



Environmental conservation under indigenous knowledge perspectives: the case of Abbo-Wonsho indigenous forest: Sidama Regional State in focus

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Abstract

The concept of sacred forest has long been interlinked with nature. Various cultural aspects such as religion, faith, and traditional belief bring people closer to nature and the natural environment. In this regard, the Abbo-Wonsho Sacred Forest (AWSF) in Sidama Regional State was investigated. The Sacred plants are protected communally with religious enthusiasm and connotations. These forest areas have been protected since 831 -2021 (almost for 1190 years) by indigenous communities using socio-cultural and religious practices. Trees in the Sacred area are prohibited from axe axed except when the wood is needed for the religious purposes. The purpose of this study, thus, was to explore the relevance of indigenous beliefs, cultural practices and traditional rules (Seera) in promoting environmental conservation. The study further addressed the cultural interconnection between plants and people. With regard to methodology, the study employed broadly a qualitative approach with an anthropological/ keeping human harmony and cultural and social diversity in a balanced design. To collect the required data, the researchers used key informant interviews, FGD, participant observation and descriptive ecological inventory. A total of 10 individuals were interviewed. Fifteen FGD members, a group of elders, adult and young dwellers, aging 50 years and above, 35-50, and 25-35 respectively who are currently living in Abbo-Wonsho and around were involved. They exchanged ideas, information, points of view and experiences with the researchers. Most of the discussions were conducted in Sidama language, called 'Sidamu Afoo'. Thematic analysis was carried out for qualitative information using NVivo 10. Findings related to the community connection to the forest demonstrate that indigenous knowledge and forest conservation were seen as one entity. Customary elders use a variety of practices and strategies to share indigenous ecological knowledge with community members. Some of the strategies include age group meetings, spiritual worships and traditional celebrations. Traditional law enforcement and land use plans were also mentioned as important means of protecting the forest. Findings related to the institutional management of the forest further revealed that several local and indigenous institutions that support community efforts in forest management.

Keywords: Abbo-Wonsho; Environmental Conservation; Indigenous Knowledge; Sacred forest; Sidama Regional State; Traditional beliefs.

1. INTRODUCTION

1.1. Background Of The Study

In today's world, people are so careful for the goods and services they get through business transactions and , marketing. They give due attention to materials which they obtain in paying monetary values. However, most of us, we Ethiopians, pay less attention to goods we are given freely from the nature. In this regard, literature entails us that there is inconsistent treatment of human-made capital and natural capital. Capital goods like machinery, tools and equipment are valued as productive capital and are written off against the value of production as they depreciate through time. However, no account is made for the depletion or degradation of natural resources. They are viewed as a 'free gift of nature'. In addition, no account is made for growth in natural capital (e.g. through tree planting and natural regeneration) (Zewude and Demissie, 2001).

The value of knowledge-practice-belief are complex practices of the indigenous people, in relation to relating to forest conservation, is rarely recognized in research. In the African context, according to Pilgrim et al., (2009) indigenous knowledge has long been overshadowed and thus ignored by western conservation knowledge. Consequently, much of this knowledge is fast disappearing in application to wildlife diversity conservation (Elias, 2018).

There is no doubt that education is an essential component of development and one of its preconditions. In the developed countries, environmental educations have been given a high importance and are placed in educational reform and innovation due to the influence of the natural environment in everyday life and culture. The people of Asia, for example, share common scriptures and folklore, which are replete with examples that show how their ancestors were environmentally conscious and advocated concepts of sustained usage of resources through many social customs, myths, taboos, traditions and religious beliefs (Steffen et al., 2004).



Figure 1: Sacred forest around Abbo-Wonsho, Sidama Regional State, Ethiopia.

In the same way, in Sidama Regional State, in Wonsho woreda, there are sacred places which have been managed by religious leaders. For example, as can be seen in the above picture, there is a man standing between the two seated researchers. He is one of the associate leaders in the sacred community and leads the overall religious forests. Totally, four people from different

religion groups reside in the compound. The compound is the place where every citizen around and wherever in the country get service of justice and free community verdict when things are going unjust and immoral.

If the environment, however, is “everything that surrounds us”, then its collapse should be a reason for serious alarm among all members of our society. As it is often said in sustainability circles, when the environment collapses, everything collapses because we all live in the same planet (earth) and are ultimately dependent on the natural fruits of the earth for life-support. Everyone has a stake in how elements of nature and natural systems are used and managed. When a specific natural resource or environmental issue or problem arises, individuals and groups often disagree to on the appropriate course of action to resolve the problem (Zewude & Demissie, 2001).

This attitude inquires the question why? Moreover, a more important question: “What can be done to shift this complacent mindset to the one which force forces people to develop a friendly approach to their environment, which is the source of their life and protect it from any sort of degradation?” The truth is that many of the activities on which our future health and prosperity depend are in an awful jeopardy: climate stability, the resilience and productivity of natural systems, the beauty of the natural world and biological diversity (ibid.).

Studies that have been conducted regarding environmental destruction agree that humans who can be, at same time, the main actor in the efforts to prevent the problems are the main actors in creating these problems (Kurn, 2012; Pilgrim et al., 2009; Townsend, P.K. 2013). Among theoretical considerations, environmental ethics is getting more attention to find a proper solution for extensive environmental degradation. Since environmental ethics is essentially based on intrinsic value and beliefs, religions have been getting more recognition to define the proper environmental ethics. When environmental ethics becomes a religious duty, it is inevitable that human will start to protect the environment as a response to a religious order. In this regard, Ban Ki-moon, UN Secretary-General said, “Protecting our environment is an urgent moral imperative and a sacred duty for all people of faith and people of conscience. “This shows that the religion could be served as a solution for the apparent environmental crisis (Brush, S.B. 1992).

Scholars in the humanities, social, physical and biological sciences have emphasized that environmental issues and problems are fundamentally interrelated with ethical issues and problems. Consequently, we hear more voices that alarm people to develop and follow an appropriate moral basis for dealing with the environment in order to solve environmental issues and problems. In all areas of our lives, the substance of our inner faith determines the living out or practice of our faith Brogger, J. (1986).

Indigenous knowledge comprises culturally mediated knowledge of the environment including types of plants and their medicinal uses, and established livelihood making strategies passed from generation through folklore, stories, music and other performances. In this aspect, this project is going to be carried out on indigenous knowledge and , its sustainability and explores the importance of indigenous its values and spirituality in providing guidance for sustainable living. Such principles and values encourage a spirit of harmony between people, their natural environments and their spiritual identities (Brush, S.B. 1992).

1.2. Statement of the Problem

In this study, it is hard to argue against the seriousness of the environmental crisis such as soil erosion, land degradation, pollution, water depletion, deforestation and other recurrent elements that endanger human beings and other living organisms that reside in the eco system. that our world has been facing. These situations have made the environmental challenge an absolute crisis to the level that threat to live.

Forests are vital to our Earth. Trees purify our air, filter our water, prevent erosion and act as a buffer against climate change. They offer a home to plants and animal species while also providing natural They are also important resources for human beings in providing them with food, medicine, fuel and timber. , food resources such as medicine, food, timber and fuel. However, long-term conservation of biodiversity of individual patches and evolutionary potential of species may be threatened by isolation, small sizes of tree species populations and disturbance, especially when considering climate change. Forest management interventions are essential and should be supported by environmental education and other forms of public engagement (UNEP, 2016).

Indigenous knowledge and culture, to mitigate the above problems, can significantly play a vital roles in controlling climate change, biodiversity and ecosystem change, pollution, deforestation, desertification and unsustainable land and water use, and other urgent issues identified in a shared vision by all nations in line with the 2030 Agenda for Sustainable Development (Ibid.).

Though Ethiopia, as a developing county, has been endowed with abundant indigenous plant resources and arable land . as a developing country, has been facing faced many environmental problems, ; on the other hand, In addition, the expansion of agricultural activities carried out non-scientifically have indiscriminately resulted in Increased agricultural activities have led to indiscriminate deforestation, soil compaction and erosion. Prior to these developmental efforts, the traditional Ethiopian communities had ways of utilizing natural resources without abusing the environment to an appreciable extent. This crisis highlights the interdependent or “ecological” character of our existence and, hence, the vital need for a radical transformation within the natural world. A more aware, caring and responsible attitude toward nature would now seem mandatory to safeguard our own survival in the near to medium term and more for the welfare of future generations (Teshome, D.S. (2009).

Considering the above facts, we, the researchers, focused focus on cultural and spiritual affiliations as a potential determinant of attitudes to climate change and climate change policy. This study, therefore, assessed the roles that traditional religion-based knowledge can play in the conservation and management of natural resources, especially forest resources in Sidama Regional State in southern Ethiopia. Some traditional religious practices in Sidama community like methods of devotion, initiation rites and invocation of the sacred powers of the supreme beings, how these spirits communicate their will to humans through the chief priests and how the spirits are agreed if provoking were examined (“Yilma, 2013).

The stronghold of Wonsho sacred forest rests wholly on the acknowledgment of psychic powers to any part of the natural and social environments. The conservation of the traditional forests from entrance, utilization and exploitation overtly or covertly encourages conservation and management of natural resources. Strictly forbidden areas associated with worship contribute to forest conservation and management in the research site. These indigenous knowledge

based traditional religious strategies for natural resource conservation and management have somehow been eroded by acculturation and enculturation of the Ethiopian communities in general and Sidama community in particular through the introduction of “civilization and modernization (ibid).

Local inhabitants in the region suggest that more urbanization, encroachment and modernization were the main causes for the loss of biodiversity. If they are not reforested, they inevitably end up with wastelands which are directly prone to soil erosion and desertification. Furthermore, the indigenous communities in the region have evolved ways of living in harmony with their environment through the traditional understanding of nature and natural phenomena. In Wonsho district, Sidama Region, especially among the research sites’ community (Abbo-Wonsho), cultural values are safeguarded through the use of traditional taboo practices (laws) and sanctions. These practices are used to preserve sacred groves for the ultimate aim of better management and conservation of the natural resources (Zerihun, 2014).

The practice of dedicating trees and forests to divinity is an antique ritual in the new research arena, Abbo-Wonsho for generations. Various cultural aspects such as religion, faith, traditional belief bring people closer to nature and the natural environment. In this regard, the floristic diversity of the Abbo-Wonsho sacred forest in Sidama Regional State of Southern Ethiopia is under investigation.

However, most of the researches did not assess aspects of deforestation and efforts of forest conservation in changing the peoples attitude in using the spiritual and cultural approaches using indigenous knowledge perspectives as per the investigators knowledge is concerned. Therefore, this study aims to fill the research gap of the above researchers, by identifying and assessing how the indigenous knowledge perspectives prepare generations to take care and protect the environmental crisis to pay due attention to avoid deforestation on the livelihoods of rural households in Abbo-Wonsho research setting.

This project, thus, aims to explore the inter-linkage between indigenous belief, culture and the environment, highlighting examples and insights, and providing diverse communities, spiritual or secular outlook with a deeper understanding of their roles and responsibilities towards a shared vision of human destiny.

1.3. Objectives of the Study

1.3.1. General Objective

The general objective of this study was to explore indigenous knowledge perspectives and practices towards environmental conservations and thereby to encourage local people to revitalize the local experience.

1.3.2. Specific Objectives

The specific objectives were to:

- identify the type of indigenous knowledge that the people in research site are experiencing in conserving the natural and social environment;
- investigate the attitude of the dwellers in the research site towards using indigenous

knowledge towards environmental conservations;

- examine the knowledge gaps that could be filled to increase forest handling, if any
- To provide baseline data for further study on indigenous forest.

1.3.3. Significance of the Study

The research is significant in that it contributes its share to the debate on the emerging issue of bio-cultural diversity conservation and the role sacred natural sites such as sacred forests under the traditional managements regimes play in conserving both biological and cultural diversity. The findings might be of interest to academics, policy makers and the public in general in the areas of community forestry, culture protected forest management, medicinal plants and their knowledge.

Like other societies, the Sidama community has its own native knowledge which has been passing from old generations to the new generation that should never be ignored but must be taken in to consideration in at all community level. The study also tried to inform academicians to give due attention to these areas and invite to hold conduct better and intensive investigations on of these indigenous knowledge and share this crucial experiences with other local or international communities. in academic studies and purposes.

2. MATERIALS AND METHODS

2.1. The Study Area and Communities

The Sidama are Cushitic language speaking people of southwest Ethiopia in the horn of Africa ([Braukämper, 1978](#); [Hamer, 2002](#)) and the most populous region of Ethiopia, with estimated population size between 3 and 4.5 million ([CSA, 2013](#)). The ethnic group is also one among the various ethnic groups inhabiting in southern part of the country. The newly formed tenth region in the country, Sidama Regional State, has distinct socio-cultural life styles that are mediated by indigenous knowledge systems built up through generations.

The defining attributes of Sidama Regional State cultural identity and indigenous institutions were partly lost following the incorporation of the locality into the empire during the expansion of the Ethiopian State in the 19th and 20th centuries ([Braukämper, 1978](#)). The location of Sidama Regional State is between Lake Hawassa in the north, Dilla town in the South, Lake Abbaya in the south west, the River Bilate in the west and various Zones of Oromia Region in the east and south east.

The Sidama land, referred to as the Sidama Regional State, is located some 275 km southwest of Addis Ababa, the national capital. The region has a total land area of 7200 km², characterized by varieties of topographic, climatic and agro-ecological features. The Great East African Rift Valley divides the land into two parts, the western lowlands and eastern highlands. The livelihood of the local people mainly depends on subsistent farming, in which livestock husbandry and crop productions play a major role. The climate of the study site is characterized by wet seasons that mostly occur from July to September (long rainy season), locally known as kiremt, and February to May (short rainy season), locally known as belg. There is a long dry period from the end of September to February, and a short dry spell in June ([Zerihun, 2014](#)).

The altitude ranges from 500 masl in the west to 3,500 masl in the eastern highlands with mean annual temperature and rainfall of 10 - 27°C and 800 - 1,600 ml respectively (Yilma, 2013). The land is home to many SNS, where various tree species and other biodiversity are conserved. Further, a traditional agro-forestry supports an extractive form of conservation of otherwise endangered native tree species and diverse flora (Zebene, 2003). Sacred groves are important components of the Sidama Regional State topographic, bicultural and livelihood landscape, enabling Conservation of trees and ancestral institutions. The social-cultural institutions and practices supporting maintenance of sacred sites have existed for centuries, defying the onslaughts of various militating factors.



Figure 2: Location of Sidama Regional State, Ethiopia Source (Moges, Dagnachew, &Yimer, 2013).

2.2. Methodology

This research article is a collation and synthesis of thematic issues drawn from a set of previous studies on Sidama community. As the main research goal was to document and describe cultural and ethno historical phenomena, the study extraordinarily included: collaborative ethnography, documentary analysis; visual documentation; natural and cultural heritages; and fieldwork involving observations, key informant interviews, group discussions and genealogical studies.

2.3. Research Design

For this study, a mixed-method design was employed to gather and analyze primary and secondary data. Questionnaires were administered to collect both qualitative and quantitative data. Qualitative data were also extracted from people in the research site in general and knowledgeable community leaders as the key informants through FGD in particular.

2.4. Sample Size and Sampling Technique

Purposive sampling technique was used in selecting the respondents with expertise in the area that could best meet the purpose of the study. This helped the researcher to examine how much the local people in the communities give emphasis to the Conservation of the environment in light of the existing indigenous knowledge principles. Accordingly, five persons from each

of the three age groups, male and female elders, and youth, totally 15 participants who are thought to have great knowledge on the indigenous knowledge as well as familiar with the existing reality of their respective cultural beliefs participated.

2.5. Data Analysis

Data were managed and analyzed using NVivo 10 and SPSS 25; the former was employed for the qualitative data. Data recorded on digital voice recorders were first transcribed using a simple transcription utility known as Express SCRIBE, available as a freeware. The transcribed data were edited and cleaned for consistency and completeness and then entered into NVivo 10. The data were organized into individual interviews, focus groups, observation and field notes, inventory and surveys, secondary and picture sources.

NVivo analysis of qualitative data involved thematic analysis through coding. The data were coded using the NVivo tool of Nodes to gather all data evidences evidence under coding categories. The categories were structured within the framework of core research objectives. Core categories grow from emerging themes, and these further developed into data chapters through memo writing unifying integrative themes evolved from careful scrutiny, amalgamation and synthesis of the thematic categories.

Equally important was that adopting the analytical approach of looking for dominant patterns, classification-worthy typologies, comparison of cases, the interplay of factors and more subtle explanation for challenging existing views (Richards, 2009). This helped to find out, for instance, emically and ethically-based typologies of sacred landscapes; dominant views and assumptions with regards to, for example, ancestral belief and ritual practices, sacred forests or the impact of modern religions and how these stand the test of facts buried within a complex interplay of factors.

Salient coding categories were emerged from meta-analysis of NVivo 'Nodes' centring around three major themes, constituting eight sub themes: (a) biophysical characteristics of sacred forest sites and ethno-botanical traditions (geographic profile, ethno-historical and anthropological foundations), (b) consequences of maintenance of sacred forests for local biodiversity, culture, livelihood, wellbeing and environment and (c) conservation state, threats and governance framework.

2.6. Ethical Consideration

In this study, appropriate steps were taken to meet ethical requirements. First, to obtain permission to conduct the study, an official letter of cooperation collaboration letter was written taken from the Dean Office of College of Social Sciences and Humanities at Hawassa University concerned administrative bodies of HU Social Science faculty head. Second, consent form was prepared and distributed to enable the participants of this study to express their willingness to participate in the study. This was expected to be practicable because the subjects of the study were briefed about the purpose of the study, assured that all the inquiries and responses were kept confidential. These could not affect their status and informed that they could stop anywhere in the study processes when they feel discomfort.

3. PRESENTATION OF RESULTS

3.1. Distribution and Types of Sacred Natural Site in Sidama Wonsho

A typology of Abbo-Wonsho Sacred Site (AWSS) in the study community may be a useful tool to conceptualize and analyze the nature, current status and geographical distributions of sacred sites. The sacred research site, which is located in at Sidama Regional State, is a cultural landscape rather than virgin wilderness. It is the result of conscious human (i.e. the custodian communities) actions of validating, defining, managing and protecting forests. Some of the larger sacred forests such as Abbo-Wonsho Sacred Forest, as shown in fig.3 below, a 320 hectare forest well known throughout the Sidama land and in the region as a whole, were initially not planted or cultivated in any conscious planning (Negash, L. 2010; Yilma, 2013; Zerihun, 2014). The local community in the region, according to the study made, believe that such sacred forests just emerged by an action of divine working and founding ancestors died and were buried. Such local beliefs are anthropologically relevant, though not empirically, as they form the basis for traditional governance and “spirit-policing” of sacred forests.



Figure 3: A view of AWSF from an edge of Bokaso Town, observation, August 2012 (Source: ZerihunDoda,2014).

3.1.1. Religious Membership and Preservation of Trees for Non-profit Purposes

Supporters of the SAR were more likely to own and maintain a sacred site. Respondents were asked whether they preserved a grove for non-economic purposes and adherents of ancestral religion were found, quite expectedly, more likely to engage in non-social driven maintenance of trees. Practice of ancestral rituals and attitudes towards such are also closely related to religious adherence. As a matter of principle and observation, ancestral religion essentially coheres in such rituals. Attitudes and practices of respondents reveal that differences between

various religious groups might be indistinct. Reported behavioural and attitudinal positions and actual practices might also differ.

Table 1: Religious membership & Preservation of trees for non-profit purposes among surveyed households, Wonsho

No	Religious Affiliation	Preservation of Trees for Non-profit Purpose			
		Yes		No	
		Count	% within Religious Affiliation	Count	% within Religious Affiliation
1	Ethiopian Orthodox	21	44.23%	40	44.94%
2	Protestant	16	30.76%	35	39.32%
3	Ancestral Religion	10	19.23%	8	8.98%
4	Muslim	3	5.76%	6	6.74%
Total		52	100%	89	100%

The data in the above table show the religion of the households of the target population and their effort in preserving trees for non-profit and for profit purposes at the research site (Wonsho). The focus is to secure information about the extent to which the religions around the research site, namely: Protestant, Sidama Ancestral Religion, Ethiopian Orthodox, and Muslim have affiliation with the responsibility of preserving the forest. As can be observed from the data, the Ethiopian Orthodox religion followers 21 (44.23%), agreed that they participate in preservation of trees for profit Purpose, and 40 (44.94%) confirmed that they did not give attention to the profit of the forest. When we see the participation of the protestant religion followers, 16(30.76%) of them had active participation in preserving the forest as it has a vital role in their daily activities. Contrary to the above fact, 35 (39.32%) of the respondents did not give emphasis to the conservation.

Regarding item 3, the followers of the ancestral religion who participated in the Preservation of trees for non-profit Purpose were 10 (19.23%) and used the sacred forest for profit making and lively-hood. The other 8 (8.98%), however, did not participate in the protection process. In further analysis, we see that religions in the research site have a milestone contribution in to preserving the sacred forests. The main reason might be their spiritual belief that accepts that trees are one of the respected creatures which have been created by God and should never be destroyed without his will. In support of the preceding argument, literature entails that amidst the resilience of sacred forests and ancestral traditions, there exist threats. These threats affect both biodiversity and cultural diversity. They emanate from both internal and external processes and are both natural and anthropogenic. Discussion with local people and reviews of local archives show eroding factors, especially external ones, have been intensifying since the 1890s, but momentum has increased over the past 50–60 years, with salient drivers being the introduction of cash economy, modern religions, modern education, misguided state policies, rapid population growth, and resultant socio-economic pressures(Juhé-Beaulaton,2005).

Since the appearance of new religions from the second half of the 19th century, traditional religions have been progressively abandoned; it has impacts on sacred groves. As explained by Juhé-Beaulaton (ibid: 3): With the decreasing interest for the new Protestantism religion, the ancestral rules are less and less respected. People are not afraid anymore to enter the sacred forests and to cut trees, which entails a lower protection of sacred forests. Moreover, the sacred religion followers and sacred chiefs are getting older; in many villages the guardian is deceased, provoking anarchic penetrations in the sacred groves. The majority of the younger generations do not have the same vision and do not believe in polytheist religion. As literature entails, the

death of a divinity priest can lead to the neglecting of the sacred forest by the population and the clearing wood (Agbo & Sokpon, 1998; Tchoukpeni, 1995).

Item 4, among religious affiliation the study made up on were Muslim religion followers. As it is indicated above table 2, 3 (5.76%) counted as preserved sacred trees for non-profit Purpose. However, 6 (6.74%) followers were counted as using sacred grove trees for profit Purpose.

Changes in the society's structure and composition as well as economic status and religious values, in this regard, pose another challenge. Across the country, Ethiopia, ancestral religion and culture has have been replaced by Christianity. This is also true in at Sidama Regional State (SRS) as the informant expressed the present situations in the research site. In present SRS, increasing urbanization has caused strength of religious and cultural values, often leading to violation of sacred trees. In addition, Human population increase and cultural dynamics have all been labelled culprits in the deterioration of sacred groves (Desissa, 2009; Desissa and Grandson, 2008; Zerihun, 2014).

The same community who had been documented to deliberately conserve the Abbo-Wonsho Sacred forest now showed indifference towards their sustainable use (ibid.). According to the research conducted in the same issues, attitudes and practices of the respondents reveal that differences between various religious groups, Ethiopian Orthodox, Protestant, Ancestral Religion, and Muslim might be blurred. Reported behavioural and attitudinal positions and actual practices might also differ (Hoteso, 1990; Hameso, 1998; Hamer, 2002; Tekle et al., 2012; Hameso, 2014).

3.2. Focus Group Discussion (FGD)

Fifteen (15 FGD members), a group of elders, adult and young aged dwellers in Abbo-Wonsho and around who are aged 50 years and above, 35-50, and 25-35 respectively were the ones who involved in providing their opinions on their indigenous knowledge to the researchers. They exchanged ideas, information, points of view and experiences with the researchers. The dialogue was conducted among the elders themselves and with the researchers, as well. This facilitated the sharing of knowledge and experiences between FGD discussants and researchers.

Related to the idea of 'trees as life' is the notion that considers sacred groves and trees as wealth. "Haqujirote'e!" is used to signify this, a model of natural and social capital that coheres in trees. In During our conversations on natural resources and wealth, the respect and values the community provides to the forest forests are were at the forefront. In this regard, a number of sayings came out from FGD on how the dwellers in the research area value sacred sites and woody trees. Trees, notably native ones, are regarded as 'endurance for life' itself: "Haquheshote'e!"

One of the Ganas (supreme persons) who has knowledge on Abbo-Wonsho sacred forest narrated that the Abbo-Wonsho forest had already been there present when people settled around it with their fetishes. The sacredness of the forest can be associated with the settlement of a new community in the area, notably, during the tribal mistreatment of the sacred; many community members were died and many of them generated many migrations. Those who treated the goddess and gods as well as the sacred groves found a refuge in forests for the community and the divinity. The forest became sacred, as the dwellers around believe, due to their conservation for the forest and the gods. Finally, some forests became sacred after

the appearance of a divinity. Appearance is meant the accomplishment of a miracle or the appearance of a spirit. In this case, the forest had already been there when the divinity was discovered in the forest or in the surroundings. Sacred forest constitutes a storehouse of a refugee for wildlife; they form a kind of botanical garden where the traditional healers can find rare medicinal plants, often essential for their pharmacopoeia.

The discussants on the raised issue, the roles of sacred forest in their environment, forwarded that Abbo-Wonsho Ritual Forests (AWRF) provide medicinal value for people around the community. Sacred groves constitute a repository of wildlife; they form a kind of botanical garden where the traditional healers can find rare medicinal plants, often essential for their traditional healing. The FGD discussants extended their ideas saying, AWRF plays a role in soil and water conservation by reducing erosion and salinity, and by providing rich humus. They are often linked with reservoirs, ponds, springs or streams; they can be a micro watershed. Indeed, peasants believe, with justifications, that forests bring rain. AWRF can be equipped with tourism tracks and provides some revenues for the local communities.

Abbo-Wonsho Sacred Forest plays an important role for the management of natural resources and the biodiversity conservation. The site attracts more and more attention of scientists and to nature conservationists. We can identify two level of Conservation of sacred forests. The rules and laws made by humans and imposed by them, and the perceived direct Conservation and punishment by the spirits. First, divinities, spirits or gods, inhabit forests. Due to this fact, forests are protected to preserve the habitat of the spirits and therefore keep the protective gods nearby the community. In some cases, the forest also houses the spirits of the ancestors. Secondly, the spirits themselves can protect the forests and punish people that do not respect the rules.

Local residents narrated that, "People should not enter Abbo-Wonsho forest without special permission from the appropriate traditional religious leader. AWSF is said to be protected by a 'big goddess'. People who enter the forest without permission or cut trees may be cursed by the spirit and then might die, get lost, or become insane." The cutting or the gathering of wood, food crops and medicinal plants is strictly regulated. Farming in or near a sacred forest is forbidden. If people infringe this rule, it is said to result in illness for their family.

One of the oldest people among the elders narrated the legend of Abbo-Wonsho sacred forest, "One day, migrants needed to hide themselves in the forest. They found refugees in a forest where they found a pile of sand, which was moving and making mystic noises, as if there was something inside. They immediately knew that it was the Abbo, later named Abbo-Wonsho (king of the forest). The visitors decided to bring Abbo home."

Other informants thought that Abbo and people could not live together explain why people moved to the other riverside leaving Abbo alone in the forest. The forest is now sacred and belongs to the descendants (17 generations) of the first migrants of the Abbo community. Danchuma Abbo-Wonsho, which means the divine strength, is the power that can make good and evil. Then, by abuse of language, the name became Abbo-Wonsho, means something full of heavy or valuable.

As presented above, sacred forests are part of the history of traditional Sidama communities. People believe that sacred forests have magical powers and protect the nearby communities. Consequently, Abbo-Wonsho sacred forests are respected and sometimes people fear them. The historical and spiritual values attached to sacred forests entail the high level of indigenous knowledge of the local community in conserving their natural resources. their conservation by local communities.

However, the sacred forest is under influence of the ‘modern civilization’ and environmental dynamisms. Discussants particularly highlighted population growth around the study site was considered as one of the factors that decrease the forest size. In our observations across the sacred forest, there was evidence of locals engaging in encroachment activities (Hoteso, 1990; Hameso, 1998; Tekile et al., 2012).



Figure 3: Community members in different age groups discussing in the sacred forest, 27 May, 2020.

Cultivation near sacred sites was also common experience as the discussant expressed and our observation proved the same. as our observations was concerned. There was a general understanding among the community that, for example, the original size of the Abbo-Wonsho Sacred Forest site was very large compared to the current size. Population growth was a key driver leading to shrinking of the land size of the sacred places. Agricultural activities and other socio-economic and developmental needs have completely transformed many of the previous sacred forest areas in the studied communities.

3.3. Sacred Forests Management

The first research question aimed at searching for answers to as to how the local communities’ participate in managing the sacred forests. The sacred forests are not completely closed and forbidden for community members. Similarly, the local population graze their animals whenever there are enough grasses for their cattle in and around the Abbo-Wonsho Forest with due recognition of the chief of the sacred forest. To understand how local communities manage sacred forests, this section presents the structure of sacred forests, the forests managers, the traditional rules and the sanctions if they are infringed.

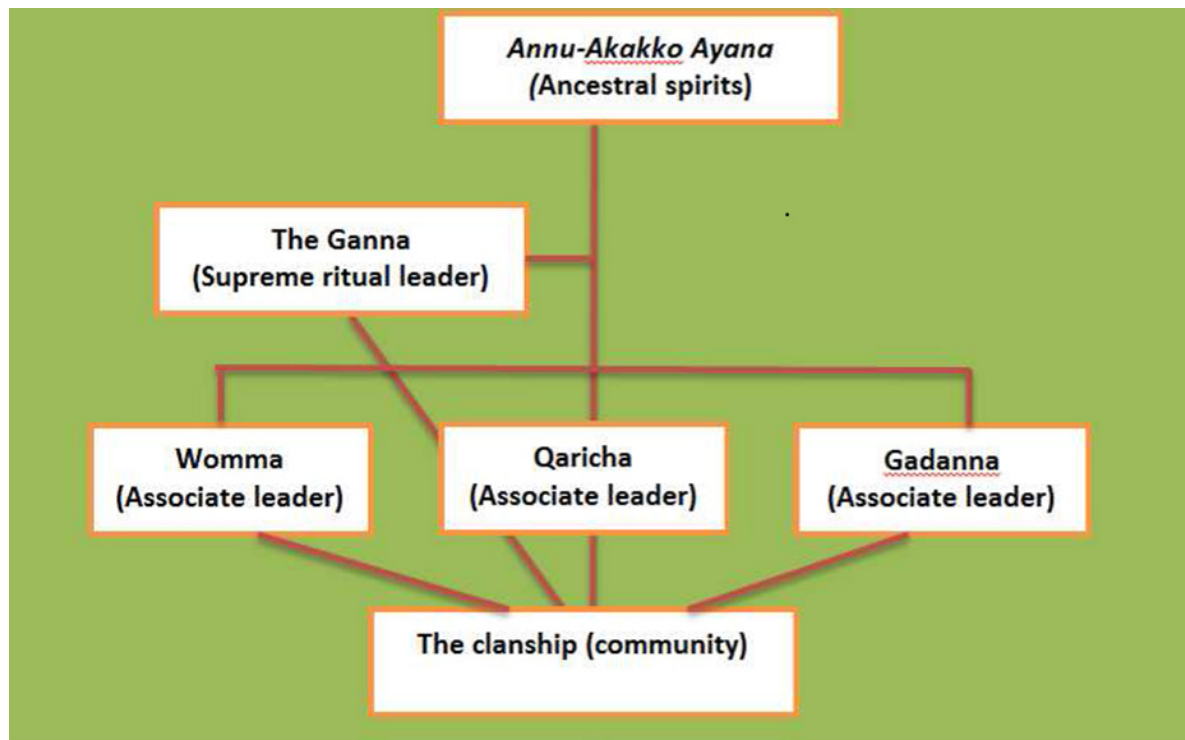


Fig. 5: Structure of ritual governance of sacred forests, Wonsho, Ethiopia (Source: Zerihun, 2014).

The associate leaders, Ganna, can also directly communicate with ancestors, just like any faithful, ritually able-aged member of the clan although not with equal intensity or frequency (Hamer, 1976). The Ganna is the supreme person responsible for managing the sacred site ritual affairs and the forest itself. In so doing, it receives guidance from the ancestors, particularly from Abbo and support from his associates and the community at large. There are divergent views as to whether the structure is really hierarchical or the four positions are equal in authority. According to this governance and leadership arrangement, the Ganna is considered the highest in rank of the qaddo (the four ritual leaders) whose roles are more or less the same but with some particularity to each one (Hameso, 1998; Tekle et al., 2012).

According to the interview made and personal field observations, it is possible to draw a general structure of sacred forest. In most cases, there is only one path to enter. The small path is amid the forest with dead leaves and branches from left and right sides. The main way that leads to the inside of the forest may also be identified by two types of signs. The first path leads to the centre of the forest where the sacred community meet and make ceremonies. The central place is more or less a large area depending on the sacred groves, but it is always cleared and constitutes the spiritual power centre. For all sacred forests, people say that the forest spirits clean and sweep themselves in the area. Even nobody planted trees in place of old dead trees. The central zone, which is not necessarily the middle of the forest, contains representations or fetishes of the main chief locally called (Ganna) inhabiting the forest (Zerihun, 2014; Tekle et al., 2012; Hameso, 2014).

3.4. Sacred Forest Administrators

According to the people participants interviewed, the sacred chief has a say in decisions concerning the sacred groves and has to approve informal decisions such as cutting trees or gathering wood for special purpose. The local 'king' gives the authorization after consultation

of the mayor. The local king (Ganna) is also considered as a formal authority that can take decisions concerning the sacred groves.

In any cases, the sacred forest managers are the fetish chief and the followers, the family or community chiefs, the elders and all the members of the community. They take decisions together by organizing community meetings; women also attend the meetings, except for night meetings. The sacred groves often have a guard who protects the forest and prevents people from cutting trees. In some cases, he can fine the offenders and guides people that want to visit the sacred forest. One of the forest managers gives the authorization for the collection of medicinal plants, wood and food.

“Sacred forests have a participatory management, even if there is always a main responsible; this person cannot make decisions alone; the guard always has to discuss with assistants to know how to manage and protect the forest. As well, the sanctions are decided jointly”, as the local king (Ganna) said. In summary, sacred forests are essentially managed informally by local communities. The local formal authorities have little to say about sacred forests management. The people responsible for managing the forest activities are selected after Ganna consultation. The religious chiefs and the family chiefs then take the decisions concerning sacred forests. The community at large participates in the decision-making for important choices.

On the other hand, prohibition of planting new trees at sacred forests is another core principle. An implicit belief in “sacred forests take care of themselves through natural and spiritual processes” seems to be taken for granted. It is believed that the ancestors preside over the affairs of the additions of new trees, growth patterns and protection of the trees. This may be interpreted as an allusion to the inherent nature of sacred groves as dynamic systems. Any human planting of trees in sacred forests has been unacceptable and is tantamount to desecrating the ancestors. Management in the sense of digging the soil, weeding, and pruning, removing aged and diseased trees and planting new ones have been traditionally tabooed and generally reserved for other contexts (Yirdaw, 2001).

3.5. Conservation of Medicinal and Aromatic Plants

Plants (both wild and cultivated) are essential to alleviate human health problems and food insecurity especially in the developing world. In the same situation, a variety of medicinal plants are found in Abbo-Wonsho Sacred Forests, as research team members visited the research site at Abbo-Wonsho. Each medicinal plant, as field visits witnessed, has traditional properties that need to be scientifically proven, too; nevertheless, Zerihun (2014) in his PhD. dissertation listed some of medicinal plants of Abbo-Wonsho sacred forest and tested their virtues.

Understanding the current herbal medicinal awareness and its uses among herbalists, young persons, and the community at large might help to witness indicate the state of herbal medicine. While our Our informants were drawn from the environment, the surrounding of the forest with particular attention to the young and the herbalists who young persons and herbalists were important sources of information during the fieldwork/visit.



Fig.6: The research team visiting the medicinal plant sites

Maintenance of sacred forest sites is, therefore, an important factor in this in-situ learning, sharing and transmission of herbal medicinal knowledge in Wonsho. Living in a botanically rich rural environment, especially with better opportunities to learn of tradition-imbued native trees and having sacred forest site as all-rounded epicentre of community life deserves credit for such relatively strong knowledge.

Broadly speaking, the community of Abbo-Wonsho sees its sacred forests as important havens for hundreds of plants, from the humblest hayso (common grass or herb) to the graceful dagucho (*P. falcatus*). In view of this, it is perhaps understandable that Abbo-Wonsho Sacred Forests are repositories for the preservation of medicinal plants (ibid.).

Forty-two medicinal trees and shrub species were used to treat 34 human diseases and 15 livestock diseases, according to the field observations, and farm inventories. The most frequently used part was leaves. The most widely used method of remedy preparation is crushing. The common route of administration is oral which is applied through drinking.

The Abbo-Wonsho Sacred Forest (AWSF) is believed to be a treasure house of medicinal and aromatic plants. Though most of the indigenous people are residing near the groves, they have carefully nurtured their traditional customs, rituals, ceremonies and a way of forest life through folk beliefs with great vigour (Hamer, 2002). In this regard, there is a need for Conservation

Table 2. “Disappearing” or “lost” medicinal trees found at sacred forests, interviews and focus group discussions, Sidama, Ethiopia, 2012

Local name	Scientific name	Reason for decline
<i>Dongicho</i>	<i>Prunus africana</i>	The most over-utilized medicinally through de-barking for dealing with “hammessa”, a commonly perceived infantile ailment
<i>Gidincho</i>	<i>Ehretia cymosa</i>	A native woody tree overutilized as a popular medicinal source and other livelihood pressures
<i>Bulancho</i>	<i>Withania somnifera</i>	A major medicinal plant, reported as over utilized
<i>Godicho</i>	<i>Fagaropsis angolensis</i>	Livelihood overutilization
<i>Gatame</i>	<i>Commiphora schimperi</i>	Livelihood overutilization
<i>Duwancho</i>	<i>Syzygium guineense</i>	Livelihood overutilization (esp. charcoal, construction material needs, etc.)
<i>Ejersa</i>	<i>Olea europae</i>	Medicinal, firewood, and construction use
<i>Daguchio</i>	<i>Podocarpus falcatus</i>	Declining outside of sacred sites due to overutilization
<i>Nolle</i>	<i>Achyranthes aspera</i>	Medicinal and livelihood overutilization

Regional
es. Thus,
with the

Source: Zerihun D. Doffana, 2012-2013, Bokaso, Ethiopia.

Plants at such places may be considered as great natural resources which are conserved intentionally by some households. conscious or intentional conservation by some households. Some scattered cases of conserving medicinal plants at household level were documented during fieldwork; a number of local informants, whose back- and front-yards were surveyed for plant/tree species, reported that they had explicitly planted some species for medicinal purposes (ibid.).

The case of some trees that were locally reported as “fast disappearing” or “already lost” at other places being conserved at sacred forests is significant. It is generally the view of the community that represented through interviews and household surveys, those sacred forests serve as havens for such trees. Through overutilization for medicinal and other livelihood needs, some woody native trees such as dongicho (*P. africana*) were reported as now found only in AWSF. Some other native species of medicinal importance were also believed to be found only at such places. In the household survey, randomly selected 21 household heads (76%) reported that sacred forests were sole havens for many medicinal plants.

In general, informants in at Wonsho, Bokasa, know only one or two medicinal plants and they used to gather these specific plants in case of needs. Parents transmit the knowledge about medicinal plants to their children. Traditional healers know more medicinal plants, but some of the plants are secret and their virtues are only passed down from healers to healers.

3.6. Herbal Medicine in Abbo-Wonsho Sacred Forest

Understanding the role of sacred forest sites in conserving medicinal plants and their associated botanical knowledge requires a brief description of the context and state of herbal medicine. The traditional medicinal healers (herbalists), at the time of the fieldwork, exist in some localities catering for some health and para-medical needs of the community, especially those aspects that are perceived as not effectively handled by modern medicine. According to focus group discussants, certain factors encourage recourse to herbal medicine such as those lacked access to modern facilities due to geographical barriers, lack of money or other socio-cultural barriers in the community.

Informants and FGD discussants explained unanimously that all plants have medicinal values though Shimadamurro is extraordinarily the most important medical plant of all others. Shimadamurro include herbs, climbers, shrubs, grass and other small plants. These were invariably touted by informants as highly medicinal.

Of about 86 plant species, that were identified during the first round transect walk at Abbo-Wonsho sacred forest with three herbalists, more than half were such plants and most were understood as medicinal. The most widely noted use of this category of plants was medicinal, followed by their importance as firewood, animal fodder and occasionally wild food sources. Practicing herbalists noted that the most commonly used source of decoctions in their pharmacopeia come from the leaves, seeds and roots of these plants. The widely known and used medicinal plants were generally regarded as important for health problems that did not require specialist skills and complex processing procedures according to Zerihun, D., (2014).

There were a number of species that were known only by practicing herbalists. The medicinal identity and efficacy of such plants were often claimed as revealed to the practitioners through dreams, which also coincide with what they claim as the origin of their skill. The revelations would include specific names of plants, their efficacy in treating specific human and veterinary health problems, where they would be harvested from, parts of the trees to be sourced, and decoction and administration procedures, etc.

The supernatural, curative, or medicinal properties of many local trees and other plants,—particularly climber, grassy and shrub groups, from the expert herbalist's point of view, are recognized only by them and not by the common people. The identification and procuring of these, especially those from wild, obscure sources, requires specialist knowledge and hard work. The medicinal identity and efficacy of such trees were often claimed as revealed to the practitioners through dreams, which also coincide with what they claim as the origin of their skill. From the experts' point of view, some tree species whose medicinal properties were unknown by the general community were the most widely used sources of herbal decoctions (Moges, Dagnachew, & Yimer, 2013). Classifying medicinal plants based on the types of health and paramedical problems they are employed to cure is also important. Some plants are suited for generic and common health problems.

Informants remarked that such plant categories are being employed for Dingentenga. Dingentenga, a generic term for a group of illnesses that may occur both in humans and animals and characterized by a set of symptoms including diarrhoea, vomiting, tummy pain, head ache, fever, etc. These plants are generally readily available and accessible in the backyards without the need for specialist trekking to the wild forests and are used with minimal specialist herbal knowledge. For example, cikicho (*B. antidysentrica*), binjile (*C. abyssinica* Jaub.), dongicho (*Prunusafricana*) and wajobardaffe (*Eucalyptusglobulus*) and many other herbs belong to this category.

Local name	Scientific name	Description	Commonly treated health problem
Gikicho	<i>Justicia schimperiana</i>	Herb, native	Decoction from leaves drank for treating dingeteñu (sudden and emergency health problem causing diarrhea and vomiting; stomach ache)
Binjile	<i>Clusia abyssinica</i>	Herb, native	Decoction from leaves drank for treating woranjo, a cow disease and rare, liver disease
Dongicho	<i>Prunus africana</i>	Tree, native	Decoction from bark for treating hamnessa, a commonly perceived infant tummy problem; considered as a necessary “vaccination” for infants.
Dadako	<i>Hagenia abyssinica</i>	Tree, native	Decoction from berry and leaves for treating worm infestation <i>hamashe</i> (‘tapeworm’)
Godicho	<i>Fagaropsis angolensis</i>	Tree, native	Berry eaten for treating dingeteñu
Haranjicho	<i>Phytolacca dodecandra</i>	Shrub, native	Leaves used as a detergent; decoction for leaves for treating dingeteñu
He'echo	<i>Vernonia amygdalina</i>	Tree, native	Decoction from leaves drank for stomach aches
Gobacho	<i>Maesa lanceolata</i>	Tree, native	Decoction drank for stomach ache; decoction rubbed for treating foot sores, wounds, etc.
Garbicho	<i>Ekebergia capensis</i>	Tree, native	Cattle disease; dingeteñu
wajo bardaffe	<i>Eucalyptus globules</i>	Tree, exotic	Decoction from leaves drank for stomach aches; leaves smoked for fumigating home

Source: Zerihun (2014)

3.7. Challenge and Threats

The FGD participants’ responses to the discussion questions were carefully recorded and coded by the researcher later. The key words and phrases were categorized into certain groups. The aim of the coding was for two reasons, (1) central theme and (2) general sentiment (positive, negative, neutral, & suggestion).

Besides, some potential problems which could hamper traditional religions, four main categories have been described below: a) the erosion of traditional religions, (b) the age of young generation (c) population explosion (d) the economic returns due to livelihoods. These barriers are listed in order of the relative frequency in which they were mentioned in the group discussion.

The erosion of traditional religions and the arrival of new ones, Protestantism, and extremist orthodox religion followers, and others were part of potential problems raised during the FGD.

In addition, age is another factor that can threaten sacred forests. There is an erosion of traditional religious knowledge and interest among the young generation. Moreover, the generation of persons responsible of the forests are getting old and progressively passing away. For example, the Abbo-Wonsho supreme leader, whom we interviewed in FGD in this study, was passed away due to chronic blood pressure in November, 2020.

Due to population explosion and various developmental activities, especially, forests are destroyed due to livelihood. Climate variability, the transformation of livelihoods and lifestyles, ‘modernization’, cultural dynamism and disappearing systems of knowledge, as well as pressure to provide for basic needs, are also the expected dangers on the study community.

More than ever, planting indigenous trees which used to cultivate for cultural identity have been changed due to different vital reasons. Especially the economic returns from woody tree

like chat and Eucalyptus (Bahirzaf trees) are taken as a main factor for the land use change from diversified and ecologically complex system to mono-cropping system in the society.

Several major threats of sacred forest could be inventoried based on the literature. What happened and used as a base to compare with what actually occurred in Abbo-Wonsho was one of the most mentioned reasons for sacred forest degradations. Age, in addition, is another factor that can threaten sacred forests. There is an erosion of traditional religious knowledge and interest among the young generation. Young people are not afraid of the traditional taboos and degrade sacred forests (Wadley and Colfer, 2004; Byers et al., 2001).

Moreover, the generation of persons the responsible individuals, who could have provided us with relevant and sufficient information on the forest under investigation are getting old and others passed away. for the conversation of the forests is getting old and progressively passing away. For example, the Abbo-Wonsho supreme leader, who was in FGD in this study passed away due to chronic blood pressure in November, 2020. Had he been treated early, he would not have been died. If young people do not take an interest in traditional management, sacred forests will probably disappear. They may have much less links with the sacred forests and do not necessarily respect the traditions.

As already explained, population growth can have important consequences on natural resources. In short, due to population explosion and various developmental activities, according to the previous studies manifested, forests are destroyed due to livelihood (Kumo, 2009a; Kumo, 2009b). The demographic pressure generates a modification of the land use.

3.8. Planting Indigenous Tree

Planting indigenous trees may help to reverse the accelerated loss of natural forests Berisso, T. (1995). The indigenous (local) trees have several important biological attributes over exotic trees which are imported from abroad. The presence of indigenous tree in natural stands in a given area, they can give a clue to undertake possible plantation activities (Evans, 1992). These species are adapted to the environment and are already integral part of an ecological niche (Negash, 2010). In addition, they are less susceptible to serious damage from diseases and pests and they are ecologically more valuable than exotics for the conservation of native flora and fauna as well as for the conservation of water (Evans, 1992). However, the situation in research site in particular are being changed planting exotic, eucalyptus trees for several reasons.

3.8.1. Eucalyptus (Bahirzaf) Plantation

Eucalyptus is an ever green flowering tree and a shrub which belongs to the family Myrtaceae. Mesay Hailu Gangisso (2018) in their study mentioned that eucalyptus is native to Australia and widely planted for various uses in the different parts of Ethiopia integrating it with various farming systems. Planting this tree has resulted in high economic profitability. People in Ethiopia have accumulated important local knowledge of eucalyptus management and expansion because of its greatly increased benefits such as fuel wood, construction and financial benefits.

The majority of farmers, as Getahun, K. et al. (2013) note urban dwellers and experts of the district agricultural office, about half of government extension agents and some researchers preferred planting Eucalyptus tree species on agricultural landscape. This finding also indicated major factors for the preference of planting Eucalyptus where there is increasing demand for

wood products in the market due to its ease of cultivation, wider adaptability and high rate of biomass production of the tree (ibid.).

These situations have started eroding the culture of paying due attention to the respected indigenous knowledge which gives important room to giving care to cultural and social environments. Though commercial forestry is underdeveloped in the area, Sidama Regional State is well known for its traditional agro-forestry system, which saved the land from erosion and desertification for centuries. Every household in Sidama practices agro-forestry. It also absorbs water and leaves the land dry. Most farmers are aware of the problem. However, the economic benefits of the eucalyptus tree outweigh the cost of losing small crops near it for individual farmers. However, it is generally recognized at present that this trend is dangerous for the overall environmental sustainability of the Sidama land (Negash, 2010).

4. SAMMARY, CONCLUSION, AND RECOMMENDATIONS

4.1. Summary

The Sidama Regional State's sacred forest around Abbo-Wonsho, which is a tangible cultural heritage, has been discovered by researchers recently. The research findings recently. The spiritual forest on the Sidama land, known as Abbo-Wonsho, represents a traditional form of community-based conservation. The forest that covers 320 hectares of land is about 17 generations according to the interview to associate leader of Abbo-Wonsho, (Ganna). They are known to be confined to sacred forests which are remnants of climax vegetation, yet these sites typically have no legal conservation though they are managed and protected by local residents.

The practice of dedicating trees and forests to divinity is an antique ritual in the new research arena, Abbo-Wonsho for generations. Various cultural aspects such as religion, faith and traditional belief bring people closer to nature and the natural environment. In this regard, the floristic diversity of the Abbo-Wonsho sacred forest in Sidama Regional State (SRS) is under investigation.

The essential strategy used to conserve Abbo-Wonsho natural resources is the spiritual belief of people in supernatural force which could create connections between groups of people. These social taboos exist habitually in their cultures, and represent a class of informal institutions, where traditional, religiously- governed norms or taboo system define the human behaviour. These taboos remain the prime factor guiding their conduct towards the exploitation of the natural resources (Woldemariam, T. & Fetene, and M. 2010).

While many forests in Sidama Regional State underwent degradation, Abbo-Wonsho sacred forest remained to be the best-conserved forest owing to its sacredness and significance to the Wonsho Sidama community. The implication was that the Sidama people, as a community, had a high regard for the forest ecological system due to the sacred value attached to it. For this reason, it was largely unaffected by destructive anthropogenic activities.

Multitude Medicinal plants were identified at Wonsho sacred forests and other botanical environments, 77 (51.3%) were reported as directly medicinal. This was the most important use of plants identified, followed by other livelihood uses. Of these plants and trees, except for some exotic species which by virtue of taboos were excluded and few native trees that do not

adapt easily to be studied sacred forest micro-climate, all of the native species were harboured in sacred forests ([Zerihun, 2014](#)).

4.2. Conclusions

The general objective of the study was to explore the indigenous forest conservation mechanisms of the Abbo-Wonsho sacred area community, Sidama Regional State, and to propose ways for maintaining this useful knowledge for sustainable environmental management. The study also tried to answer the following three research questions:

- What indigenous knowledge experiences have been practiced on the safety, safety and conservation of natural and social environment?
- What are the attitudes of the local people towards using indigenous knowledge and practice towards for environmental Conservations?
- What are the knowledge gaps that could be filled to increase forest recovery?

Traditional religion-based knowledge plays a significant role in protecting the environments and critical ecosystems.

The study found out wide use of customary rules and regulations, customs and rituals, taboos and totems, and metaphors and proverbs applied in forest and wildlife resource conservation. These forms of indigenous knowledge constitute the social and religious values of the Sidama Regional State (SRS) community in general and the dwellers around Abbo-Wonsho forest in particular in conserving the human-environment system.

As understood from the study, the potential faith of the community living around the forest could give attention to conservation of Abbo-Wonsho forest. Sacred forests across the SRS are conserved primarily for spiritual reasons. Harming the forest in Abbo-Wonsho is forbidden by tradition and it is typically believed that any alteration of the forest such as cutting wood for construction or firewood, hunting animals or other forms of resource extraction will result in negative consequences against the person who has involved in such practices. Sacred forests also contain a high diversity of medicinally important plants.

Nonetheless, what is overwhelming is that sacred forests are facing significant social, political and economic threats. Land grabbing, encroachment, fragmentation, human population increase and cultural dynamics, according to Messay [Hailu \(2018\)](#), have all been labelled culprits in the deterioration of sacred groves. Other than being sacred, these sites are also often ecological systems containing resources, endemic trees, medicinal herbs and complete ecological diversity. These all can make Sidama Regional State to be compensated at national and international levels due to safety, and conservation of natural and social environment in supporting livelihoods.

Furthermore, research findings manifest that decreasing economic power coupled with population growth have exerted pressure on all natural resources, including the communally-owned AWSS. At the same time, the indigenous institutions responsible for controlling access to the forest resources have been weakened by the impacts of ‘modernization’, Islam, Christianity and seeking ‘change’.

As noted previously, traditional natural resources' management is shaped around local rules and regulations. These rules and regulations are most often preserved in religious or cultural beliefs and superstitions and enforced by prohibitions. These have no legal backing, but the beliefs have been strong enough in the past to make people obey the regulations. In the context of natural resources management, they enhance biodiversity conservation and minimize the continuous use of natural resources.

From the very onset, the paper aims at looking into the roles the traditional religion and socio-cultural practices in Abbo-Wonsho community. Findings indicate that traditional religion and cultural practices have contributed in to the conservation of resources through the acknowledgment of psychic powers to stream/pond, tree, forest land, etc.; these attributions of the supreme powers and the belief and respect for the gods of the land holds the string to reverence and respect for these natural resources. This belief in the existence of a supreme is responsible for the conservation of natural resources in Abbo-Wonsho community. The people have also enabled to voluntarily take management of natural resources very seriously.

The traditional beliefs and taboos helped people enforce rules and regulations for environmental preservation because people refrained from using resources carelessly, especially as it is related to sacred places. In particular, the important role of these practices in the conservation of biodiversity through sacred groves has been highlighted. However, an assessment that would provide valuable insights into the changing values of local people in relation to the Conservation of forests and other natural resources is highly recommended.

The present study, therefore, was intended to propose additional management and conservation skills management and conservation as an alternative strategy towards the sustainability of the forests around human settlements. It was also an attempt to explore the role of sacred forest conservation and management of different ecosystem services.

The finding also indicated that planting eucalyptus trees in the forest area to satisfy the wood demand of people in the market was one of the major factors in decreasing the size of the forest. for the preference of planting eucalyptus were the increasing demand for wood products in the market, Additionally, ease of cultivation, wider adaptability and high rate of biomass production of the trees were the challenges that are currently threatening the sustainability of the forest with its full natural resources. . These situations have started eroding the culture of paying due attention to respecting indigenous knowledge in taking care of cultural and social environments in planting indigenous trees to protect the natural and social environment. Though commercial forestry is underdeveloped in the area, the Sidama Regional State is well known for its traditional agro-forestry system, which saved the land from erosion and desertification for centuries. Every household in Sidama practices agro-forestry. Even if these practices brought some benefits for the farmers, these tendencies have also brought a negative impact in recent times.

Farmers began to practice planting Eucalyptus trees alongside other crops. Because the plant has a poisonous effect, it destroys other crops planted under it. It also absorbs water and leaves the land dry. Most farmers are aware of the problem. However, the economic benefits of the eucalyptus tree outweigh the cost of losing small crops near it for individual farmers. It is generally recognized at present that this trend is dangerous for the overall environmental sustainability of the Sidama land. This knowledge gap has to be narrowed to be consistent with planting indigenous trees to sustain the cultural values of the community.

4.3. Recommendations

The following recommendations were drawn from the study.

- The (tree) biodiversity supporting values and governance principles inherent in the maintenance of sacred forest sites may further be tested for and application in wider contexts by concerned conservationists and policy makers in the region and the country at large. The model of sacred forests and ancestral principles of their management may usefully inform the current and future biodiversity conservation work
- A growing shift from biodiversity-supporting to materialist consumer values is one of challenging phenomena at Abbo-Wonsho. Moreover, an increasing generation gap in the realm of ascribing to biodiversity-supporting ancestral values and ethno-botanical traditions should be abridged. Rituals and their enactment are less frequently held among the younger generation, despite some success at countering the rampant idea that sacred forest sites are places where idol worship is practiced in recent years that such practice is backward, unhygienic and uneconomical.
- The Abbo-Wonsho Sacred Site leaders should be motivated and appreciated at country level in general and in Sidama regional level in particular. Especially, Hawassa University should offer honorarium doctoral degree to one of Associate leaders who lead the ancestral forest from generation to generation for about 1190 years.

4.4. Further studies have to be made on:

- The Contribution of Modern Religious Organizations to the on Environmental Conservation and Their status in the present conservation.
- The attitude of the young generations towards enhancing indigenous Knowledge in environmental Conservation.

4.5. Suggestions for Conservation

The finding of this research add to a large body of study which puts forward that sacred forests can contribute considerably to the protection of biodiversity. While in many cases, ecological conservation is not the primary intended function of these forests, they nevertheless play an important role in the conservation of ecological systems. It is therefore important that natural resource managers consider the interactions between social and ecological systems when developing strategies for forest conservation in Abbo-Wonsho, Sidama, Ethiopia.

Previous academic researchers have both indicated that changes to religious systems resulting from westernization and the introduction of proselytizing/the action of attempting to convert someone from one religion, belief, or opinion to another religions present a significant threat to forest ecosystems, (ZerihunDoda, 2014; Campbell, 2005; Kokou et al. 2005,). Considering this, the role of local religious systems should not be discounted by those interested in encouraging the preservation of remnant forest patches in Abbo-Wonsho. Recognition by scientists and natural resource managers of the social and cultural factors contributing to forest conservation, and respect for indigenous knowledge systems by the scientific community are a prerequisite for effective forest conservation.

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6. CONFLICT OF INTEREST STATEMENT

No conflict of interest was reported.

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