriculture (*Halakee*, 29 November 2010). Moreover, elders at *Shaakkisoo*, *Barii* and *Dullacha* (21 December 2010) explained that the sharing of former

communal grazing land to people and resettling of newcomers has made traditional cattle herding impossible and has driven the people toward agriculture (cereal crop production) and cultivation of coffee in the forest. This means that the poor are engaged in the destruction of forests for the sake of getting their means of subsistence.

The resettlement of people could also be initiated by poverty as a pushing factor and the availability of better resources as a pulling factor. In a discussion with settlers from *Haragee* in *Ganda Biluu*, the settlers pointed out that they came to the area being forced by the shortage of agricultural land, rainfall and decline in fertility of soil. Before they came to *Biluu*, they had been at *Sawwaanaa* in *Shaakkisoo* District, where there has already been concentration of settlers. They said that the government brought them to *Biluu* probably to reduce the concentration of people there. The settlers do not want to go back home even if they are given the opportunity as they are leading a better life here than the miserable life that they were leading in *Harargee*. One of the settlers, *Yaasin Muusaa* (26 December 2010) said that, "When I was in *Harargee*, I was worrying about what to feed my children, but now I worry about what and how to educate my children. So we passed through those challenges as the government gave us agricultural land." In a focus group discussion, one of the indigenous people, *Guyyoo* (26 December 2011) responded to *Yaasin*, "We accepted you by the time the government brought you here. This country is rich in forest resources. You know the status of forest coverage here when you first came to the area and the level at which it is now. Hence, I advise you to conserve the forests of this area." The destructive activities of settlers from *Harargee* to the Guji forest have also been identified by (Negessa, 2010: 69).

The destructive activities of settlers from *Harargee* appear to contradict with the claim that the Oromo know how to coexist friendly with the forests. In fact, many of the Oromo groups have lost their indigenous knowledge after their drifting from their cradle land, Guji-Borena area, and their interaction with non- Oromo groups (Asmarom, 1973: 8) and their conquest by Menelik (Gadaa, 1988, 1999; Asafa, 1993, 2008). With particular reference to the Oromo in Hararghe, Mohammad (2008) states that, the emergence of rich landowners through the gradual transformation of the society from pastoralism to

farming, the Egyptian occupation of Harar and their conversion of the Oromo into Muslims (1875-1885) and the Menelik's conquest (1887) have weakened the traditional administration of the society (*Gadaa* System and the embedded indigenous knowledge of the society).

Figure 16: Focus Group Discussants with Assistant Data Collector at *Biluu*

Therefore, in addition to poverty, the already weakened indigenous knowledge of the society appears to contribute to the destruction of the forests in Guji by the settlers from Hararghe.

According to the community members at *Biluu* (December 26, 2011), "observing the rapid destruction of the forests by the settlers from *Haragee*, when the indigenous people apply to the administrators, the administrators said poverty forced them to do so; hence, there is no way out". But the question is: does the settling of the poverty stricken people in the forest worsen the situation or solve the problem? Why we do not work out on other alternatives? It was also indicated that, due to the shortage of grazing land as investors

have been taking extensive range lands, the poor are marginalized and are forced to engage in agriculture, the production of charcoal, firewood and wood for construction, a situation which aggravates the destruction of forests (Bassi, 2003; Bassi and Tache, 2007).

On my part, I think it is better to organize the local people into various groups and engage them in environment/forest sustaining activities by making them beneficiaries (leading a better life) through different forest related activities such as nursery, honey production, getting fodder from the forest, timber production, to mention a few alternative approaches.

5.4.7 The Influence of Religions

Religion influences the interaction of human beings with their environment. My informants, *Jiloo* and *Barii* (December 2011) asserted that, the Guji were *Waaqeeffataa* before the introduction of the major religions: Christianity and Islam to the society. Jemjem and Dhadacha (2011: 268) also indicate that, the original religion of Guji is *Mandooyyuu*, believing in one God and the followers are called *awaamaa* (also called *Waaqeeffataa* in many parts of Oromia). The elders suggested that "the influence of the major religions on the indigenous knowledge of the society particularly in relation to forest conservation was minimal (*Barii*, 22 December 2011; *Jiloo*, 24 December 2011).

In my field work in Guji Zone, I found that the Orthodox Churches are found in towns and they are very rare in the countryside. On the other hand, a number of Protestant Churches, mainly *Mekane Yesus* and *Kalehiwot*, are found in the countryside of Guji and the neighboring zones of Gedeo and Sidama. According to the 2007 population census of Ethiopia, 56.14%, 14.8% %, 11.32%, 7.49%, 2.12% of the Guji were the followers of Protestant, Islam, traditional belief (*Waaqeeffannaa*), Orthodox Christianity and Catholic religion respectively. So among the major religions, the influence of Protestant is greater, whereas that of Orthodox and Catholic is lesser in Guji.

However, the Borena-Guji Forest and Wildlife Enterprise Manager, *Bariisoo* (20 December 2011), who is indigenous to the zone explicated that "as the new religions by their very nature focus on the spiritual aspects of human life, they give less attention to the material aspects of life and the traditional belief and values of the society. Accordingly, they do not give respect to *Gadaa* which is the custody and shrine of the indigenous knowledge of the society for conservation of natural resources."

Concerning the influence of Christianity and Islam on Oromo, Jemjem and Dhadacha (2011: 454) argue that both religions have stolen the limelight from the Oromo African traditional faith by violating and overtaking the forces of its natural development. This goes with the ideas of Borena-Guji Forest and Wildlife Enterprise Manager in that both have negative impact on the tradition of the society particularly in relation to forest conservation by weakening the traditional beliefs and norms of Guji society in which they give respect and care for trees and forests. However, Oromo's acceptance of these religions does not seem to be based on their needs. Even they resisted these religions for a long time in favor and defense of their traditional faith: *Waaqeeffannaa* (*Gadaa*, 1999: 22). But by the time the pressure on the Oromo increased, the Oromo turned to Islam in mass (Atseme Giorgis, P 27), in opposition to Orthodox religion associating it with the conquest of Oromo.

Among the Oromo, the Guji have relatively resisted suppression of Ethiopian regimes and have significantly preserved their traditional system of confederation (Jemjem & Dhadacha, 2011: 45). Due to this strong resistance, the influence of the major religions did not come to Guji directly but indirectly through the neighboring groups (Arsi, Somalis in the case of Islam, and Gedeos, Sidama and Burji in the case of Protestant Christianity) (Jemjem & Dhadacha, 2011: 462).

Jemjem and Dhadacha (2011) found that Orthodox Christianity is limited to towns while Islam and Protestant Christianity took their course of expansion in the countryside. This is compatible with my observation of the distribution of these religions in the zone (2010 & 2011). The influence of Islam is mainly strong in the eastern half of the zone.

As mentioned earlier, the major religions seem to have negative impacts on the cultural and ethical values of the Guji as they used to degrade the practice of *Gadaa*. Most of the time, the followers of these religions fail to give attention to the indigenous knowledge and tradition of the society embedded in *Gadaa* that have worth to all human beings: the conservation of forests.

Contrary to the acts of some of its followers, the Bible does not oppose the conservation of forests. Rather, it appears to support it. The words in the Bible relating to this idea read:

> *…then the Lord God formed man of dust from the ground, and breathed into his nostrils the breath of life; and man became a living being. And the Lord God planted a garden in Eden, in the east; and there he put the man whom he had formed. And out of the ground, the Lord God made to grow every tree that is pleasant to the sight and good for food, the tree of life also in the midst of the garden, and the tree of the knowledge of good and evil. A river flowed out of Eden to water the garden and there it divided and became four rivers. The name of the first is Pishon; it is the one which flows around the whole land of Hav'ilah, where there is gold; and the gold of the land is good; bdellium and onyx stone are there. The name of the second river is Gihon; it is the one which flows around the whole land of Cush. And name of the third river is Tigris, which flows east of Assyria. And the fourth river is the Eu-phrates. The Lord God took the man and put him in the Garden of Eden to till it and keep it. And the Lord God commanded the man, saying "you may freely eat every tree of the garden; but of the tree of knowledge of good and evil you shall not eat, for in the day that you eat of it, you shall die (The Bible Societies, 1971: 2).*

From the quotation above, one can understand that the Lord God preferred and created Eden Garden, which is rich in natural resources: trees and rivers for His creation, man. After putting the man in the rich garden, the Lord God ordered him not only to till the land but also to keep it. Hence, it appears that the idea of conservation or sustainable use of natural resources was introduced by Lord God. Moreover, Lord God commanded the man to freely use the trees in the garden with the exception of the tree of knowledge of good and bad. From this, again, it seems that the idea of protecting trees or forests or protection to some species of trees was introduced by Lord God. Furthermore, the Lord God taught man how the improper use or destruction of protected forests/trees brings

death to human beings. This is revealed by His words as follows: “after the man and the woman had violated the order of God and eaten the fruits of the protected tree, sin and death entered the world and they were sent out of the garden to lead life in this world by laboring a lot” (The Bible Societies, 1971: 3).

Therefore, from this presentation, it appears that the improper use or destruction of protected forests will bring an end to human beings. This is also true in modern science. The biblical ideas are also good lessons for us on how forests are the sources of major rivers in the world. Accordingly, the destruction of forests may bring about the loss of rivers without which life is not possible in the world. This could be the reason why the Lord God ordered man not only to use resources but also to keep them. Hence, the great book, Bible, which is the guideline of Christianity, seems to support the conservation or sustainable use of trees/forests. Though I was not able to treat it, I expect similar concern for conservation in Quran.

Similar to the ideas in Bible, in laws of the *Gadaa* System of the Guji, there is a law whereby those who destruct forests were chased out of the forests (*Culuqqee*, 20 November 2010).

Thus, the religious leaders need to give attention to the conservational values in the tradition of the society in their teaching rather than ignoring them because they are part of *Gadaa* System. Unwillingness to do so is indirectly ignoring their own guidelines or doctrines concerning the conservation of natural resources in general and forests in particular. Therefore, the traditions of the society in *Gadaa* System concerning the conservation of forests like the great care given to young trees, big trees, flowering and seed bearing plants, medicinal plants and the recognition of forests as sources of grasses, rain, and streams, and shades for cattle during dry season need to be appreciated and promoted. In general, the idea of being selective in using important aspects from the tradition of the society, from religions and from science in an integrated or coordinated way for the conservation of forests and the related resources seems useful for sustainable use of resources. Pertaining to this, Mosha (1999: 210) confirms that there is inseparable

link between intellectual and moral formation in indigenous knowledge and modern education.

5.5 Analysis of Factors that Could Help in Revitalizing IK

This part analyzes school curriculum in relation to its inclusion of indigenous knowledge and participatory forest management approach concerning its involvement of the local community, their needs and their indigenous conservation practices.

5.5.1 The Inclusion of IK on Forest Conservation in Modern Education

The assertion by my informant (*Barii*, 21 November 2010) that, "forests which were maintained by the uneducated people have now been under great destruction when there are more educated people (in formal education)," appears to be an indication of the need to evaluate the ongoing education system. Even though there could be a number of factors such as the weakening of *Gadaa* administration, the immigration of people to the area and resettlement, population growth, change in the economic activities of the people that could be the cause for the destruction of forests, lack of relevant education seems to contribute a lot to the problem.

An interview made with *Kuchoo* Elementary School students (grades 5, 6 and 7 students) in *Adoolaa* Town on 18 November 2010 also showed that they have little awareness of the indigenous knowledge of forest conservation that the elders were well aware of. Even they were not able to identify the historical *Odaa Adoolaa* in their town. They were not able to answer questions related to the relationship to and practices of the Oromo under *Odaa* and the laws in *Gadaa* System concerning the conservation of forests. Ideally, these students are between 12 and 15 years age. In *Gadaa*, youngsters of this age level are traditionally at *qarree gadaa* grade, and could participate in ritual ceremonies, public speech, hunting large game animals and cattle raiding from the neighboring Borena, Arsi and Sidama (Hinnant, 1977: 137).

Figure 17: The Researcher with Informant Students at *Kuchoo* Elementary School

However, the students argue that nobody has told them about indigenous knowledge of their community. Some of these students are from the town. As I observed in the town, there were a number of people from different nations and nationalities. The informal medium of communication is largely Amharic though *Afaan Oromoo* is rhetorically the official language and the medium of instruction in elementary schools (grades 1-8). In such environment, blaming only the youngsters for not knowing the culture of their fathers and forefathers (of Guji) does not seem sounding.

One of my interviewees, Ishetu (18 November, 2010) from grade 8 has provided better responses to my questions. He said, "I got the information from my friends in the countryside as I was frequently going there." The other student, (*Guyyoo*, 26 November 2010) that I interviewed in the countryside, at *Zambaabaa* is relatively better in his awareness of IK of the Guji on conservation of forests than those from the *Adoolaa Woyyuu* Town. On the other hand, an interview made with youngsters out of schools (around *Zambaabaa, Kuchoo, Biluu*) on the indigenous knowledge of the society on forest conservation shows that they have relatively better understanding than the students in school (Tamiru, *Guyyoo, Waaqoo, Roobaa*, November-December 2011).

Traditionally, learning in indigenous knowledge of forest conservation occurs through storytelling, proverbs, observing and imitating the more mature adults in the community and seeing while those who destruct forests violating the rules and norms of the community are punished (*Culuqqee*, 20 November 2010; *Jiloo*, November 15 2010). This seems to be consistent with the social cognitive learning theory, which is inclusive of the principles of behavioral, cognitive and social learning theories in which motivation, observation, imitation, praise/reward and punishment are commonly used (Woolfolk, 2010).

However, the elders on their part blame the students saying that, some of the youngsters in school do not listen to what we tell them (*Jiloo, Baatii & Barii*, November-December 2010), and even those who try to listen to elders do it with little attention (*Baatii*, 17 November 2010; *Dullacha*, 21 November 2010). Some of the elders claim that the blame should not go only to the youngsters but also to some of the elders who do not try to share their experiences to the youngsters thinking that the youngsters do not accept (*Culuqqee*, 20 November 2010; *Jiloo*, November 15 2010).

In my opinion, students' attention may depend on the importance of what is learnt from their parents and the community in their schooling and their future lives. If they see knowing something has no advantage for them to lead their lives, they may not give attention to it. Moreover, if the culture of the society is not reflected in the curriculum

that they learn, they may attach less value to that culture. As the history of modern education in many developing countries shows, modern education curriculum has failed to reflect indigenous knowledge (Ullumishewa, Kaloko & Morican, 1997). It is this situation that has instigated me to analyze the textbooks of elementary schools of Oromia.

5.5.1.1 Content Analysis of Elementary School Textbooks in Relation to IK

In this study, the identification of the indigenous knowledge of the Guji Oromo on conservation of forests was mainly carried out in an inductive process by eliciting ideas through interview with elders and *Abbaa Gadaa* and making observations in the field. Accordingly, the following indigenous knowledge contents were identified:

- Caring for forests as sources of wood, water, wild food, medicine, flowers for bee keeping and for increasing the fertility of soil
- The conservation of forests as shades for animals, human beings and for coffee production and other undergrowths(e.g. *gesho, enset*, grass)
- The use of branches for construction and dead trees for firewood
- The rotational use of grazing lands and water bodies
- Giving protection to big and growing trees
- Giving care for the apex or growing part of a plant
- The appropriate use of fire: using buffer zone by clearing or digging and the use of water to extinguish fire after use
- Giving protection to forest and other resources of ritual areas
- Minimizing settlements in forests
- Attaching worth to forests for their aesthetic value (giving beauty to land)

The indigenous knowledge contents identified in this study appear to be more comprehensive and inclusive of the indigenous knowledge of Oromo on forest conservation than that I came across in literature review.

Based on the identified indigenous knowledge contents, qualitative content analysis of the textbooks for elementary schools in Oromia was carried out to investigate the inclusion of these contents in the textbooks. Hence, the inferences in the study are based on the contents of the textbooks themselves (Mayring, 2000). The content analysis was carried out on the textbooks that students are using in their schooling on assumption that textbooks are the most accessible materials to students rather than syllabuses and teacher guides.

In the content analysis, I have made a rigorous reading of the contents between the lines. I analyzed all the contents of the subjects taught in elementary schools (grades 1-8) of Oromia assuming that some of the detail contents could not be identified from the table of contents or titles. As the textbooks analyzed were many in number (50), I found that listing the topics of all these textbooks was uneconomical in the use of space in this research. I, therefore, presented the textbooks in terms of contents dealing with the conservation of forests in general and the indigenous knowledge of the Guji Oromo in particular calculated and estimated (in case of pictures) in page. In doing so, almost all contents referring to the conservation of forests were listed in tables. From the lists, contents of indigenous knowledge were identified. Finally, the total content of indigenous knowledge was identified by counting lines and estimating the coverage of pictures about indigenous knowledge, and by calculating their proportion out of each page and adding up the proportions for all textbooks in elementary school. Accordingly, the analysis seems to coincide with summative qualitative content analysis approach (Hsieh & Shannon, 2005). In my analysis, as I did find few contents of indigenous knowledge, I did not go to reliability test. On the other hand, the reliability could be judged by the readers by comparing the indigenous knowledge contents identified in the analysis with the list of the contents of conservation of forests in general presented in tables. I also incorporated the comments of the readers of this paper in my work.

The analysis was grouped into three major categories based on the nature of the subjects taught. Accordingly, in the basic primary education (grades 1-4), the content analysis was made on four subjects: environmental science (E.SC), mathematics (Math), *Afaan*

Oromoo (Af.O) and English (Eng). In general primary education (5-8), different subjects are offered. Accordingly, in grades 5-6, basic science (B.Sc), mathematics (Math), *Afaan Oromoo* (Af.O), English (Eng), civic and ethical education (Cv.ed), music (Mu), Amharic (Amh) and social studies (Ss) are taught. In grades 7-8, biology (Bio), chemistry (Chem), physics (Phy), mathematics (Math), *Afaan Oromoo* (Af.O), English (Eng), civic and ethical education (Cv,ed), social studies (So.s) and Amharic (Amh) are taught. Hence, in general primary education (grades 5-8), two categories were formed (grade 5-6 and grade 7-8). First, the analysis was done at each grade level. Then, the summation was done at three categories, that is, grades 1-4, 5-6, and 7-8, and finally in cumulative form covering grades 1-8. All subjects except Amharic and English have been taught in *Afaan Oromoo* in primary schools of Oromia except for some non-*Afaan Oromoo* speakers in towns. Hence, the analysis was done on the textbooks written in *Afaan Oromoo* except the textbooks of the two language mentioned above.

Tables were used to organize and present the analysis including subjects taught (SUB), grades (GR), total pages of the books (TP), contents dealing with conservation of forests in page (CFP), list of the contents about conservation of forests (LCCF), contents about the indigenous knowledge of the Guji Oromo on conservation of forests in page (CIKGCFP), and a list of the contents of the indigenous knowledge of Guji on conservation of forests (LCIKGCF). Hence, the categories used in the analysis seem to be based on conventional (coding categories are derived directly from the text data) and summative (counting, adding up and interpreting) content analysis approaches. I followed these approaches believing that they are appropriate for my study. Hoskins and Mariano (2004) also state that, as there is no single guideline for content analysis, each inquiry is distinctive and the results depend on the skills, insights, analytical abilities and styles of the investigator. One challenge of content analysis is the fact that it is very flexible and there is no simple right way of doing it (Elo & Kyngas, 2008: 13).

Table 4: Analysis of the Textbooks for Grade 1

No	Sub	Gr	TP	CFP	LCCF	CIKGFP	LCIKGCF
1	E.Sc	1	72	2(pp 62-66)	Planting seedlings and giving care for them	-	-
2	Math	1	115	0.25(pp 93)	The significance of *Odaa* as a hall (shade) for elders	0.25	The significance of *Odaa* as a hall (shade) for elders
3	Af.O	1	65	0.1(p 62)	A picture showing a man watering seedling	-	-
4	Eng	1	92	-	-	-	-
Total			344	2.35(0.68%)		0.25(0.07%)	

Table 4 above depicts that the contents of forest conservation were found to be about 2.35 (0.68%) pages of the total 344 pages, and the contents of indigenous knowledge were about 0.25(0.07%) pages of the total 344 pages in the textbooks for grade 1. In this, no contents of conservation of forests appeared to be found in English and the few contents of indigenous knowledge were included only in mathematics. In mathematics, only 0.25 or 25% of the contents on page 93 are about indigenous knowledge.

Table 5: Analysis of the Textbooks for Grade 2

No	Sub	Gr	TP	CFP	LCCF	CIKGFP	LCIKGCF
1	E.sc	2	123	1(pp 47-48) 0.2(pp 72) 0.2(pp 75)	Conservation of plants (transplanting and giving care for plants Planting trees(pictorial) Watering plants	- - -	- - -
2	Math	2	102	0.5(pp 39)	The number of seedlings planted	-	-
3	Af.O	2	64	3(pp 29-31)	Using trees as shades	3(pp 29-31)	Using trees as shades
4	Eng	2	121	-	-	-	-
Total			410	4.9(1.19%)		3(0.73%)	

Table 5 shows that some contents of the conservation of forests (about 1.19%) were included in all grade 2 textbooks except in English. However, some contents of indigenous knowledge of the Guji (about 0.73%) were found only in *Afaan Oromoo*.

Table 6: Analysis of the Textbooks for Grade 3

No	Sub	Gr	TP	CFP	LCCF	CIKGFP	LCIKGCF
1	E.sc	3	182	0.5(pp 48-49)	Planting trees as means of soil conservation	-	-
				2.5(pp 61-64)	Significance of conservation: the care that needs to be taken in cutting trees	0.5(pp 61-64)	The care that needs to be taken in cutting trees
				2(pp 85-87)	Watering, wedding and using supporting materials in growing seedlings	-	-
				2.5(pp147-149)	Types and distribution of forests in Oromia Accelerated destruction of forests due to population increase: reforestation	-	-
2	Math	3	211	0.1(p 140)	Planting seedlings	-	-
3	Af.O	3	178	-	-	-	-
4	Eng	3	140	0.2(p 95)	Planting trees	-	-
Total			711	7.8 (1.09 %)		0.5 (0.07%)	

As can be observed from the Table 6 above, relatively more contents of conservation of forests in general and indigenous knowledge of the Guji on forest conservation in particular are found in the environmental science.

Table 7: Analysis of the Textbooks for Grade 4

No	Sub	Gr	TP	CFP	LCCF	CIKGFP	LCIKGCF
1	E.sc	4	195	0.04(p 157)	Distribution of forests in Ethiopia	-	-
2	Math	4	273	0.04(p 212)	Grouping seedlings	-	-
3	Af.O	4	129	0.1(p 1)	Picture showing elders and youngsters conducting meeting under the shade of a tree	0.1(p 1)	Picture showing elders and youngsters conducting meeting under the shade of a tree
				0.04(pp14-15)	The relationship between mountains, forests and rain	0.04(pp 14-15	The relationship between mountains, forests and rain
				0.5(p 23)	The impact of forest fire and the need to prevent it	0.5(p23)	The impact of forest fire and the need to prevent it
				0.04(p 27)	The need to use dead wood rather than the growing one	0.04(p27)	The need to use dead wood rather than the growing one
				0.1(p 83)	The role of elders in Oromo society in advising and arbitrating people	0.1(p 83)	The role of elders in Oromo society in advising and arbitrating people
4	Eng	4	152	3(pp 78-80)	Replacing the cut trees by transplanting	-	-
Total			749	3.86(0.52%)		0.68(0.09 %)	
Grand total (grade 1-4)			2214	18.91(0.85 %)		4.43(0.2 %)	

Table 7 shows that bits of the contents of indigenous knowledge are included only in *Afaan Oromo* textbook, for grade 4.

As can be observed from Tables 4, 5, 6 and 7 above, the volume of the textbooks increases from the lower to the higher levels of basic primary education in Oromia as the total number of pages of all the textbooks is 344, 410, 711 and 749 for grade 1, 2, 3 and 4 respectively. However, the coverage of the contents on the conservation of forests has not increased correspondingly as it is 0.65%, 1.19%, 1.09% and 0.52% for grade 1, 2, 3 and 4 respectively. The total contents of conservation of forests in the textbooks of basic primary education are found to be about 19 (0.85%) pages out of the total 2214 pages. The size of the contents is relatively greater in environmental science and *Afaan Oromoo* than in other textbooks. Moreover, the contents are very limited in variety, repeatedly focusing on planting and growing trees.

The contents of the indigenous knowledge of Guji Oromo are about 0.07%, 0.73%, 0.07% and 0.09% for grade 1, 2, 3 and 4 respectively. The total coverage of indigenous knowledge contents for the grades 1-4 is found to be 4.43 (0.2 %) pages out of the total 2214 pages. This appears to be very few for areas observed in Guji where forests are dwindling at a rapid rate. The very few bits of contents of indigenous knowledge of Guji (which could also be true to the other Oromos) included in *Afaan Oromoo* mainly refer to the use of *Odaa* and other big trees as shade for elders and *Abbaa Gadaa* for conducting meetings, advising and arbitrating people. Here, it is not simply sitting under the shade of a tree but protecting the tree for that purpose that makes it indigenous knowledge of forest conservation.

According to Piaget's theory (Ornstein & Hunkins, 2004: 109), the age between 7 and 11 (on average age at which students begin school in Oromia), is concrete operations stage. During this time, learning occurs almost only if concrete objects are available or if actual past experiences can be drawn on. This age level overlaps with *Gadaa* grade of *dabballee* (during which many children could be of age 0-8) and slightly with *qarree duraa* in Guji (when many could be of age 9-16).

At *dabballee* stage, children are given great care by parents and, they are responsible to keep small animals around home. Accordingly, contents which are related to the

immediate environment, experiences and needs of the children which could be drawn from the indigenous knowledge of the Guji Oromo such as treating forest conservation for their being sources of honey, grass for cattle, wild fruits /foods, water should have been included in the textbooks. Moreover, the care that children need to give for forests like refraining themselves from setting fire into the forests (which children at this stage often do for fun or entertainment) without knowing the negative impact of such an act on foods that children like such as honey, milk, food crops and wild foods would have been useful had it been included in the textbooks. Seen from these perspectives, the textbooks of basic primary education in Oromia do not seem to reflect the indigenous knowledge of the Guji Oromo in particular and that of the Oromo people in general, on conservation of forests.

Table 8: Analysis of the Textbooks for Grade 5

No	Sub	Gr	TP	CFP	LCCF	CIKGFP	LCIKGCF
1	B.sc	5	146	0.17(p 45) 3(pp 49-51) 1(pp 52-59) 9(pp 60-68)	Planting trees to conserve water Importance of Plants The use of plants in preventing soil erosion Forests in our country	- - - -	- - - -
2	Math	5	183	-	-	-	-
3	Af.O	5	86	0.2(p 5) 0.5(pp12-13) 0.2(pp 35) 0.5(p 47)	Conservation of forests Story of an elder who planted seedlings Balance of nature An interdependence between natural resources	- 0.5(pp 12-13) - - 0.33 (pp	- Story of an elder who planted seedlings - - The story of an

				0.33(pp 85-86)	The story of an aged person planting trees	85-86)	aged person planting trees(repeated)
4	Eng	5	120	2(pp28-29) 1(p 33)	Importance of trees and the need to give care for them. When cutting, we have to replace them. Giving care for plants in the garden	- -	 -
5	Cv.ed	5	173	0.5(pp 99-100)	Importance and conservation of natural resources and cultural heritage	-	-
6	Mu	5	69	0.5(pp21-22)	The need to conserve forests	-	-
7	Amh	5	130	2(pp119-121)	The significance of conservation of forests	-	-
8	Ss	5	88	0.13(p 47) 1(pp 56-57)	Increase in number of population and clearing forests for agriculture and different purposes The uses, destruction and conservation of forests in Africa	- -	- -
Total			995	22.03(2.21%)		0.83(0.08%)	

As can be observed from Table 8, the contents of conservation of forests are found in almost all subjects for grade 5 except in mathematics. On the other hand, some contents of indigenous knowledge are included only in *Afaan Oromoo*.

Table 9: Analysis of the Textbooks for Grade 6

N	Sub	Gr	TP	CFP	LCCF	CIKGFP	LCIKGCF
1	B.sc	6	136	0.1 (pp 11,54)	Refraining from burning, clearing forests and replacing the lost forests by planting and growing seedlings	-	
2	Mat	6	192	-	-	-	-
3	Af.o	6	82	2(pp 7-8) 0.4(p 18) 0.67(p 51) 0.04(p 69)	Planting trees on mountains to check soil erosion Destruction of forests and its effects and the need for conservation The importance of trees: shade, construction, firewood, furniture, etc Trees serving as shades for animals	- - 0.67(p 51) 0.04(p 69)	- - The importance of trees: construction, shade, firewood, furniture, etc. Trees serving as shades for animals
4	Eng	6	160	1.5 (pp 107-108)	The traditional beliefs of the people that protected the forest have been forgotten by the new generation	1.5(pp 107-108)	The traditional beliefs of the people that helped in the protection of forests have been forgotten by the new generation

5	Cv.e	6	162	-	-	-	-
6	Mu	6	78	0.04(p 16) 0.5(p 39)	The beauty of *Iluu Abbaa Booraa* for its large forest cover which could serve as a shade for us Song about the advantages of forests	0.04(p 16) 0.5(p 39)	The beauty of *Iluu Abbaa Booraa* for its large forest cover which could serve as a shade for us Song about the advantages of forests
7	Amh	6	72	1(P 30) 2(pp 60-61)	The uses of forests: shelter for animals, fuel, construction, medicine, attract rain, and protect soil from erosion. The destruction of forests as a cause for soil erosion	1(p 30) -	The uses of forests: shelter for animals, fuel, construction, medicine, attract rain, and protect soil from erosion. -
8	Ss	6	104	0.2(pp 26) 0.07(pp 29)	The negative effects of the destruction of forests and its conservation The uses of forests as sources of food and medicine	- 0.07(pp 29)	- The uses of forests as sources of food and medicine
Total			986	8.52(0.86 %)		3.82(0.39%)	
Grand total(grade 5-6)			1981	30.55(1.54 %)		4.65(0.23%)	

As can be observed from the Tables 8 and 9, the total contents about the conservation of forests in the textbooks for grades 5-6 are only about 30.5 (1.54%) pages out of the total 1981 pages. In comparison with the basic primary education, the inclusion of such contents is slightly better in grades 5&6. The contents are included in almost all subjects except in mathematics. Some are included even in music. They are relatively well included in basic science and *Afaan Oromoo* as it is true for Environmental science and *Afaan Oromoo* at the basic primary education level. However, as in the case of the basic primary education, similar contents are included in different subjects without giving emphasis to the indigenous knowledge of the Guji Oromo, which approximately accounted for only about 4.65 pages or 0.23% of the contents of all the subjects at this level.

Comparatively, subjects of grade 6 textbooks have better inclusion of indigenous knowledge contents (0.39%) than grade 5 textbooks (0.08%). In general, the contents of indigenous knowledge in the textbooks of grades 5& 6 appear to be negligible (0.23%) and no significant improvement has been observed from basic primary education, which includes only about 0.2% of such contents on average.

In *Gadaa,* the stage when many of the children are at age 12 and 13 is known as *qarree* in Guji. During this time, youngsters tend cattle at their full capacity and participate in ritual ceremonies. When they go with the cattle, they could set fire into the forests. The youngsters need to be familiarized with the proper use of fire. On the other hand, nowadays, the participation of students in traditional *Gadaa* activities has become less. This could be one of the reasons why students are not as such familiar with the indigenous knowledge of their people as was found out in my interview with students. Above all, the very less inclusion of indigenous knowledge contents on the conservation of forests in the school subjects seems to have contributed a lot to this problem: ignorance of indigenous knowledge by youngsters of the indigenous community, the Guji Oromo.

According to cognitive theory of Piaget (Ornstein & Hunkins, 2004: 109), students of grade 5 and 6 are on average at formal operations stage, characterized by the development of formal and abstract operations. Therefore, students can be introduced to the belief system of the Guji society, that the destruction of forests brings punishment from God. Indeed, what worse punishment is there than drought, famine, the death of cattle, failure in agricultural production? If these effects of the destruction of forests are presented to the students by associating them with the belief system of the people, they may bring change on the students. The Guji have a good belief system in which they consider the cutting of growing trees as killing children and, particularly, the cutting of big trees as killing elders. Instead, they prefer the use of branches of trees and dead wood for different purposes. This and other belief systems of the society which could contribute to conservation of forests are definitely useful had they been included in the textbooks.

Table 10: Analysis of the Textbooks for Grade 7

No	Sub	Gr	TP	CFP	LCCF	CIKGFP	LCIKGCF
1	Bio	7	160	-	-	-	-
2	Chm	7	124	0.5(p 104)	How to halt forest fire by clearing the land and making buffer zone	0.5(p 104)	How to halt forest fire by clearing the land and making buffer zone
3	Phy	7	122	-	-	-	-
4	Math	7	165	-	-	-	-
5	Af.O	7	108	1(p 31) 0.33(p 41)	Population growth in relation to the provision of facilities: family planning Effects of forest destruction: shortage	- 0.33 (p 41)	- Effects of forest destruction: shortage of

				1(p 93) 3(P 98-200)	of rainfall, the loss of shade for cattle *Odaa*: hall for the Oromo, symbol of development, unity, the 'palace' of *Abbaa Gadaa* Importance of forests and the effects of their destruction	1(p 93) -	rainfall, the loss of shade for cattle *Odaa*: hall of the Oromo, symbol of development, unity, the 'palace' of *Abbaa Gadaa* -
6	Eng	7	165	-	-	-	-
7	Cv.ed	7	178	-	-	-	-
8	So.s	7	110	1(p 20)	The destruction of forests: agriculture, overgrazing, wood for fuel, construction and other purposes. Educating people on the sustainable use of forests. The how is not mentioned	-	-
9	Amh	7	126	2(pp 31;33) 1(p 87)	The advice of forests: the significance of forests and the negative effects of destructing them Family planning	- -	- -
Total			1258	9.83(0.78%)		1.83(0.15%)	

Table 10 shows that the coverage/inclusion of contents of conservation of forests is relatively higher in *Afaan Oromoo,* Amharic and social studies textbooks for grade 7. However, some contents of indigenous knowledge are included only in *Afaan Oromoo* and chemistry.

Table 11: Analysis of the Textbooks for Grade 8

No	Sub	Gr	TP	CFP	LCCF	CIKGFP	LCIK GCF
1	Bio	8	152	1.5(pp 112-113)	Effects of clearing forests on soil erosion: reforestation to minimize soil erosion	-	-
2	Chm	8	144	-	-	-	-
3	Phy	8	102	-	-	-	-
4	Math	8	158	-	-	-	-
5	Af.O	8	107	-	-	-	-
6	Eng	8	183	2(pp 48-49)	Deforestation	-	-
7	Cv.ed	8	186	1pp 100-101)	Ethiopia was rich in natural resources but now greatly destructed	-	-
8	So.s	8	128	0.75(pp 30-31)	Air pollution, drought and vegetation; the need not to clear and/or burn forests	-	-
9	Amh	8	119	-	-	-	-
Total			1279	5.25(0.41%)		-	
Grand total (grades 7-8)			2537	14.08(0.55%)		1.83(0.07%)	
Grand total (grade 1-8)			6732	64.54(0.96%)		10.91(0.16%)	

As can be observed from Tables 10 and 11, the contents of conservation of forests approximately account for 14(0.55%) pages of the total contents of the textbooks for grades 7 and 8.

Over all, the contents of indigenous knowledge of the Guji Oromo are found to be minimal (0.07%) of all contents of the grade 7 and 8. What is more, these limited contents are predominantly included in the textbooks of *Afaan Oromoo* and chemistry. From the criticality of environmental problems associated with the destruction of forests like increase in temperature, shortage and erratic rainfall, drought and famine, death of cattle and failure in crop production, to mention some of the many environmental crises in the Guji zone, the indigenous knowledge contents included in the textbooks seem to be highly limited. When we compare the contents in various textbooks, they are relatively well included in the textbooks of *Afaan Oromoo*.

Students in these grades are between 15 and 16 years of age on average. These students are involved in tending cattle and in ritual practices in *Gadaa* System. Practically, they are also involved in the support of their parents through agricultural and other activities. Cognitively, there are almost no limitations on what they can learn as they can deal with both abstract and concrete learning (Ornstein & Hunkins, 2004: 109). Accordingly, indigenous knowledge contents indicated by the elders and *Abbaa Gadaa* of Guji like the use of branches and dead trees rather than the growing trees, the systematic use of fire, the selective leaving of trees in agricultural fields, the rotational use of grazing land and water, the settlement of people outside forests, the maintenance of forests as sources of forest related resources, the respect given to forests around ritual areas and the care given to growing and big trees seem appropriate to have been included in the school curriculum.

In general, the contents of conservation of forests seem to be less in the subjects taught in primary schools of Oromia (1-8). They are found to be around 64.54(0.96%) pages of the 6732 pages in the textbooks. On top of this, the contents are fragmented and poorly integrated. Accordingly, similar fragmented contents about the destruction of forests and

its consequences and the need to plant and grow trees are included in relation to the forest and related resources like soil, water, wild life and air. Again, these contents are mainly found in environmental science/basic science/biology, *Afaan Oromoo* and to some extent in social studies. I think it would be more appropriate and plausible if related topics are presented in an integrated way so as to foster students' understanding of the interdependence of these resources. In such a way, unnecessary repetition across subjects horizontally and at different grade levels could be minimized and more space could be created for the inclusion of valuable indigenous knowledge on conservation of forests in the curriculum.

On the other hand, the contents on conservation of forests included in the textbooks seem to deal less with sustainable use of existing forests in traditional way like the use of dead trees and branches instead of the growing ones, the use of buffer zone and water in using fire, the rotational use of grazing lands (dry lands for summer, rainy seasons and forests areas for winter dry seasons), and the systematic use of water (surface water for summer and wells for winter seasons). The indigenous knowledge of the Guji could help a lot in this aspect. However, the contents of the indigenous knowledge of the Guji on forest conservation are only about 10.91(0.16%) pages of the total contents of all textbooks for primary education in Oromia. These contents appear highly negligible seen in relation to their relevance to the rapid destruction of forests going on in Guji. These contents are found in the form of fragmented phrases, statements, paragraphs; they are rarely presented in an integrated and holistic approach.

The rare contents of indigenous knowledge in the textbooks are relatively better in *Afaan Oromoo,* the language of the Oromo and the official language and medium of instruction in primary schools (since 1991) and teachers colleges (since 1996) in Oromia. The preparation of the textbooks of *Afaan Oromoo* by curriculum experts, who are indigenous, might have helped them to get the opportunity to include their indigenous knowledge in the narrow space available as the curriculum is determined centrally at national level. Even some of the teachers (*Guyyoo* & Yohannis, 18 November 2011) and curriculum developers (*Dhugaasaa,* 17 July 2011; *Abdii,* 15 September 2011) indicated

regretfully that the first textbooks which were prepared in *Afaan Oromoo* around 1991 were more inclusive of indigenous knowledge of Oromo. Unfortunately, these textbooks are not on the market now and are not functioning in schools. They were totally replaced by the new books. As a result, the whereabouts of these books is not currently known at all. On my part, I could not get a single copy of the books printed in 1991.

In general, the existing textbooks which were analyzed in this study are not inclusive of the belief system of Guji, which considers natural resources as *woyyuu*, that is, they are sacred and need to be respected. The special attention given to the growing and big trees and resources around ritual areas is missing from the texts. The care given to forests as sources of the livelihoods of the society and the traditional sustainable use of forests developed over a long period of time are rarely incorporated in the textbooks and students could not get access to them in their schooling.

Surprisingly, even *Gadaa* System, which is the abode of the political, economic and social life of the Oromo people, is not properly treated in the textbooks under investigation. There is only about half a page of a textbook about *Gadaa* System in social studies for grade seven (pages 40-41) and a page in *Afaan Oromoo* for grade eight (page 38). In dealing with democracy particularly, in civic and ethical education, I expected more contents of the *Gadaa* System of Oromo, which has been appreciated by writers like Asmarom (1973) and Hinnant (1977). Surprisingly, I could not get a single content in the civic and ethical education textbooks. In fact, as could be observed from the textbooks analyzed, the textbooks for civic and ethical education were prepared by Ministry of Education centrally and were translated into *Afaan Oromoo*. In my opinion, however, the *Gadaa* System could be a foundation for the teaching of democracy at national as well as international level. This is an indication of how much the curriculum of primary schools of Oromia Regional State does not reflect the indigenous knowledge of the society.

Hence, it is possible to conclude that the indigenous knowledge of the Guji Oromo which has helped the society to maintain forests for long is hardly found in the primary school textbooks of Oromia.

Some of those who have prepared and who are preparing the textbooks have informed me that the contents are centrally decided and the writers of the books are expected to write only on the contents already decided *(Mootii,* 22 June 2011; *Dhugaasaa,* 17 July 2011; *Abdii,* 15 September 2011). Accordingly, there is little room to include issues other than those which are already decided on. The elders and *Abbaa Gadaa* of the Guji also explained that nobody has asked them to share their experiences during the preparation of school curriculum (*Culuqqee, Jiloo, Barii, Dullacha, & Batii*, November 2010). They said that although sometimes journalists and researchers ask them about their history, they have no information of the inclusion of their history in the curriculum. The *Abbaa Gadaa* also indicated that some schools in the zone have invited him to share his experiences to the school communities. Apart from these, he said that, they had no participation in the preparation of textbooks for schools. These seem to contribute to the very few contents of indigenous knowledge of the Guji Oromo/Oromo in general in primary school textbooks of Oromia. However, the destruction of forest and its consequences such as shortage and erratic rainfall, degradation of soil fertility, drought, famine, death of cattle in some parts of the zone, decline in the productivity of crop production, the less feasibility for rearing animals, compared to the previous times, due to shortage of rainfall and grazing land, are some of the factors that have become challenging to people in the Guji Zone. Unless measures are taken on the conservation of forests, all these intricate problems may continue to endanger the life of the people.

Nonetheless, some of the contents like the destruction of forests and the need for replacing them are repeatedly included in the primary school textbooks of Oromia. However, my informants have told me that the Guji had no tradition of planting trees before (when the forests were abundant). On the other hand, the practice of planting trees on graves has been in existence from the beginning. With decline in the forest cover, the people began to plant trees like bamboo which is used for different construction purposes

like houses, fences, kraals and various other trees for fences (Jiloo & *Barii,* December, 2011). Now, where forests are deteriorating at a rapid rate, it is necessary to capitalize on the existing practices of the society to replace the lost forests by planting and growing trees. The modern practices of forestry in which the aged trees are used for different purposes and replaced by the young ones and the modern techniques of family planning to minimize population growth are lacking in the indigenous knowledge of Guji. In this aspect, the modern practice of growing seedlings at nursery sites and replacing the lost forest and the scientific methods of birth control could help to deal with the problems. These are some of valuable components of the school curriculum that need to reach, and be used by, the society.

I think polygamy which is common in Guji and which has a negative impact on the life of family members, particularly when the number of children is too large to bring up with the family resources and when there is conflict between/among the wives, has been treated neither in the curriculum nor in indigenous knowledge. Yet, such a practice may be treated in modern religions as well as at higher education level in some courses like population courses. However, it appears good if it is offered to youngsters in grades 7 and 8 and those out of school who are preparing themselves for future family life.

Therefore, it is necessary to integrate valuable aspects of indigenous, modern science and religious knowledge to produce all rounded educated people. That is why the integration of indigenous knowledge and modern scientific knowledge is recommended by many researchers in dealing with present day problems (Le Breton, 1993; Adidepe, 1994; Barnhardt & Kawagley, 2005; Kitessa, 2007; Banda, 2008).

Primary education is the threshold for the formation of basic behaviors and predispositions which guide a person's life. A person who is ill-educated and formed wrongly at this level cannot be easily reformed. As a result, children's education which greatly depends on the nature of the curriculum requires great care. In this case, the children of Guji in particular and of the Oromo in general hardly get the indigenous knowledge of their fathers and forefathers in the curriculum. This could make the

children give less value to, and degrade, the culture of their society and uphold only what they get from the curriculum as what is in the society is not made to help them in their schooling and their future career life. This could be one of the reasons why students pay less attention to what elders tell them. Again, this is why the elders, (for instance *Jiloo*, 15 November 2010; *Barii*, 21 November 2010 & *Culuqqee*, 20 November 2010), insisted that the best possible way by which their indigenous knowledge will continue to exist and function is by including it in curriculum and teaching it to students in schools.

Students of Kucho Elementary School (*Badhaatu, Roobaa, Guyyatu* & Ishetu, 18 November 2011) also expressed their enthusiasm to learn if indigenous knowledge of Guji on forest conservation is included in the textbooks. Teachers of the same school teaching in the classes from which the sample students were selected (*Guyyoo, Gumii,* Yohannis *& Waaree,* 18 November 2011) recommended the inclusion of the valuable indigenous knowledge of the society not only in the area of conservation but also in other areas in the curriculum. For them, this could be done by involving *Abbaa Gadaa*/elders and teachers in the preparation of the curriculum. They also expressed their positive feelings of teaching curriculum inclusive of the indigenous knowledge of the society.

In general, indigenous knowledge of Guji on forest conservation, which has been developed by the society in a holistic way including the spiritual (beliefs) and material aspects of life, seems to contribute to the conservation of forests if included in the curriculum and taught properly.

5.5.1.2 Analysis of Elementary School Textbooks in Relation to the Models of Curriculum Development for Indigenous Knowledge

The proponents of generative curriculum model (Ball & Pence, 2001), cultural iceberg (Barnhardt & Kawagley, 2005), Adidepe's systematic hybridization strategy (Adidepe, 2004), dialectical modernization (Banda, 2008) and indigenous literacy (Semali, 1999), propose the integration/coordination of indigenous or traditional knowledge with the

modern scientific knowledge in our attempt to be effective in our education, and hence, to lead a better life in this world.

In generative curriculum model, curriculum development is carried out in an integrative way through consensus, without privileging one paradigm over the other. It involves the collection of indigenous stories, conducting research and exploring the tradition and belief of the people, documenting and incorporating them in the curriculum (Schafer, et al, 2004). The cultural iceberg model helps to identify the surface and deep culture of the society that contributes to our contemporary understanding of resource management though the criteria of classifying the culture into deep and surface culture is not clear.

Similar to generative model of curriculum development, the cultural iceberg model of curriculum development involves native elders, curriculum developers, teachers, pupils, researchers, native community organizers, school district board members, policy makers at various levels and parents in searching deep into the cultural iceberg and negotiating a culturally based or indigenously informed curriculum (Banda, 2008). In relation to this, Adidepe (2004) also recommends the integration or coordination of indigenous knowledge and modern technology to be effective in food production. The Lawton model too gives emphasis to the inclusion of the culture of the society in the curriculum (Derebssa et al, 1999: 54). Moreover, the proponents of communication model suggest the need to have good communication between indigenous knowledge holders and modern curriculum developers so as to develop integrated curriculum.

In the entire attempt made to integrate indigenous knowledge with modern scientific education, it appears that indigenous knowledge holders play a significant role as indigenous knowledge is mainly found in the minds of the elders, not in a documented form. However, elders and *Abbaa Gadaa* indicated that they have not been consulted or taken part in the preparation of curriculum. The *Abbaa Gadaa* further articulated that except sharing their experiences to students and teachers in some schools on *Gadaa* System and giving information to some researchers and people from culture and tourism bureau, they did not participate in the preparation of books.

The assumption held among both the elites and ordinary people, that the illiterate people could not contribute to the development of modern school curriculum has perhaps contributed to the rare involvement of indigenous knowledge holders in curriculum development. Curriculum developers have also indicated that the flow chart for curriculum is centrally determined at federal level and, hence, there is less room for the inclusion of indigenous knowledge at local level in the curriculum (*Mootii*, 22 June 2011; *Dhugaasaa*, 17 July 2011; *Abdii*, 15 September 2011). Even recently, course writing responsibility has been given to private organizations (*Abdii*, 15 June 2011), a situation which may further narrow the opportunity of including indigenous knowledge in curriculum.

In general, the interview made with elders and curriculum developers and the inclusion of very few contents of indigenous knowledge of the *Gujii* Oromo in the textbooks as identified in the content analysis of the textbooks for elementary school, are good indicators of how the models of the integration/inclusion of indigenous knowledge in school curriculum have not been properly applied in the development of textbooks for elementary schools in Oromia.

5.5.2 Participatory Forest Management

As stated in the Regulation No. 89/2007(*Mana Marii Bulchiinsa Mootummaa Naannoo Oromiyaa* (1999/2007: 1), the Borena-Guji Forest and Wildlife Enterprise is required to attain effective management and sustainable utilization of state forest resources found in its concession area, the forest land entrusted to the enterprise. It is a state enterprise which depends on income it generates from forest resources (BBBG, 2004). It has 12 branches in the 12 districts of the two zones: *Gujii* and *Booranaa,* including *Adoolaa Reeddee, Sorraa, Shaakkisoo, Booree, Daamaa, Yaaballoo, Liiban, Sabbaa-Boruu, Areeroo and Bulee-Horaa*. Except *Yaaballoo*, *Areeroo* and *Bulee-Horaa,* the rest are found in Guji Zone. The regulation also states that "the Forest Enterprise is required to promote the participation of the local communities living around the forest in forest protection and development activities, and in sharing the benefits derived from forest

products." Moreover, the regulation stipulates that, one of the powers and duties of the enterprise is to "contribute to improvement of local community's livelihoods through creation of job opportunities and rational utilization of non-timber forest products such as eco-tourism, agriculture, forest coffee, medicinal herbs, etc"(Regulation No.89/2007: 5).

In interviews made with the local community at *Zambaabaa, Anfaraaraa, Kuchoo, Biluu and Shaakkisoo* forests, however, no good trends of the application of participatory forest management have been found. I found *Kuchoo* forest, guarded by three individuals. At *Anfaraaraa,* there was a conflict between the local community and the Borena-Guji Forest and Wildlife Enterprise in which the community members were asking why the enterprise does not organize forest user groups as in the case of other zones of Oromia such as *Adaabbaa-Dodolaa* in West *Arsii and Baalee* (Gelagile, Jego & Wariso, 19 November 2010). Whether the appeal is really for the sake of conserving the forest or to gain the ownership of the forestland is a controversial issue. The Borena-Guji Forest and wildlife Enterprise blames the inhabitants of the area for destroying the forest by calling their friends from distant area to settle in the forest.

At all areas observed, it does not seem that the local community has free access to the protected forest resources. The community members at *Anfaraaraa* argue that they were made to lose their coffee and access to the forest by the police force. In reality, the cultivation of coffee and inset has expanded in the protected forests by clearing the undergrowths. The community at *Zambaabaa* reported that the benefit they get is by serving as laborers in cutting the trees that the forest enterprise sells. Similar ideas were expressed by interviewees at *Kuchoo* forest. The failure to apply participatory forest management properly and share forest products and benefits with the local community may aggravate the destruction of the forests.

On the other hand, *Bariisoo,* the Deputy Head of the Borena-Guji Forest and Wildlife Enterprise (16 November 2010), mentioned that the enterprise is working on how the surrounding community could benefit from the protected forests in their locality. He further said that the local people could do bee-keeping, collect coffee; get pasture and

water from the forests. The enterprise has also started to provide school facilities like chairs as in the case in *Shaakkisoo*. However, some of the interviewees at *Zambaabaa* and *Kuchoo* revealed that using forest resources was prohibited and would lead to punishment. As observed at *Anfaraaraa* forest, collecting coffee from the margin of forest is common. Honey production is also not strictly forbidden (interview with community members at *Anfaraaraa, Shaakkisoo and Zambaabaa*). Concerning development activities that could benefit the surrounding community, the BBBG's report of 2003 is presented below.

Table 12: Development Activities by BBBG for the Surrounding Community

No	Activities	Measurement	Plan	Implementation	%
1	Establishing forest users groups	Number (No)	8	13	162.50
2	Developing streams	No	4	-	-
3	Developing pipe water for group use	No	1	-	-
4	Distributing tree seeds	No	364	433.25	119.02
5	Distributing seedlings	No	81,977	39,629	48.34
6	Providing wood products	No	120	120.543	100.45
7	Having out growers	No	8	14	175

Source: BBBG (2003 E.C)

The percentages greater than 100 in Table 12 seem to show greater implementation than the planned. It can be observed from the report of BBBG for the year 2003/2010 that no services were offered to the surrounding community in developing streams and making pipe water even though the tasks had been planned. What is worse is that there was no plan for the provision of school facilities in the year 2003/2010 which could be done with the products of the forest enterprise. Hence, the report seems to confirm what the surrounding community blames the enterprise for: failure to provide social facilities for the local community. The establishment of forest user groups and the distribution of seeds and seedlings are the strong sides of the enterprise even though it appears to be

small in number seen in relation to the twelve districts in which the enterprise operates. In my observation of forests in November-December 2010, I have not, unfortunately, come across forest user groups operating, probably due to the time gap between my field work and their activities in the forest or lack of proper functioning. However, the manager indicated that, even they are in the process of establishing forest user groups who could get non-timber products like oil harvested from the leaves of Eucalyptus tree and that this scheme is under experiment (*Bariisoo*, 20 December 2011).

In an attempt to recover the degraded forests, the enterprise reported that it has reproduced seedlings in a number of nursery sites in the zones. The following table shows what has been done in the last three years.

Table 13: Seedlings Reproduced by BBBG (2001-2003 E.C)

No	**Types of Seedlings**	**Measurement**	**Year**			**Total**
			2001	2002	2003	
1	Hindheessa (*Cupress histamica)*	Number(No)	88,660	251,264	452,290	792,214
2	Eucalyptus tree(baargamoo)	No	110,959	630,658	540,628	1,282,245
3	*Graavilea robusta*	No	105,565	150,326	198,117	454,008
4	*Juniperus abyssinica*	No	2310	33,100	17,201	52,611
5	*Waddeessa (Cordia abyssinica),*	No	8000	39,560	10,000	57,560
6	*Heexoo*	No	-	36,701	-	36,701
7	Podocarpus *(Birbirsa*)	No	3250	3500	6,320	13,070
8	*Muduraa*	No	-	38,409	18,551	56,960
9	*Gudubaa*	No	-	-	1,440	1,440
Total			318,744	1,183,518	1,244,547	2,746,809

Source: BBBG (2004 E.C)

From Table 13, it is possible to understand that indigenous trees are given less attention as are indigenous knowledge contents on conservation of forests in elementary school curriculum of Oromia. Accordingly, small number of seedlings was prepared for *Gudubaa (Polyscias fulva), Birbirsa (Podocarpus falcatus), Heexoo (Hagenia abyssnica)* and *Gaattiraa (Juniperus abyssinica).* Worse than this, many of the indigenous trees like *Odaa (Ficus sycomorus), Baddeessaa* (Syzngium gaertn), *Bakkanniisa (Corton macrostachyus), Qilxa (Ficus vasta),* and *Gatamee (Schefflera abyssinica)* were not included in the nursery sites. My observation of *Anfaraaraa* nursery site and discussion with the site coordinator, *Alakee* (27 December 2011) also enabled me to identify the species of trees under the nursery site: *Gaattiraa Faranjii (Cupress histumica), Graavilea,* and some *Birbirsa (Podocarpus falcatus).* But I have not clearly identified why less attention has been given to the indigenous trees. One of my informants in the enterprise, however, indicated that "indigenous trees like *Birbirsa (Podocarpus falcatus)* take a long time for production taking the example of the *Birbirsa* plantation that the enterprise has at *Waadaraa* which is still at young stage after many years of planting" (*Nageessoo,* 28 December 2010). Perhaps this could be one of the reasons for giving less attention to the indigenous trees.

In my observation of many parts of Guji like *Booree,* forests of *Zambaabaa, Kuchoo, Biluu,* and the neighboring zones of Sidama and Gedeo, I have found that exotic trees like Eucalyptus tree and *Gaatiraa Faranjii* (*Cupress histamica)* are quickly replacing the indigenous trees. This could be attributed to the immediate economic values of the exotic trees for construction, firewood, and wood processing industries. I think the long lasting values of the indigenous trees in the form of maintaining soil fertility, and moderate temperature, serving as shades for human beings and animals and, above all, their adaptability to the geographic and climatic conditions of the areas seems to have been overlooked.

Regarding the enterprise's provision of employment opportunity, it was reported that about 122 permanent workers, 156 contractual workers and 286 daily laborers have been hired to work in different sites under the enterprise in the two zones of *Gujii* and

Booranaa (BBBG, 2004). The daily laborers I contacted in different sites also informed me that one of the major benefits from the protected forests was the money that they get serving as laborers in the forests by cutting trees, weeding, growing seedlings and making ways in the forests. The legitimate question we can raise here is "are these benefits enough for people who had been traditionally using these forests for different purposes and were later removed from their forests particularly from the protected forests?"

The Borena-Guji Forest and Wildlife Enterprise is getting income from the sale of electric poles and wood for sawmills, construction, and firewood. The enterprise reported that, it has contributed about 1,658,488 birr in a year to the districts and towns from where forest products were produced (BBBG, 2004). As stated earlier, however, the benefit that the community around the forest has been getting from the forests appears to be low.

In December 2011, I came across an awareness-raising campaign on conservation of forest and soil which includes making terraces and planting trees in Guji. The awareness-raising training was given by Agricultural Development Agents (DAs) who were given training by the Borena-Guji Forest and Wildlife Enterprise workers and experts in the office of agriculture. The slogan on the banner posted in *Adoolaa* Town, where the head office of the Borena-Guji Forest and Wildlife Enterprise found, is an indication of the attention given to the issue. One of the slogans on the banner during the conference some weeks before I went there reads, "Forest is life."

My assistant data collectors who had participated on the meeting at *Ganda Biluu or Kebele* for two days identified how the meetings were carried out by DAs with the coordination of the chairman of the *ganda* with no participation of A*bbaa Gadaa.* This further reveals the less attention given to the indigenous knowledge of the people.

Even though the Borena-Guji Forest and Wildlife Enterprise has been doing the demarcation of forestlands in which it has demarcated about 60, 345 hectares and

included in protected forests (BBBG, 2004), my informants indicated that forest destruction has not yet stopped. The youngsters in *Ganda Biluu*, some of which had completed secondary school and were not employed, tend to be pessimistic about the situation of the forests in their areas and they threaten to react negatively:

> *Our land has been 'grabbed' by outsiders and we have no land. While all these are done to our land, we will not sit idle being landless. We will destruct the forest, as newcomers are doing, to get agricultural land for ourselves. Though the DAs are teaching us to plant trees, on whose and which land are we going to plant the trees? (Tamiru & Guyyoo, 25 December 2011).*

Now in a situation where the surrounding community is not getting appropriate benefit from the protected forests, where competition on forestlands to convert them into agricultural lands is fierce, discontents of the indigenous people with the deeds of the newcomers are bitter and where the continuous influx of immigrants to the zone is continued, the presence or the proper functioning of participatory forest management itself is questionable. The Manager of Borena-Guji Forest and Wildlife Enterprise, however, stated, "We are attempting to apply it with the help of NGOs (SOS-Sahel and FARM Africa)" (*Bariisoo*, 20 December 2011).

In their analysis of the participatory forest management practices and challenges in Ethiopia including Y*aaballoo* and *Areeroo* in Borena Zone and *Liiban* in Guji Zone, Mulugeta and Melaku, (2008: vii) found out that participatory forest management appears to be promising in that there has been better participation of the community and better conservation of forests. They, however, asserted that, among other factors, high illiteracy and innumeracy rate among the community has delayed the progress of the participatory forest management.

A later study by Aklilu (2011: 20) shows that, participatory forest management in these zones was organized based on the traditional community institution in which all community members around the forest become members of forest management group concomitant with the traditional communal ownership of resources in *Gadaa* System, a

unique experience in Ethiopia. In relation to this, Negessa (2011: 36-40) states that the current forest management strategy known as participatory forest management is an old fashion as there are customary institutions at household, village, phratry and *Gadaa* levels for conservation of forests and enforcement of *Gadaa* laws on forest destructors in Guji.

After the establishment of participatory forest management, Aklilu (2011: 20) reported that fire incidence has significantly reduced, number of naturally regenerated juniper seedlings has increased, good grass cover has been observed, seasonal springs have reappeared and forest management group ownership feelings have increased. The major economic benefits for the management groups are grazing and ploughing in the forest, utilization of wood for various purposes and to some extent, sale of firewood and honey collection. Planting trees including fodder trees around homesteads and saving and credit activities by some groups were among the cited successful livelihood interventions. Enhancing Pastoral, Environmental and Livelihood Project (EPELP) has been focusing more on strengthening forest cooperatives on bee keeping as one income source (Aklilu, 2011: 22).

The forest management policy stipulates rights and obligations of both the forest management groups and the forest enterprise. However, some of the rights of forest management groups are not respected. For instance, forest products have been extracted from participatory forest management sites by the local authorities without proper consultation of forest management groups. The rights given for forest management groups to use forest products for house construction and other purposes, except for firewood, have been banned. Peasant association leaders who are not part of traditional institution, *Gadaa* System, were at the center of decision making for the use of resources in the forest (Aklilu, 2011: 23). In *Liiban, Mankuubsa* forest, forestland under the management groups has been allocated for conversion into agricultural plot by *kebele* and *woreda* officials. *Kebele* leaders are assuming the responsibility of administering the forest under their territory and, consequently, the performance of traditional institution has been reduced (Aklilu, 2011: 25).

After the phase-out of the support by FARM Africa/SOS Sael for the participatory forest management around 2007, greater reduction in the role of traditional institution, more violation of the rights of forest management groups and the decline in forest cover were observed (Aklilu, 2011). In spite of these, *Bariisoo* (16 November 2010), the enterprise head, stated that "the Borena-Guji Forest Enterprise has the intention to go forward with participatory forest management." With this intricate problems observed in formerly established participatory forest management, the plan to expand it to other areas of Guji requires to correct the weaknesses observed by considering the experiences of *Liiban* from the nearby in Guji as well as better functioning centers. In general, it appears that despite some of the problems, the Borena-Guji Forest and Wildlife Enterprise is in the process of demarcating forestlands and applying participatory forest management. However, it could be said that participatory forest management in which both the government and the local community work together and become beneficiaries from the forest resources is still at its early stage in Guji.

5.6 Discussion

In this research, the Guji Zone appears to be relatively greener and richer in forest resources in comparison with the northern, central, eastern and even the neighboring (Sidama) parts of Ethiopia. However, there is no reliable data concerning forest coverage in Guji. The Guji zone has a total area of 18,577.05 km² (Guji Zone Land and Environment Protection Office, 2012). The partial data referring to state forests obtained from the Borena-Guji Forest and Wildlife Enterprise (OFWEBGBO, 2002/2010) shows that there are 171, 483.1 hectares of state forest in the zone. The report by the enterprise (BBBG, 2004) also reveals the demarcation and inclusion of more (60,345 hectares) forests in protected state forests. The Guji Zone Land and Environment Protection Office (2012) estimated that forests and bushes constitute 1,167,145 hectares (32.92%) of the total area of the zone. Moreover, data by Oromia Bureau of Finance and Economic Development (2011) indicate that some of the middle and high altitude areas have good forest cover. For instance, forestlands account for 44.51%, 42.35% and 18.72% of the total area of *Uraagaa, Booree* and *Adoolaa Reeddee* districts respectively. In my field

work, I have also observed large natural forests out of the protected state forests in the areas. The demarcation of forests has been going on and the exact forest area has not yet been known. In relation to this, Mulugeta (2008: 5) discloses that, because of the unreliability of forest statistics in Ethiopia, there is little clarity in forest data and it is creating confusion for those involved in the sector. Anyhow, from the available data and my observation, it appears that the Guji Zone has a large forest cover.

The presence of relatively better forest cover in Guji seems to be associated with the indigenous knowledge of the society on conservation of forests which has been embedded in *Gadaa* System, and has passed through protracted challenges. Unlike the other Oromo groups such as the *Maccaa* of the *Gibee* states, the *Leeqa Naqamtee* in the west and the *Raayyaa* and *Azaboo* of the north, who were transformed from *Gadaa* administration to monarchial rule (*mootii) (Gadaa*, 1988), the Guji oral tradition shows that the Guji were transformed from matriarchal to *mootii* rule and then to *Gadaa* System testing the negative impacts of the former two systems. The *Gadaa* administration has stabilized the disappointment and chaos created among the people under matriarchal (*haayyoo*'s) and *mootii* rules (Dhadacha, 2006).

In *Gadaa*, natural resources like forests/ trees, grasses and waters are considered to be sacred and are not utilized carelessly. Accordingly, the belief system of the society seems to have contributed to the conservation of forests in Guji. The Guji's understandings of the uses of forests in rearing of animals and production of crops appear to have played a significant role in conservation of forests. Based on their understandings of the uses of forests and their belief system, the Guji have developed customary laws (*seera*) and related norms (*ceera*, *safuu*) that have helped in the conservation of forests, grasses and waters.

The big challenge, however, came to *Gadaa* administration with the conquest of Guji by Menelik in 1897 (Taddesse, 1988; Dhadacha, 2006; Jemjem & Dhadacha, 2011). The conquest of Oromia including Guji has brought about the weakening of *Gadaa* System and its laws of resource conservation. Moreover, the drifting apart of the Oromo and their

interaction with other non-Oromo groups between the sixteenth and nineteenth centuries has weakened the role of *Gadaa* System in their social life (Asmarom, 1973). But the drifting of Oromo does not seem to work for the Guji who have stayed on their land. Therefore, the weakening of *Gadaa* System and the indigenous knowledge of Guji are more probably explained by the conquest of Guji. Despite the challenges, the Guji's prior experiences of the *haayyoo* and *mootii* rules and preferences of *Gadaa* administration and the incompatibility of suppressive rules of the Ethiopian regimes with *Gadaa*'s egalitarian democratic administration appear to have contributed to the maintenance of *Gadaa* even under conditions of insurmountable hurdles. Under the subsequent Ethiopian rulers (Hailesilassie and Mengistu), *Gadaa* has continued to function obscurely whereby its ceremonies were often carried out in the forests where and when the government sniffers could not notice it (Jemjem & Dhadacha, 2011: 403). The Guji elders argue that the Guji's dedication and sacrifice to maintain their culture has helped them to retain the Gadaa System despite its weakening and extinction in many parts of Oromia.

The bad name often thrown on Guji by some people in the central and northern parts of Ethiopia that they are warriors and cruel, might have emanated from the Guji's resistance to defend their interest, identity and culture. In relation to this, Taddesse (2004) identifies how there were continuous conflicts and wars between the Guji and their neighbors: Arsi, Borana, Sidama and, to a lesser extent, Gedeo. The causes and motives of the conflicts and wars were economic, political and cultural (Taddesse, 2004: 15). Due to hostile relationship with their neighbors, the Guji developed peaceful relations among themselves and became allies with each other against outsiders. In fact, the Guji regard themselves as fierce fighters and are also considered warriors, and feared by many of their neighboring groups (Taddesse, 2004: 16). In contrast, during my field work, I found them innocent and generous people. Hence, it appears that, despite being hard-pressed by regimes in Ethiopia, the determination of the Guji has helped the practices of *Gadaa* System and its embedded indigenous knowledge of forest conservation to continue in a relatively better condition than is the case in many other parts of Oromia.

In fact, there are a number of factors that could contribute to the destruction or conservation of the forests of a given area. Among these, population density and early settlement, economic activities of the society, the enforcement of law, poverty and resettlement could be mentioned.

The major concern regarding population density in relation to conservation is that the concentration of people on small land will damage the natural resources of the area. This should not be a surprise as people clear woodlands for building shelters, for cultivating crops and other purposes. But there is no apparent systematic relationship between population growth and deforestation (Marcoux, 2000). This means that it is not only the number of people in an area that matters but indigenous knowledge of the people on how to use the forests.

Concerning population density, as a result of population growth from within Guji society, marriage laws in *Gadaa* System traditionally prohibit early marriage, sex before marriage and sex after birth for about ten months. These are some of the traditional practices of population planning or reducing reckless population growth (Dejene, 2009). However, with the weakening of the *Gadaa* System, the traditional practices of family planning have lost their former functions thereby contributing to population growth. Moreover, the continuous immigration of people of other ethnicity to the area has contributed to population growth in Guji. As a result, based on the 2007 census, in comparison with the national and Oromia's population densities which were 67.05 and 76.93 people/km² respectively, the population density of Guji was 74.81 people/ km² (PCCFDRE, 2008). It could be even greater particularly in the middle and high altitude areas where there is relatively better forest cover and moderate climate. Hence, low population density may not be the cause for better forest cover in Guji.

Related to population density, early settlement is also believed to have contributed to the destruction of forests as people pose more pressure on the forests and other resources of the area as they live longer on the land. Historical documents and oral traditions show that areas inhabited by the *Gujii, Booranaa* and *Arsii* are believed to be the cradle of

Oromo (Asmarom, 1973; Taddesse, 1988). In contrary to this, History of the Oromo to the Sixteenth Century, written by a group of scholars (OCTB, 2006/1998) shows that the Oromo have been living in the north east Africa from the time immemorial and pushed toward the south as a result of the war with Egyptians and Axumites. So, the reconstruction of the History of Oromo according to these scholars uncovered that *Gujii, Booranaa* and *Arsii* areas are where the Oromo reorganized themselves under Gada System to get back the land they had lost. On the other hand, archeological findings trace the emergence of early Homo sapiens that lived in the middle of *Awaas* (Awash) valley about 160,000 years ago (White et al, 2003). Hence, there is no evidence that Guji is among the recently settled areas in Ethiopia. However, forest conservation systems cherished by the Gadaa administration have contributed to the minimization of forest destruction that could have resulted from unmemorable years of dwelling with and in the forests.

Concerning economic activities, some of the activities like agriculture, forestry and mining in the forests have great impacts on forests. The majority of the people in Guji, particularly in the middle and high altitude areas like around *Adoolaa, Shaakkisoo, Anfaraaraa, Waadaraa,* and *Uraagaa,* where there is relatively better forest cover, are engaged in mixed-farming (rearing animals and cultivation of crops) as in many parts of Ethiopia. Based on the 2007 census conducted by Central Statistical Agency, the Guji Zone has 14.4 % of non-farm related jobs compared to the national average of 25% and a regional average of 24% (PCCFDRE, 2008). However, even in agricultural fields, there is a culture of leaving big trees. In fact, in parts of *Uraagaa, Anfaraaraa and Shaakkisoo* coffee production has become common as in other parts of Oromia such as *Iluu Abbaa Booraa*, *Jimmaa* and *Wallaggaa* where there is better forest cover.

Even though coffee production requires the shade of trees, the existence of forests is not necessarily associated with coffee production as there are dense natural forests even where there is no coffee production as in the cases of *Bilooyaa and Waadaraa*. Even in areas where there is intensive coffee production, the density and the diversity of the natural forests is greatly affected. Accordingly, the formerly dense natural forests in the

zone in many areas like *Anfaraaraa, Shaakkisoo* and *Uraagaa* are thinned through clearing the undergrowths for coffee production. However, in comparison with cereal crop production like *teff (Eragrostis tef)*, maize, barely, wheat, millet and sorghum, coffee production is more forest friendly. This does not mean that there is less cereal crop production in Guji. In fact, barely, wheat, maize and *teff (Eragrostis tef),* are produced in different districts of the zone.

Gold mining at *Adoolaa*, *Laga Dambii* and its exploration in *Saakarroo* fields near *Laga Dambii* have been going on. There is also the Kenticha tantalum mine in *Oddoo Shaakkisoo*. Besides, there are state sawmills at *Adoolaa* and *Waadaraa* and many private wood processing industries in the zone. In the lowlands, pastoralism is a common economic activity (The National Regional Government of Oromia: Bureau of Finance & Economic Development, Regional Data Information Core process, 2011). Therefore, there is no unique economic activity that has had special contribution to the maintenance of forests in the zone.

The statutory law imposed on the people since the conquest in 1897 (Taddesse, 1988) has had a negative impact on the indigenous knowledge of the people. However, the conquerors mainly settled in the towns and they have their representatives from among the indigenous people to collect taxes for them and for the enforcement of statutory law (Jemjem & Dhadacha, 2011). Hence, their influence in the countryside has been relatively less thereby contributing to the continuous functioning of *Gadaa* administration in the society secretly.

In general, during the reigns of Menelik II, Hailesilassie and the Dergue, it seems that much attention was not given to the conservation of the forests of Guji rather than the attempt made to exploit the forests. The land tenure, Villagization, and settlement policies of the regimes appear to have greatly damaged the forests of Guji. This situation appears to coincide with the time of the great destruction of forests in Ethiopia which took place in 1885-1985 (Mulugeta, 2008: 5). During the Dergue regime, the villagization program greatly affected the forests of Guji (Taddesse, 1995). In fact, some

attention was given to state planted or protected forests whereby much of the natural forests were under the community. Even today, there are large natural forests which are not under government protected boundaries. Hence, it is unlikely that the statutory law imposed on the people has maintained the existing forest in the zone. Had statutory laws been the major contributors to the maintenance of forests, more natural forests would have been found around the major administrative centers in the central parts of Ethiopia: *Finfinnee* (Addis Ababa) and its surroundings and the former administrative town, Gondar, and other major towns.

Poverty is one of the major driving forces for people's engagement in environmentally unfriendly activities. Guji land had been rich in natural resources; and it is relatively rich in forest and mineral resources still today (Jemjem & Dhadacha, 2011: 58). The Guji have been living with these resources for so long. Hence, seen in relation to Guji society, poverty alone does not seem to have been a single most contributor for the rapid destruction of forests in the zone these days. The problem seems to be mainly associated with the immigrants after the conquest of Guji and rooted in the improper use of resources applied by the Ethiopian rulers. Therefore, the pressures on forests by the rich for accumulation of wealth in the name of investment and by immigrants for cultivation of coffee, chat and other cereal crops appear to be greater than what the indigenous poor have done to the forests to get their daily means of subsistence.

The mining activities that attract many people to the area are also owned mainly by the rich private investors (The National Regional Government of Oromia: Bureau of Finance & Economic Development, Regional Data Information Core process, 2011). The information obtained from the area revealed that businessmen and government officials are involved in the selling and buying of the land and hiring laborers to work on the land. Hence, greediness for personal benefit and/or to accumulate wealth by the rich seems to be one of the major causes for the destruction of forests and other natural resources in Guji. The growth and expansion of investment by the rich recently in Oromia has been contributing a lot to the destruction of natural resources in the region. But the rich are not

often found to pay for the destruction they have caused to the forests and other natural resources.

There are poverty stricken people, mainly from *Harargee*, who have settled recently in the area. In my opinion, had there been good planning and far-sightedness, there would have been other possibilities such as rehabilitating them in their original villages, absorbing them in the investment activities by training them or simply as laborers or settling them in non-forested areas. In spite of this, the government has been renting fertile lands suitable for agriculture by the name of investment to a number of foreigners in Oromia. What is going on by the government seems to be getting immediate benefit from investors and solving the immediate problems of poverty stricken people by settling them around and, in the few remaining forests, by giving less attention to its long lasting effect which appears to manifest itself in the form of recurrent drought in larger parts of Borena and in some lowlands of Guji, and erratic rainfall in many parts of Guji.

Hence, it seems that much of the destruction to the forests has not been caused by the poor indigenous people but by the immigrants (settlers by the government and self initiated settlers) and the rich who were involved in investment. The immigrants could be initiated by poverty or for more accumulation of wealth. Therefore, insightful administration and management of forest resource that considers not only one's own immediate needs but also of the coming generation is highly needed.

In general, in spite of the intricate factors that contribute to the destruction of forests such as population growth, agricultural activities, mining in the forests, resettlements and less attention given to conservation by the former Ethiopian rulers, there is relatively better forest cover in Guji to date. Therefore, seen in the light of institutional analysis and development framework (Kiser & Ostrom, 1982; Ostrom & Gardner et al, 1994; Ostrom & Burger et al, 1999; Koontz, 2003; Ostrom, 2004; Stellmacher & Mollinga, 2009: 44), the attributes of the physical environment (climate and nature of the forests) are similar to many parts of Ethiopia, consisting highlands, middle altitude areas and lowlands with different species of plants. Interaction with conquerors/immigrants, however, seems to

have contributed a lot to the deterioration of IK and, hence, to the destruction of forests. Hence, when the conditions of forests are seen in relation to the conquest, parts of Oromia which were conquered and settled by large number of conquerors seem to be generally with less forest cover than those which were peacefully conquered or settled by less number of conquerors. For instance, Shewa, *Arsii* and *Harargee* who resisted and fought the conquerors for long time and finally settled by large number of conquerors and/or settlers are with less forest cover than *Jimmaa, Iluu Abbaa Booraa*, and West *Wallaggaa,* to mention the major ones which are with better forest cover to date.

In Guji, areas which were settled by non-Guji people starting from the time of the conquest of Guji up to now are more destructed than areas where the Guji have settled. During the conquest, the conquerors mainly settled in the present day towns (Jemjem & Dhadacha, 2011) whose natural forests were converted into settlement areas. However, in some towns like *Adoolaa Woyyuu* and its surrounding areas, there is better forest cover. This could be associated with the tradition of the Guji, that this land was a sacred land where *Gadaa* has been practiced. Even today, the forests of resettlement areas like *Sawwaanaa, Biluu* and the hills between *Shaakkisoo* and *Uraagaa* highlands are under rapid deterioration by the settlers.

The culture in which the settlers are grown up could have an impact on their awareness of conservation of forests. For instance, those who have grown up in non-forested areas when going to forested areas clear the forests to produce the type of the environment they have been accustomed to. My experience of the settlers who were coming from the northern part of Ethiopia to *Iluu Abbaa Booraa* supports this idea. The first day some settlers were going to the area, I happened to be on the same bus they were boarding. They were continuously talking about the indigenous people of *Iluu Abbaa Booraa,* wondering why they have not become rich by clearing the dense natural forests and producing crops. However, the indigenous people, as I observed in *Iluu Abbaa Booraa* (in my experience of working there as a teacher for three years), have been living with the forests harmoniously.

Therefore, the coming of other people to Guji as conquerors, migrants in search of job as miners, merchants, agriculturalists, and settlers by the state as well as through self initiation is one of the major causes for rapid forest destruction in the zone. These people come from different parts of Ethiopia with different ways of life. The 2007 population census shows that the Guji zone has a total population of 1, 389,800 of which the Oromo constituted 78.58 % and the rest, that is, the Gedeo, the Amhara, the Somali and the others accounted for 14.33 %, 2.59%, 1.59 % and 2.92 % respectively. In comparison, the Oromo constituted about 94 % of the total population in Oromia (PCCFDRE, 2008).

The second important point related to, and may be the cause for the conquest of Guji and its settlement by others and the deterioration of the indigenous knowledge of the society could be attributed to the cruelty and the short-sightedness of the subsequent Ethiopian rulers in dealing with the Guji and their indigenous knowledge of forest conservation. It is obvious that conquerors do not worry about the welfare of the conquered and their resources. Due to this, the Ethiopian rulers have not seen the long lasting impact of the destruction of the forests not only on the indigenous people and settlers of the area but also on the whole Ethiopia and the Horn of Africa in general. From the very beginning they saw the Guji as their enemy and their indigenous knowledge as useless. Accordingly, their main target was subjugating Guji and exploiting the resources of the area (Jemjem & Dhadacha, 2011). As a result, they have been attracted by the gold, the cattle and the virgin forests of Guji, not by how the Guji conserved and maintained these resources. That is why great exploitation of these resources has been going on since the conquest of Guji without bringing observable change in the life of Guji people. The expansion of resettlement and inconsiderate agricultural activities even recently in the remaining forest areas like *Shaakkisoo* and *Adoolaa* is a serious threat to the forests of the area.

It is true that people migrate from one area to the other in search of a better life. From human rights point of view and in the era of globalization, halting the movement of people is not possible. Nevertheless, in a country where a vast area of land is given to investors from different countries for production of crops, industrial raw materials and

flowers, settling citizens of the country in the rare natural forests by the name of poverty, famine and shortage of agricultural land does not seem an appropriate measure.

The selling and buying of land, that has been going on in a concealed way by the name of 'renting land' in and around forests in Guji, is also another threat to the forests. The Borena-Guji Forest and Wildlife Enterprise is demarcating the forestland and including more forests in its protected boundaries. It is also educating people on the need for, and how to conserve, forests. In so doing, the former communal forestland of the indigenous people is coming under the protected forests. However, there are youngsters who have insufficient or no land at all. The demarcation seems to be going on without considering the needs of the present and future youngsters of the indigenous people. The demarcation of forestland, settlements and the illegal selling and buying of land are mainly done on the communal grazing lands and lands used for different purposes by the indigenous people.

The constitution of Ethiopia (1995) Article 40(3) states: "the right to ownership of rural and urban land, as well as of all natural resources, is exclusively vested in the state and in the peoples of Ethiopia.'' Article 40 (5) stipulates that the "Ethiopian pastoralists have the right to free land for grazing and cultivation as well as the right not to be displaced from their own lands." Even though there is no clear provision for communal land in the constitution, free land for grazing is customarily a communal land used by the community. When it comes to forests, the Forest Proclamation Number 542 of 2007 of Ethiopia does not mention communal ownership of forests; only private and state ownership were mentioned (Mellesse, 2008: 15). Even though Oromia Regional Proclamation Number 56 of 2002 recognizes the customary right of access to land for communities (Mellesse, 2008: 16), what is practically observable on the ground is the indigenous people are losing their customary communal land to the settlers, investors and the government (protected forests). That means, the 'grabbing' of the communal land of Guji as ''no man's land' by the former Ethiopian rulers seems to be indirectly going on to date. Mellesse (2008: 15) argues that it is absurd for a country that has recognized the rights of its people as distinct nationalities within a country to secede when it denies a

right as simple as communal land ownership. In contrary to what is going on in Guji and in Oromia in general, the ILO convention, as cited by Mellesse (2008: 15) states that "indigenous people have the right to maintain and strengthen their spiritual relationship with their traditionally owned or otherwise occupied and used lands, territories, waters, coastal seas and other resources and to uphold their responsibilities to future generations in this regard."

Nevertheless, the government is getting a lot of money from the sale of the forest products from the protected forests and from private investors on the former communal lands as well as the lands from which the local people have been evicted. The surrounding community, however, is not getting considerable benefits. This could make the surrounding community develop negative attitude to the protected forests and the investments. With these complex conditions, the demarcation of forestlands may not be a guarantee for the conservation of the forests of the area. My argument is that the benefits obtained from the forests, agricultural activities and mining are unlikely to be properly reinvested to create job opportunities that have less impact on the forest resources and make the local people beneficiaries.

The Guji Zone is rich in mineral resources, mainly gold from which private investors and the state are getting a huge amount of money. For instance, "between 1998 and 2008, MIDROC has extracted thirty four metric tons from Lega Dembi mines, earning 466 million dollars; the new mine at Sakarra is expected to bring a revenue of 564 million dollars of which 130 million will go to the government as taxes and royalties"(Minase on Addis fortune, 29 November 2009). We could have used the income obtained from these resources to establish industries or create job opportunities that can absorb jobless people and others who are engaged in the destruction of forests. Hence, these intricate factors have greatly contributed to the destruction of forests in the zone.

On the other hand, the attributes of the community (the Guji), their understanding of the values of forests, beliefs, norms and the associated laws in *Gadaa* seem to have contributed significantly to the conservation of forests in Guji. In relation to this, Jemjem

and Dhadacha (2011: 58) state that, like many indigenous people around the world, the Guji believe in interdependence of people and their environment for harmonious symbiotic unity. The Guji tradition supports the wise use of land, water, and forests.

The findings of this research corroborate the theory and the findings of many researchers that indigenous knowledge contributes to conservation of natural resources (Salviac, 1901; Warren, 1992; Le Breton, 1993; Oteinde, Ezaza & Boisvert, 1997; Semali & Kincheole, 1999; Woldsilassie, 2000; Fabricious, 2004; Workineh, 2005; Kitessa, 2007; Lalisa, 2008; Stellmacher & Mollinga, 2009). The presence of ritual areas under the control of *Abbaa Gadaa* with better forests and other natural resources than the surrounding areas is in line with these findings. Accordingly, the strict care given to forests and other natural resources of ritual areas appears to go with reserve approach to conservation.

However, to see whether indigenous knowledge of Guji is able to cope with the ongoing large scale destruction of forests, it is necessary to consider its present level. The *Gadaa* System, which had been used to lead the political, social, economic and spiritual life of the Guji society has lost many of its roles and has now remained with minimal ritual practices and the blessing of the meetings by modern administrators. That means, the *Abbootii Gadaa* and their councils are now powerless and remained simply nominal. Also, the formal education has included very limited contents of indigenous knowledge on forest conservation. As indicated by elders, with increase in the number of educated people in modern education, no significant change has been observed in the conservation of forests rather than the escalating destruction. In fact, with the advancement in science and technology, no significant improvement has been observed in conservation of natural resources in general. It is true that advancement in science and technology depends on the exploitation of natural resources. I am not sure whether scientists labored a lot on conservation of natural resources as much as they did on the exploitation of natural resources. Moreover, modern sciences taught in our schools fail to consider the traditional knowledge and beliefs of the society that have contributed to the conservation

of forests as it was witnessed in the content analysis of the textbooks of elementary schools in Oromia.

Even though the Constitution of Ethiopia (1995), the Education and Training Policy (1994) and Conservation Strategy (1994) have stressed the need to include indigenous knowledge in the curriculum, the content analysis of the elementary school textbooks yielded results that are contrary to what was expected. In relation to this, Chandra (2002) in Rao (2006) warned that the problems of excluding the values and norms of the society in education have been evidenced by serious problems exhibited recently by Indians (even by the educated people in modern education) as in self interest over public interest, lack of respect for elders, deceit, cheating, violence, dictatorship, crime, and lack of love, goodness, compassion, hospitality and kindness.

The degradation of indigenous knowledge is also against the 1992 UN convention on Biological Diversity. Article 8(j) of the convention reads:

> *Each contracting party, subject to its national legislation, respect, preserve and maintain knowledge, innovations, and practices of indigenous and local communities embodying traditional life styles relevant for the conservation and sustainable use of biological diversity; and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices, and encourage the equitable sharing of the benefits arising from utilization of such knowledge, innovations and practices (cited in Mellesse, 2008: 16).*

Nevertheless, the indigenous knowledge of Guji on forest conservation has remained in the minds of the elders. Not much has been done even informally as youngsters are not likely willing to give attention to the traditional practices of elders who appear to be rather hopeless to make further attempt in this aspect. Moreover, since participatory forest management is at its infant stage, its role in revitalizing and using the indigenous knowledge of the people for conservation of forests appears to be at a low level. Hence, the indigenous knowledge of the Guji alone, particularly with its present low status, is unable to solve the large scale destruction of forests going on in the zone.

CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This part of the research deals with a summary of findings, conclusions and recommendations for the improvement in the use of indigenous knowledge of the Guji Oromo on forest conservation. The summary of the findings is based on the analysis of data obtained through interview, observation, and content analysis. The conclusions brought convergent tracings of findings to view. The recommendations held solutions and implications for further research.

6.1 Summary

The study was designed to investigate indigenous knowledge of the Guji Oromo on forest conservation and its integration into curriculum development for elementary schools of Oromia (1-8). In this study, 'indigenous knowledge' is considered as understandings, beliefs and practices of the Guji in sustainable use of forests obtained as a result of protracted interaction with their environment. 'Forests' refer to thickly standing trees covering large areas as well as patches on small areas. Attention was also given in the study to single trees which could constitute the patches or the dense forest. In addition, the study has dealt with the wise use of forest related resources (grasses and water).

The literature related to issues in the world, Africa, Ethiopia and Oromia concerning indigenous knowledge of conservation of natural resources and particularly forests, was read and reviewed. When it comes to Oromia, the literature touches almost all parts of Oromia even though the study was done in Guji for the purpose of manageability. The review of related literature also helped me to develop instruments for the study.

The study employed a qualitative case study design to investigate Guji's indigenous knowledge of the wise use of forests. Accordingly, the necessary data were collected

from purposely selected resourceful persons and places. Interview, content analysis and observation were used to collect the data. The data analysis involved rigorous reading of the data collected, referring to research questions and the review, identifying themes, analyzing, writing, identifying gaps, reading the literature reviewed, formulating questions, data collection and analysis of the data in a cyclic form. Finally, the data were presented textually maintaining the perspectives and view points of the participants with explanations and interpretations of the researcher. Tables, percentages and figures were used to present the findings. Using Institutional Analysis and Development Framework, postmodern theory and indigenous knowledge inclusive curriculum development theories and models as my beacons, the study has come up with the following major findings:

- The Guji Oromo know that the destruction of forests has a negative impact on the rearing of animals and production of crops.

- The Guji use different species of plants for different purposes: for medicine, for wild food, for bee keeping, for construction, for household furniture, for fuel, for ritual practices. Thus, they give the necessary protection for their trees. Accordingly, flowering plants that are useful in honey production, seed bearing plants which are used as wild food, medicinal plants that are used to cure patients, big trees that give shade for animals and human beings, forests where animals get water, grass and shade during dry season, and forests and other land resources around ritual areas are protected.

- The Guji know that cutting or clearing flower and seed bearing plants and growing part of plants can thwart their reproduction and continuity.

- As the Guji respect and protect ritual areas, there are many shrines/ritual areas with well protected forests in Guji.

- Particular species and big trees such as *Odaa (Ficus sycamore)*, *Birbirsa (Podocarpus falcatus)*, *Qilxa (Ficus vasta)*, *Gaatiraa (Juniperous abyssinica) Gudubaa (Polyscias fulva)*, *Heexoo/Koosoo (Hagenia abyssinica*), *Hindheessa*

(Teclea noblis), *Baddeessaa (Syzngium gaertn)* and *Waddeessa (Cordia abyssinica)*, are given care by the Guji Oromo.

- The Guji traditionally use dead trees for fuel, branches for simple construction purposes and selected trees for house hold furniture. They usually do not cut the growing part of a tree but only its branches.

- The Guji recognize that forests increase fertility of the soil which is necessary for agricultural activities and they also appreciate the aesthetic value of forests in giving beauty to land.

- The belief system of Guji and the norm they have developed have helped them to give respect and care to young and big trees, considering young trees as their children and big trees as Guji elders. The presence of trees in agricultural fields in many areas and in and around towns like *Adoolaa* is an evidence for this. If situations force the Guji to cut trees, they used to express their condolences by putting green grass on the remaining part of the trees, wishing them to recover.

- The Guji have a good practice of using fire. In the past, they used to use fire to defend themselves from wild animals and to get space in the dense forest. Fire has been commonly used to burn savannah lands, particularly in lowlands, to regenerate new grass for cattle. In Guji tradition, it is uncommon to set fire to highland forests. When it becomes necessary for the preparation of agricultural land, a buffer zone is made before hand by clearing or digging the land to halt the expansion of the fire beyond the boundary of the needed agricultural land. In harvesting honey, water is used to extinguish the fire used for that purpose. Moreover, in the year of transfer of *baallii* from one *Abbaa Gadaa* to the other, the burning of land is prohibited.

- Concerning the use of grazing land, forest areas are protected for grazing in the dry season. Hence, rotational use of grazing land is the customary practice of the society. The carrying capacity of the land is also considered, and if the number of

cattle is found to be beyond the carrying capacity of the grazing land, the owner of the cattle is asked to search for another grazing land. There are some special grazing lands, *kaloo*, kept for weak and small animals that cannot go for long distances. This traditional rotational use of grazing lands helps in the recovery and maintenance of forests in the area.

- There is a customary sustainable use of water resources in Guji, particularly referring to the lowland areas, as understood from literature review. During the dry seasons, hand dug wells are used. The use of water is guided by *seera bishaanii*, the law of the water. Those who invested a lot in digging wells, get the greatest share of the water. However, those who do not have contribution for different reasons do not suffer. They are given some water. The Guji and Borena, after making their animals drink, even leave some water on the *naanniga*, trough for the wild animals to drink. This shows how much their environment friendly thinking is deeply anchored to their cultural values, and how they are far-sighted and concerned for wild animals. During rainy seasons, they use surface water and keep wells for the dry seasons. As water is not found everywhere, forests around the sources of water are not cleared.

- In Guji tradition, people do not settle in forests, but out of forests. They use forests as shades for animals during dry season and those who do not have cattle are not usually allowed to settle in forests.

- The laws in *Gadaa* System have helped the society to use their indigenous ways of conserving forests and the related resources (water and grass). Those who violate the laws were punished physically and socially (through social exclusion and giving their property in kind, for instance, slaughtering bulls).

- Hence, the indigenous knowledge of the Guji embedded in *Gadaa* System has helped in conservation of forests and related resources. However, *Gadaa* System has declined since the conquest of the Guji by Menelik and its replacement by

statutory laws and administration that have been imposed on Guji. The subsequent Ethiopian rulers have further weakened the *Gadaa* System. Though nominal recognition has been given to *Gadaa* since 1991, its role is still reduced to ritual practices, arbitration and blessings at the openings of government meetings. This means that the system has lost its decision making power. The weakening of *Gadaa* and the subsequent immigration of people from different parts of Ethiopia with different cultural backgrounds and activities that undermine the traditional practices of Guji has gradually deteriorated the indigenous knowledge of Guji on forest conservation.

Moreover, as found out in the content analysis of elementary school textbooks, modern education that has not given attention to indigenous knowledge of the society has played its part in weakening the indigenous knowledge of the society. This does not mean that the curriculum has not totally included important issues about conservation of forests. There are some important issues in the curriculum about conservation of forests that are not part of indigenous knowledge of Guji. For instance, planting and growing trees to rehabilitate the degraded lands and the use of aged and big trees for different purposes and replacing them by young ones, as practiced in modern forestry for their economic values. The modern practices of conservation that came into being following the grabbing of the communal lands of Guji, specially the forestlands; however, seem to have followed the same pattern as it has not been typically participatory and beneficiary to the surrounding community. In general, the use of indigenous knowledge of Guji in modern conservation practices appears to be at a very low level.

6.2 Conclusions

Based on the analysis of data and the findings identified thereof, the following conclusions have been made.

First of all, in this study, I have obtained the answers for my queries why my father punished me for cutting a growing young tree and prohibited me and my brother from cutting big tree. Similarly, the Guji respect big trees as their elders and give care for young trees as their children and they punish those violate these norms and destruct the trees. The care given to trees is based on their uses and the beliefs of the society. The Guji believe that cutting big trees is equivalent to killing elders and that for those who cut young trees children will not grow. Therefore, the many uses of forests or trees for which they are conserved as mentioned in the summary part and the belief system of the society that misusing creations, forests or trees brings punishment from the creator or *Waaqaa,* might have made my father take the actions. Thus, the Oromo's world view that the interaction between humans and other creations (*umaamaa*) is guided by the will of God (*Uumaa*) and the indigenous norm of the Oromoo (*safuu*) appear to contribute to the conservation of forests.

In this study, I have learned a lot about indigenous knowledge of forest conservation from Guji elders. My childhood experiences of forests and their conservation such as the care given to big trees, young growing trees, seed bearing trees, flowering trees, the apex of the trees, and the use of dead trees for firewood and branches for different purposes rather than the stems of the trees were found to be similar to that of Guji, who live at about 720 kilometers from where I was born and brought up, *Wallaggaa*. In relation to this, Asmarom (1973:7) stated that "nearly all the Oromo speak closely related dialects of the same language, *Afaan Oromoo* and share a common cultural heritage."

The Guji, in their day to day life activities, have developed their indigenous knowledge of conserving forests and related resources. The findings of the study, therefore, show that the indigenous knowledge of Guji has helped in the conservation of forests. Their indigenous knowledge is mainly based on the utilitarian value attached to the forests and the belief system of the society. Anything that is associated with the values and the beliefs of the society will be deep-rooted and long lasting particularly if it is supported by modern education and integrated in modern life practices. However, the indigenous knowledge of Guji mainly focuses on maintaining the existing forests which may not

encourage the cutting down of aged trees and replacing by the young ones, a common practice in modern forestry. Thus, seen from the economic value of forestry, it needs to be supported by modern conservation practices.

What has been done to the Guji since the conquest has had a debilitating effect on Guji's indigenous knowledge of administration in general and forest conservation in particular. Hence, factors that have contributed to the deterioration of the indigenous knowledge of the Guji Oromo on forest conservation appear to be supported by postmodern theory as many of them were exogenous factors associated with the conquest of the Guji by Menelik and the actions taken by subsequent Ethiopian rulers. The regimes in Ethiopia have outlawed and weakened the indigenous socio-political administration of the Guji Oromo, *Gadaa* System and its laws, and they have imposed statutory laws and policies from above without considering the interests, needs and knowledge of the indigenous people. For instance, villagization and resettlement programs during the Dergue, provision of education system that has not considered the indigenous knowledge of the people, investment and/or exploitation of natural resources without considering the indigenous knowledge of the people and without making them beneficiaries are some the cases of the imposed policies which have weakened indigenous knowledge of the Guji.

On the other hand, it is to be naïve to consider all the things of outsiders as harmful to the indigenous people. For example, the Guji have not significantly benefited from their forest resources in the form of modern timber production. Hence, lumber mills are necessary if they do their activities in a sustainable way by using aged trees and replacing them by young ones.

In schooling, the content analysis of textbooks has shown the place given to indigenous knowledge in the constitution, conservation strategy and education and training policy of Ethiopia has not been realized. Moreover, as participatory forest management is at its initial stage in Guji, the use of indigenous knowledge in modern conservation practices appears to be at a low level. Consequently, the Guji are not in a position to use their rich indigenous knowledge and natural resources for development. This appears to be

associated with the failure to use *Gadaa* System with its great untapped valuable resources and potentials in the area of democracy, natural resource conservation and conflict resolution by integrating with modern practices.

Even though some recognition has been given to *Gadaa* since the fall of the Dergue regime, it has not regained its former political, economic and social power of administering the Guji society. Hence, it has remained nominal with limited roles such as dealing with ritual, ceremonial and arbitrational roles. Therefore, any attempt made to revitalize the indigenous knowledge of the society requires deconstructing the existing curricula, modern conservation practices and their administrative structures to reform and make them inclusive of valuable indigenous knowledge, as suggested by advocates of the theories of deconstructionism and post-structuralism.

6.3 Recommendations

Based on the summary and the findings of the study, the following recommendations have been made.

- The decline of *Gadaa* as consequences of the negative actions taken on it by successive Ethiopian rulers and the promotion of resettlement, agriculture (crop production), mining and forestry without addressing the needs and the indigenous knowledge of the society are unlikely reversible within a short period of time. Indigenous knowledge, on the other hand, has remained in the minds of the elders. If these elders pass away, there is no possibility of getting it back. In this research, it is hoped that utmost efforts have been made to identify and document the indigenous knowledge of the Guji Oromo on forest conservation that could be worthwhile to be included in the curriculum. Hence, it is believed that the important issues/ themes identified in this research could serve as foundations for discussion by curriculum developers, indigenous knowledge holders, teachers and students so as to develop a curriculum which is more inclusive of indigenous knowledge on forest conservation in the future.

- It appears that a more detailed study is needed by a group of researchers in a more coordinated and organized way involving the indigenous people (mainly elders, *Abbaa Gadaa* and educated people from among the indigenous people), researchers, policy makers, curriculum developers, NGOs and other organizations working in the community so as to identify valuable indigenous knowledge of the society not only on forest conservation but also on all aspects of the life of the society and include it in the curriculum and the day-to-day activities of the society. The inclusion of indigenous knowledge in formal education and in the daily activities of the people helps youngsters out of schools to learn indigenous knowledge informally and for those in schools to learn both modern scientific and indigenous knowledge. A similar study is also needed in all parts of Oromia. In such a cooperative work, not only the strong aspects of indigenous knowledge but also its limitations such as the non-participation of women in *Gadaa* administration and the selection of *Abbaa Gadaa* from the limited clans (Asmarom, 1987 in Jemjem and Dhadacha, 2011: 166) could be discussed and improved and the valuable ones are maintained to function in today's world.

- In my study (Desalegn, 1998) on "The Extent to which Secondary School Students Disseminate Environmental Education to the Surrounding Community," I found that students' practice of disseminating environmental education learnt in schools to the surrounding community was very low. In the present study, which set out to identify the inclusion of indigenous knowledge of the society in elementary school textbooks, IK in the curriculum was found to be very low. Hence, my studies show that there is a barrier between schools and the surrounding community in that the curriculum is deficient of the indigenous knowledge and what is learnt in schools is not properly reaching the community out of schools.

  Actually, attempts have been made by DAs to teach the rural community in Ethiopia nowadays. Nevertheless, as they are also the products of the modern curriculum, which is deficient of indigenous knowledge, their teachings also seem

to be dearth of the indigenous knowledge of the local community. Thus, this study recommends the integration or inclusion of indigenous knowledge of Guji on forest conservation in the curriculum as well as in the modern conservation practices, and cooperation between schools and the surrounding community.

- The inclusion of indigenous knowledge in school curriculum could be done in different ways. It could be integrated in the already existing related subject matters. The integration of bits of the contents of indigenous knowledge in different subjects, however, may not appear feasible and appealing to students. Also, the very nature of indigenous knowledge itself may not fit the criteria of modern sciences which rely on objectivity and measurability. So, easy integration is unlikely to achieve. On the other hand, integrating indigenous knowledge contents in related subjects may be regarded as forcing teachers teaching those subjects to teach indigenous knowledge contents. It is also making all students who take the subjects learn indigenous knowledge contents. This type of indirect coercive approach may not produce the intended result. So, it appears important to develop an independent indigenous knowledge subject at different grade levels consisting of indigenous knowledge contents. In this way, bits of related indigenous knowledge contents found in school subjects could be included in indigenous knowledge subject to be developed.

  It appears advisable that if indigenous knowledge is prepared as an independent field or as a special subject matter/course, those who are interested in it will teach and learn it. This could be done at the level of the region, Oromia, as the content analysis of textbooks for elementary schools of Oromia has shown a relatively better inclusion of indigenous knowledge in *Afaan Oromoo* subject, which was prepared at region level mainly by educators who are indigenous to the region.

  The total integration of indigenous knowledge and modern science may be achieved gradually after the preparation of curriculum and teachers for this purpose. In general, the decision to include indigenous knowledge in modern

school learning should be reached through debate and consensus among stakeholders involving students, teachers, indigenous knowledge holders, curriculum specialists, policy makers and implementers so that the curriculum developed will fit to the needs of the community for which it is prepared.

- In the past, when the official language and the medium of instruction was not the native language of the Oromo, involving elders and other community members in the preparation of curriculum was unthinkable. Now, with the use of *Afaan Oromoo* as official language and medium of instruction (at elementary level, teacher training colleges), it is easy for the community members to participate in the preparation of curriculum. The findings of this research could help in the selection of contents to develop an indigenous-knowledge-inclusive curriculum. Moreover, it may also be useful in the efforts made to train youngsters and adults out of schools on indigenous knowledge of forest conservation. In general, this research has come up with the following model that would serve as a guide to revitalize and use indigenous knowledge for conservation of forests.

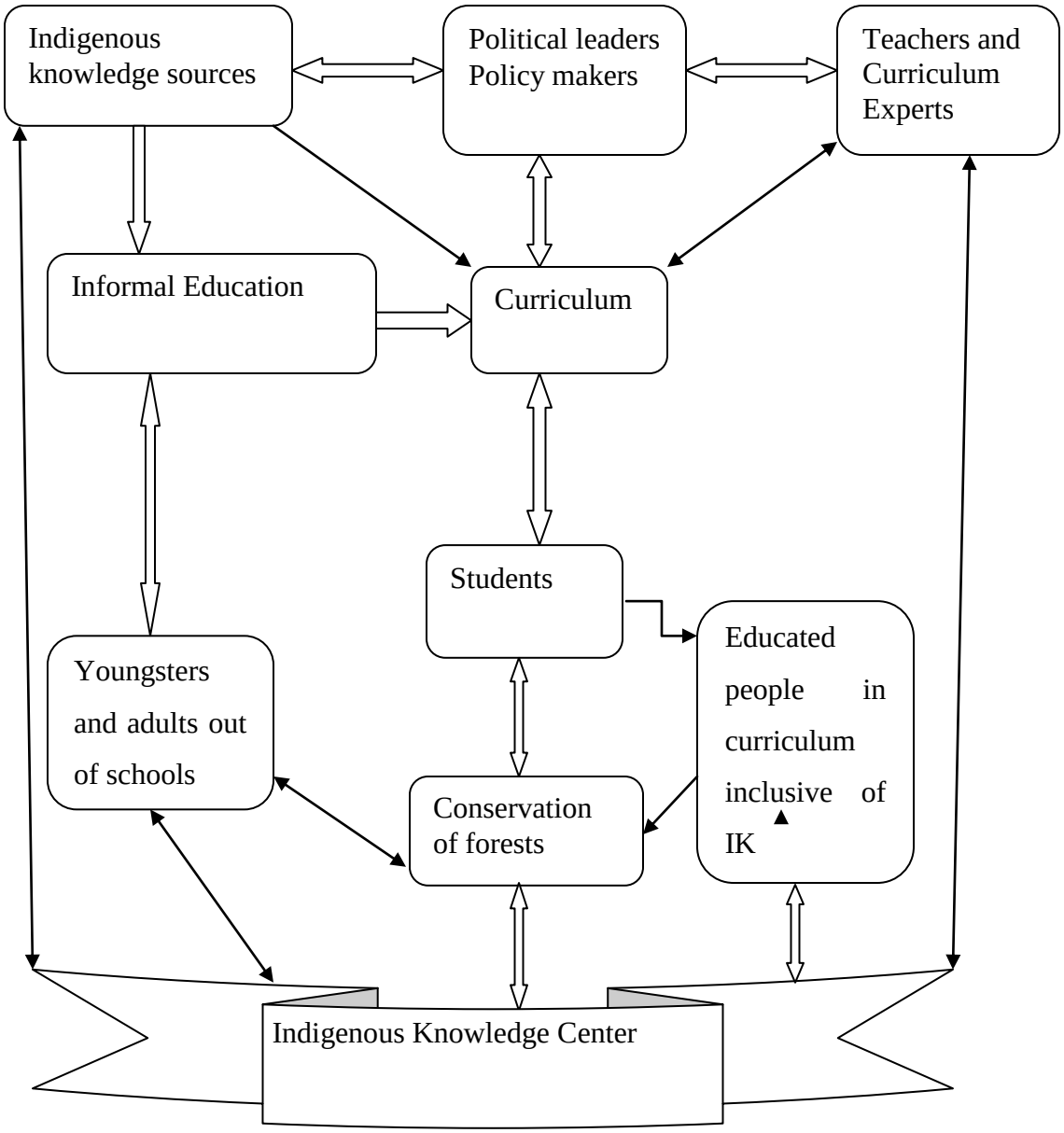

Figure 18: Model for Revitalizing Indigenous Knowledge

- As depicted in the model, there is a need for smooth communication and cooperation among indigenous knowledge sources: elders (*Abbaa Gadaa, Gadaa* councils, and experienced persons among the community), political leaders/policy makers, teachers and curriculum experts in the process of planning and developing the curriculum. Policy makers in this case, could include experts from

different ministries and NGOs concerned with conservation of forests and curriculum development. Moreover, the curriculum development process has to include students, community members (adults and youngsters out of school). As indigenous knowledge has mainly remained in the minds of elders, they need to play an active role in the preparation and evaluation of the curriculum.

Indigenous knowledge curriculum could, therefore, be developed through debate and consensus of all stakeholders either by integrating it in other related subjects or as an independent subject matter. This has to consider relevant issues such as the needs and interests of teachers and students, the preparation of teachers who implement the curriculum (integrated or specific subject), schedule in schools, and attention of students for integrated subjects and independent subject matters. Elders also play a significant role in the training of teachers as well as in supporting them as invited guests in schools or in the classrooms.

Using curriculum developed in such a way, educated leaders and experts who can apply both modern scientific knowledge and indigenous knowledge could be produced in different ministries. If this model is properly applied, it is hoped that the future *Abbaa Gadaa* and their councils (leaders of the country) will be selected from among those who will be educated in this type of curriculum. This will solve the problem that *Abbootii Gadaa* who have not been well equipped in modern education have been facing in competing with the modern leaders of the world in this era of globalization.

- Alongside with formal education, education about indigenous ways of conserving forests needs to be offered informally to youngsters out of schools. Both in-school and out-of school ways of educating people on indigenous knowledge are targeted to bring about effective conservation of forests. It may be necessary to establish an indigenous knowledge center, consisting of elders, political leaders, curriculum developers, experts dealing with the conservation of forests, and community members (adults and youngsters) and that continuously works on how to promote

indigenous knowledge and use it in conservation of forests and other natural resources. Including people from different sectors and walks of life in indigenous knowledge center could help to promote and expand indigenous knowledge in respective areas, sectors or groups they are coming from.

Of course, it is important for the center to have its own budget, leadership, policy makers, researchers, curriculum developers and educators who teach youngsters and adults out of schools and students and teachers in schools. This helps to maintain the continuity of the use of indigenous knowledge in the modern ways of living. Accordingly, it seems possible to use the indigenous knowledge of our society in the future in conservation, administration, conflict resolution, and all aspects of social life. Political willingness and determination seems to play a significant role for the implementation and effectiveness of this program. The cooperative work indicated in this model could also help to implement the recommendations suggested below.

- Participatory forest management is believed to be one of the means through which conservation of forests could be promoted by involving and making the local community beneficiary form the forests. Participatory forest management in Guji is, however, at its early stage. As a result, the indigenous people are complaining about the demarcation of communal lands to be under protected state forests. Under the situation in which the local indigenous people are not getting appropriate benefit from the protected forests and they do not believe in the demarcation of forestlands, forest conservation may not be effective. Unless the surrounding community gets more benefit than what they used to get from the forest before its demarcation, they may not give proper care for it. The local people also aspire to take part in the planning, execution and evaluation of the forest conservation scheme in which their indigenous knowledge is recognized and becomes part of forest conservation efforts. Hence, these issues need be taken into consideration in an attempt to apply participatory forest management.

- In the conservation effort being made, it appears necessary to give attention to indigenous species of trees as they are friendlier to the climate of the area.

- Investment activities need to take the livelihoods of the indigenous people or the local community and the sustainable use of the natural resources into consideration. They should not evict the indigenous people from their land with which they have historical and emotional attachments and on which their indigenous knowledge is based because it is in such an expelling way that indigenous knowledge has been lost in many cases. Rather, investment activities need to work on how to develop valuable indigenous knowledge of the people and bring betterment to the life of the people. Such mutual development effort appears to result in sustainability of the investment activities and the development of the indigenous knowledge of the local people.

  Investments in Guji should also focus on activities which are friendly to the forests and minimize pressure on the forests. Accordingly, investors need to work on how to rehabilitate and improve the natural resources of the area as much as they labor to exploit them as natural resources are created not only for the benefit of the rich but also of the poor and not only for the present generation but also for the future generation. This means that the wealthy should pay for the damage they bring to the environment and its resources.

- The immigration and/or resettlement in Guji by people from the neighboring areas of Sidama, Gedeo and Somali, and from the central and northern Ethiopia, from *Harargee* and other areas shows how the Guji Zone is relatively attractive in natural resources particularly gold, forest and agricultural land. However, the concentration of people on limited forestlands of the area may put the very existence of the lives of both the indigenous and the incoming people in danger. In other words, the indigenous people should not be losers of their natural resources to the competing forces on the resources. Rather, they have to be beneficiaries of their resources. Hence, corrective measures need to be taken to ensure that the indigenous people are the real beneficiaries of their own resources.

As much as possible, it is necessary to avoid resettlement in and around forests. Rather than settling the poor people in forests, it is better to rehabilitate them in their original homeland. In this respect, the terracing and water harvesting activities going on in Ethiopia on a large scale would help to retain people on their land if it is properly done and followed by planting and growing trees on terraced lands.

The other alternative is training people and involving them in other friendly activities to forests. Moreover, rather than losing the very limited natural forests of the area, it seems preferable to use the income obtained from the forest resources to rehabilitate the poor who are engaged in destructive activities to the forests. If resettlement becomes unavoidable, even though it is not recommendable, it is necessary to carry it out on selected and less forested areas.

Furthermore, orientation and training need to be given to the settlers to live according to the values and norms of the indigenous people. Indigenous people on their part should not ignore everything of settlers; they need to learn valuable knowledge and practices of the settlers. Thus, it is necessary to learn from each other and live cooperatively and harmoniously with the environment.

It is widely believed that the fundamental cause for the migration of people is population pressure on the environment and the consequent destruction of resources. Therefore, reducing population growth through family planning appears crucial to solve the problem.

- The attempt to change the formerly cattle rearing and minor crop producing society in the study area into cereal crop and coffee producers may exasperate the destruction of the forests of the area and bring worse conditions on the life of the society. Rather, the practice of rearing animals and crop production that combines indigenous knowledge of the people and modern technology on small land needs to be introduced to the area.

- Generally, for the implementation of these recommendations, it requires commitment, dedication and cooperation on the part of administrators, policy makers, indigenous people and educators working in different fields related to conservation of forests and other natural resources.

  Policy makers need to give attention to the needs of indigenous people and the proposal of researchers and curriculum developers. They need to create suitable environment for the development of indigenous knowledge. They have to play a leading role in the establishment of indigenous knowledge center and the allocation of the necessary budget for its realization.

  Experts and curriculum developers need to learn from elders about indigenous knowledge and incorporate it in the curriculum and modern conservation activities.

  Elders are expected to play a leading role in providing information for experts to develop curriculum and for policy makers to formulate appropriate policy for the indigenous people, in training teachers and teaching students and the community at large.

  Teachers and students also need to be open minded and willing to learn from elders. Local administrators should be careful when allocating land for investment, settlement, mining and other activities so as not to make forests vulnerable to destruction. The immoral act of selling and buying the communal lands of the indigenous people must stop.

  To guide all these activities, it appears necessary to develop a policy that gives special recognition to indigenous knowledge and the rights of indigenous people.

- The areas to be addressed in further studies include:

  - The causes of the devastating forest fires of 2000 in Guji
  - The impact of religion on conservation of forests
  - The impact of modern mass media on indigenous knowledge in forest conservation
  - Teachers' adaption of curriculum to include indigenous knowledge in their teaching, and
  - The illegal selling and buying of land, mainly forest land in Guji for which administrators, businessmen, government employees, settlers/ immigrants were blamed.

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Appendix A

I. Interview Guide for Abbaa Gadaa/Elders

1. What are forests and their conservation for you? What cultural wisdoms and beliefs are there in Guji for the conservation of forests? What do you do to conserve them? Do the Guji have the tradition of planting trees? For which species do you give more value or protection? Why?
2. What laws and/or norms of forest conservation are in Gada system? How are they applied? What will happen to those who transgress the laws?
3. Would you tell me proverbs that reflect the need for conserving forests?
4. What does the practice of traditional/customary conservation of forests look like these days?
5. Is there destruction of forests in your area? If there is, what are the causes of their destruction? Do you think that the customary practice of forest conservation could help to minimize the destruction?
6. What relationship do you have with forest conservation experts in your area? Does what they teach you go with your traditional awareness, belief and practice of forest conservation? To what extent do they entertain your needs and interests?
7. To what extent have you taken part in sharing your experiences of traditional forest conservation for curriculum developers?
8. What have you done so far to share your traditional ways of forest conservation to the new generation?
9. How do evaluate the roles of school and present generation in customary conservation and conservation of forests in general?
10. What are the major hindrances to the use of traditional conservation practices these days?
11. In general, what do you recommend to be done to better use the traditional conservation of forests in modern conservation practices?

II. Interview Guide for Community Members around the Forests

1. What are forests for you? What do you do to conserve or not to conserve them traditionally? What beliefs and laws forest conservation are there in your community?
2. For which species of trees do you give more value or protection? Why?
3. At what state is the traditional practice of forest conservation these days? What factors have contributed to it to be at that level?
4. Is there destruction of forests in your area? What are the causes for their destruction?
5. Do you think the use of the traditional awareness, beliefs and practices of forest conservation by Guji will help in minimizing the destruction of the forests?
6. Are there protected forests (under the control of the state) around you? What benefits have got from the protected forests? Do you have any participation in the planning, execution and evaluation of the management of the forests?
7. What do you recommend to be done to better conserve forests?

III. Interview Guide for Elementary School Students (Grade 5-8)

1. What traditional awareness, beliefs and practices of forest conservation are there in Guji society?
2. What laws are decreed by abba gadaa to conserve forests on gadaa assembly?
3. What historical areas do you know in your locality in relation to gadaa practice?
4. Have you learnt the traditional practice of conservation by Guji you might have experienced in the society at school?
5. Do your parents or community members tell you their traditional ways of conserving forests?
6. What do you feel learning the traditional awareness, beliefs and practices of your community on conservation of forests if they are included in the textbooks you use in schools?

7. Is there destruction of forests in your area? What are the causes for their destruction?
8. What do you recommend to be done to better conserve forests?

IV. Interview Guide for Teachers (Grades 5-8)

1. What traditional practices of forest conservation do the Guji have?
2. To what extent are included in the curriculum?
3. Do think that they are important to be included in the curriculum?
4. What needs to be done to include them in the curriculum if you consider them important?
5. What do you feel about teaching them if they are included in the curriculum?

V. Interview Guide for Forest and Wildlife Conservation Experts

1. What traditional awareness, beliefs and practices of forest conservation are there in Guji society?
2. At what state is this traditional knowledge of forest conservation these days?
3. Is there destruction of forests in your district? If yes, what are its causes?
4. Do think the traditional practice forest conservation by the community would help in minimizing forest destruction?
5. To what extent have used the traditional practices of the society in your forest conservation endeavors?
6. To what extent have entertained the needs and interests of the local community in the use of forest resources so as to encourage participatory forest management?
7. What do you recommend to be done to conserve forests effectively?

VI. Interview Guide for Culture and Tourism Officers

1. What tradition of forest conservation is there in Guji society?
2. Do you think the traditional knowledge of the society on forest conservation is helpful in modern conservation practices?
3. At what level is that traditional practice these days? What made it to be at that level?
4. What do you recommend to be done to use the traditional practice in modern conservation efforts?

VII. Interview Guide for Curriculum Experts

1. To what extent have you included the indigenous knowledge of the Oromo (of Guji on conservation of forests in this case) in the textbooks?
2. To what extent have you worked with indigenous knowledge holders (abbaa gadaa/elders) in the preparation of the textbooks?
3. What do recommend to be done for the curriculum to better reflect the indigenous knowledge of the people?

VIII. Interview Guide for Chairman of *Gandaa*

1. What is role of *abbaa gadaa* for the decision made at local/*gandaa* level? What relation do you have with them?
2. Is there investment project in your *gandaa*? If there is, on what areas?
3. Are there settlers in your *gandaa*? If there are, from where were they? When they did come to your *gandaa*? How many are they? Was the willingness of the surrounding society was asked before they came?
4. Is there destruction forest in your *gandaa*? If there is, who have done? What measures have you taken?

5. There is a rumor that there is a buying and selling of land in your *gandaa*. If there is, who did it and how?
6. What do you recommend for better and effective conservation of forests in your *gandaa?*

X. Interview Guide for Agricultural Development Agents (DA)

1. Is there destruction of forests in your area? What are the causes for the destruction of the forests? What have you done to minimize the problem?
2. Does the surrounding society have the tradition of conserving forests? To what extent is it used in modern conservation practices?
3. Are there settlers in your *gandaa*? What impact do they have on forests of the area?
4. What do you recommend to be done to minimize the destruction of forests?

XI. Interview Guide for Settlers

1. Where were you? When did you come?
2. What made you to leave your homeland?
3. Where have you settled now? Why have you destructed the natural forests of this area?
4. If you are given the chance to go back home, will you go?

XII. Interview Guide for Women

1. What role do woman have in traditional conservation forests in Guji society? What about in modern conservation practices?
2. What is their role in destruction of forests?
3. What do you recommend for better conservation of forests?

Appendix B

Observation Focal Points

- The status of forests (both protected and non protected)
- Agricultural fields
- Ritual areas
- Nursery site
- Settlement areas
- The settlement of people around forests
- Houses

Observations

- Observation to Biluu forest : 24 November 2010; 25 and 26 December 2011
- Observation to Anfarara forest: 19 November 2010 , November 25, 2010, December 2011; 27 December 2011
- Observation to Kocho forest : 23 November 2010; 15 December 2010
- Observation to Zambaba forest: 29 November 2010; 18 December 2010
- Observation to Shakkisoo: 10 December 2010; 29 December 2011
- Observation to Uraagaa: 30 and 31 December 2011;
- Observation to Me'ee Bokkoo: 14 November 2010; 20 December 2011

Appendix C

INTERVIEWEES PSEDONAMES, AGE AND DATE OF INTERVIEW

1. Abbaa gadaa and elders

1.1 Culluqqee Odaa Age 76, 20 November 2010

1.2 Jiloo Guyyee, age 68, 15 November 2010; 24 December 2011

1.3 Baatii Booruu, age 75, 17 November 2010

1.4 Barii Gololchaa, age 66, 21 November 2010; 22 December 2011

1.5 Dullacha Bultoo, age 60, 21 November 2010

1.6 Muuda Baallii, age 67, 27 December 2011

1.7 Didoo Booruu, age 70, 31 December 2011)

2. Community members around forests

2.1 Halakee Jaarraa age 73, 29 November 2010

2.2 Roobaa Halakee, age 20, 29 November 2010

2.3 Waaqo Basayee, age 40, 29 November 2010

2.4 Uturaa Soraa, age 38, 24 December 2010

2.5 Tamiruu Gadaa, age 48, November 25, 2010

2.6 Guyyoo Galgaloo, age 17, 26 December 2010

2.7 Araarsaa Margoo age 46, 16 December 2011

2.8 Roobaa Guyyoo age 18, 26 December 2011

2.9 Guyyoo Gadaa age 55, 26 December 2011

2.10 Tulluu Gaarii Age 81, 16 April 2012

2.11 Nigatu Jego: age 48, 19 November 2010

2.12 Jego Gobani age 36, 19 November 2010

2.13 Wariso Washe, age 65, 19 November 20107.

2.14 Muniiraa Aliyyee, age 35, 26 December 2011

2.15 Yaasin Muusa, age 52, 26 December 2011

2.16 Hayileyesuus Tasfaayee, age 41, 26 December 2011

2.17 Almaaz Abbebee, age 38, Sidama, 26 December 2011

2.18 Alii Muusaa, age 56, 26 December 2011

3 Students(18 November 2010)

3.1 Badhaatu Odaa, age 15, grade 6

3.2 Roobaa Halakee, age 14, grade 7

3.3 Guyyaatu Elemaa, age 13, grade 5

3.4 Isheetuu Dukkaalee, age 16, grade 8

4 Teachers, their age, grades in which they teach and date of interview

4.1 Guyyoo Dakkee, age 35, grade 6, 18 November 2011

4.2 Gumii Udessa, age 30, grade 7, 18 November 2011

4.3 Waree Gurrachaa, age 32, grade 5, November 2011

4.4 Yohaannis Eebbaa, age 46, grade 8, November 2011

5 Other government employees (Forest and Wildlife Enterprise and Culture and Tourism Office)

5.1 Bariisoo Tukkee, age 28, November 16, 2010; December 20, 2011

5.2 Jaarraa Gadaa, Age 43, 21 November 2010

5.3 Liiban Gimboo, age 32, 1 December 2010

5.4 Duuba Turee, age 40,5 December 2010

5.5 Husen Nageessoo, age 34, Nov- December, 2010

5.6 Halakee Galchuu, age 28, December 27, 2011

5.7 Nageessoo Molee, Age 55, 28 December 2011

5.8 Raggaasaa Ayyaanaa, age 43, 9 November 2010

5.9 Gamachuu Eebbisoo, age 40, 27 December 2011

6. Workers in *Gandaa*

6.1 Gadaa Idemaa, age 28, 26 December 2011

6.2 Bokkuu Adoolaa, age 25, 26 December 2011

7. Curriculum Experts (B.B.O)/working individually for private organizations

7.1 Dhugaasaa Gaarii age 48, 17 July 2011

7.2 Mootii Hirranaa age 52, 22 June 2011

7.3 Abdii Tuunee, age 40, 15 September 2011

8. Women interviewed

8.1 Sorsee Safaay: age 52, 24 December, 2011

8.2 Ganamee Tunaa: age 58, 24 December, 2011