

**UNIVERSITY OF ZIMBABWE**



**THE ROLE OF INDIGENOUS KNOWLEDGE IN FOREST CONSERVATION:  
GOMBAKOMBA COMMUNAL AREA, MUTARE DISTRICT, ZIMBABWE.**

**BY**

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Degree in Sociology and Social Anthropology.**

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**DECLARATION**

I, Phillip Mwatsera (**R081753B**), hereby declare that this study is my own work. It has not been submitted for any degree or any diploma certificate in any institution of higher learning.

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## **ABSTRACT**

*The role of indigenous knowledge in forest conservation was investigated in Gombakomba communal area in Mutare District in Manicaland Province, Zimbabwe. In carrying out this study, the researcher used in-depth interviews and non-participant observation to gather information. Purposive sampling was used to select elders who were believed to possess vast knowledge on indigenous practices used to conserve forest resources in Gombakomba communal area. The study established that sacred sites, sacred trees, taboos, totems, together with unhu(humanness) play a significant role in sustainable conservation of forest resources in the study area. Sacred forests and sacred trees have remained untouched and ensure sustainable conservation of forest resources. It was observed that there was over exploitation of forest resources in areas not considered sacred and over exploitation of trees that are not regarded as sacred. Unhu, taboos, totems and resting days (chisi and magarai) have also helped in reducing over exploitation of forest resources. The study also revealed the fundamental role played by traditional leaders in enforcing traditional rules that protect forest resources. It emerged from the study that indigenous knowledge is acquired from the parents, grandparents and from the ancestors who communicate their will through the spirit mediums. Hence, the study concludes that indigenous knowledge can contribute to effective conservation of forest resources. Moreover, indigenous practices can also be used as a tool to reduce environmental degradation and climate change. The study therefore, recommends environmentalists to consider indigenous knowledge in their endeavor to achieve sustainable management of the environment.*

**Keywords:** Indigenous knowledge, forest, conservation, sacred, totem, taboo, *unhu*, *chisi* and *magarai*.

## **DEDICATION**

This study is dedicated to my mother, brothers and my sister who labored for my upbringing .I love you and God bless you all.

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## **ABBREVIATIONS**

CAMPFIRE.....Communal Areas Management Programmes for Indigenous

Resources

CBD ..... Convention on Biodiversity

FAO.....Food and Agriculture Organization of United Nations

IUCN..... International Union for Conservation of Nature

UNCED.....United Nations Conference on Environmental Development

UNEP.....United Nations Environmental Programme

UNESCO.....United Nations Educational, Scientific and Cultural

Organization



# 1. INTRODUCTION

A forest holds a great value in every local community and in the global world (Ikeke 2013). According to the Webster Dictionary of English Language (2004), a forest is a large land covered with trees and brush growing thickly. Forests provide environmental services such as stabilizing the soil, replenishing the soil's nutrients, help in the hydrological cycle, holding humidity, harboring extensive reserves of bio-diversity and regulating climate change (Murck 2005). For the rural community, forests provide fuel wood, timber, edible fruits, meat, herbs and grazing areas for livestock. According to Chikwanha and Tanyanyiwa (2011), forests are an integral part of the earth's life support systems. In recent years, there has been massive bio-diversity loss due to a complex set of factors. These factors include among others, high levels of poverty and growing political pressure which is forcing governments in Africa to encourage overexploitation and conversion of forests to other seemingly, more profitable land uses at the expense of environmental and ecological services that they provide (Chidumayo and Gumbo 2010). Bhasikiti, Tshuma and Rusiro (2013) attributed this to rapid industrialization, urbanization and population pressure on land. This has led some scholars and environmentalists to shift to indigenous conservation models to complement the existing scientific conservation model. The prime task of this study is to investigate the role of indigenous knowledge in forest conservation in Gombakomba communal area. This study argues that sustainable forests can be achieved by the use of local knowledge held by indigenous people. The study argues that depletion of forest resources reflects the abandonment of local knowledge held by indigenous people. Ultimately, the study argues that to achieve effective forests conservation, there is need to merge indigenous practices and western science. This study is therefore important to those interested in achieving sustainable conservation of forest resources.

The researcher intends to answer the following specific research questions: What are the indigenous practices that promote forest conservation in Gombakomba communal area? How are these indigenous practices acquired? How effective are these practices in forest conservation. The study begins by presenting a historical background on conservation strategies that were used during the pre-colonial, colonial and post-colonial era to conserve forest resources. The study further presents the statement of the problem, justification and theoretical framework. The study also reviews literature on indigenous practices that promote forest conservation in Zimbabwe and

elsewhere. After discussing the indigenous practices that promote forest conservation, the study discusses how these indigenous practices are acquired and the effectiveness of these practices in forest conservation. The study presents the methodology used in conducting this research. Lastly, the study presents and discusses the research findings and draws conclusion on the role of indigenous knowledge in forest conservation in the Gombakomba communal area.

## **1.1 Background of the study**

Zimbabwe experienced three natural resource management periods namely pre-colonial, colonial (1890-1980) and postcolonial (1980-date). During the pre-colonial era, the management of forests was based on the use of indigenous knowledge encompassing cultural values, customary laws and practices of indigenous people. These strategies include *zviera* (taboo), *unhu /ubuntu* (humanness), *mitupo* (totemism) *ngano* (folk tales) and the concept of common property (Mawere 2013). These strategies conserved the natural environment and promoted sustainable utilization of forest resources. It is important to note that traditional chiefs with the support of village heads headed these indigenous practices. Indigenous knowledge operates as customary rules and it enhanced informal understanding of the local people at all levels. It is worth noting that customary rules enshrined in indigenous knowledge regulated such behavior as cutting down trees and harvesting forest resources. These management strategies had many benefits to local people because they had a strong ownership and powers to conserve forest resources. Moreover, these traditional practices enabled the local people to have a strong sense of responsibility and promote sustainable forest conservation. Pre-colonial resource management was based on unity of humanity and nature and did not create categories for conservation but rather devise strategies for conserving nature while guaranteeing access to it (Murombedzi 2003).

With the advent of colonialism in 1890 by the British, there was a policy shift. The colonial power imposed a Eurocentric way of conserving natural resources, which led to environmental degradation. Mawere (2010) notes that laws were designed in a command and control approach and they create inequitable resource distribution. Traditional practices used by the local people to conserve forest resources were despised, trivialized and relegated. According to Mawere (2010), customary laws that were enshrined in indigenous knowledge were replaced by scientific ways of managing forest resources. It is important to note that the settler government introduced policies that created pressure on natural resources, for instance the land Apportionment Act of

1930 and the Native Colonial Act of 1937. These acts took away land from the black majority and allocated it to the minority white settlers. These policies also stripped away powers of traditional leadership. In this regard, these acts compromised the traditional ways of forest conservation. These two acts had negative results on the countryside because they increased pressure on the natural resources and made it difficult for community participation in resource management. These pieces of legislation compromised and eroded indigenous ways of conserving natural resources because indigenous people were forced away from their land in which they accorded social and economic significance. Instead of embracing traditional practices of forest conservation, the white settlers despised indigenous knowledge as primitive and superstitious (Mawere 2013).

After independence (1980), the Zimbabwean government committed itself to solve the problems created by the settler government. The government embarked on the land reform programme as a way to address colonial imbalance and reduce environmental degradation. The government went on to establish Zimbabwe's National Conservation Strategy (1987) through the Natural Resource Board, which is now called the Environmental Management Authority (EMA). The government also repealed draconian laws such as the Tribal Land Act of 1979 and introduced the Communal Land Act in 1982. The government also tried to renew common property rights by forming Communal Areas Management Programmes for Indigenous Resources (CAMPFIRE) by the Department of National Parks and Wild Life Management. However, despite introducing these progressive policies, the government just like the colonial government failed to guarantee local people access to resources.

Mawere (2010) observed that environmental laws in post independence Zimbabwe such as Communal Lands Act of 1982 and Rural District Act of 1988 are mere replica of colonial era legislation. Many post colonial governments including Zimbabwe continued along developmental paths worked out by their colonial masters, which relegate and negate the role of indigenous knowledge contained in the pre-colonial era (Mawere 2012). Recently, several global imperatives have under pinned the need for renewed attention to indigenous knowledge. Various agencies of the United Nations are seeking to promote paradigms of sustainable human development that build on local knowledge held by indigenous people. UNCED highlighted the

urgent need for developing mechanisms to protect the earth's biological diversity through local knowledge. Many of the documents signed at UNCED reflected the need to conserve the knowledge of the environment that is being lost in communities. This study therefore investigates the role of indigenous knowledge in forests conservation in Gombakomba communal area.

## **1.2 Statement of the problem**

Rapid decline of forest resources is one of the major challenges in recent years. Hamilton and Hamilton (2006) place the blame on population increase, increase in demand for resources, destruction and modification of habitats, expansion and intensification of agriculture. Some scholars like (Mawere 2013, Ngara and Mangizvo 2013) place the blame on erosion of indigenous practices due to colonization, globalization and the use of western scientific conservation models that negate, despise and marginalize cultural practices of local people.

It is because of the need to curb environmental degradation and to achieve sustainable environment that has led to the drafting of various international and domestic laws aimed at protecting bio-diversity. In spite of all these efforts, depletion of biodiversity is continuing at an alarming rate (Basikiti, Tshuma and Rusiro, 2013). The Zimbabwean government has taken positive steps to conserve forest resources by ratifying various international conventions such as Convention on Bio-diversity conservation and enacting pieces of legislation in order to conserve forest resources, however, implementation remains a challenge. United Nations Environmental Programme (UNEP) (2000) cited lack of financial resources, lack of follow up and lack of political will among others. It is fundamental to note that these challenges leave a gap in bio-diversity conservation. The impact of bio-diversity loss will be manifested in the deterioration of human health, agriculture sector and worsening of poverty (Mawere 2010). It is however, believed that in order to achieve sustainable conservation of bio-diversity there is need to take into consideration the indigenous practices used in bio-diversity conservation (Basikiti, Tshuma, and Rusiro 2013, Mawere 2013, Ngara and Mangizvo 2013). Mawere (2013) underscores the need to integrate indigenous practices to achieve success in conservation of biodiversity. This study is aimed at investigating the role of indigenous knowledge in forest conservation in Gombakomba communal area. The researcher was motivated by the rapid decline of forest

resources especially in rural areas of Zimbabwe and the disappearing of indigenous practices due to modernization and globalization. Moreover, the researcher was also motivated by the need to promote the rethinking of local knowledge that was previously marginalized and promote rethinking of indigenous knowledge in conservation of forest resources.

### **1.3 Justification of the study**

The study seeks to contribute literature on the role of indigenous knowledge in forest conservation. It is also important to note that there is growing fear for the erosion of indigenous practices due to globalization. It is however important to study the indigenous knowledge systems used in forest conservation. The information can benefit environmentalists to build on local knowledge in order to achieve success in their programmes. Moreover, a study on indigenous knowledge ensures that the concerns, interests and aspirations of the indigenous people are taken on board to ensure sustainable forests management. There is extensive destruction of vegetation due to human activities, hence, there is need to provide homegrown solutions to reduce and to prevent further destruction of forests. It is of importance to find ways of enhancing the contribution of indigenous knowledge in forest conservation. Studying indigenous knowledge and popularizing it will help the local people and the nation at large to have positive thoughts and perceptions on their cultural values. People, particularly, the young, will appreciate and respect the indigenous knowledge system as an important environmental management strategy (Basikiti, Tshuma and Rusiro 2013). Since western science is failing to solve the problem of environmental degradation, it is important to look for other alternatives such as indigenous knowledge. Moreover, studying indigenous knowledge helps the indigenous people to reclaim the dignity and humanity that they had been robbed of by colonialism (Mapara 2009).

### **1.4 Aim**

The purpose of the study is to investigate the role of indigenous knowledge in forest conservation in Gombakomba communal area.

### **1.5 Objectives of the study are:**

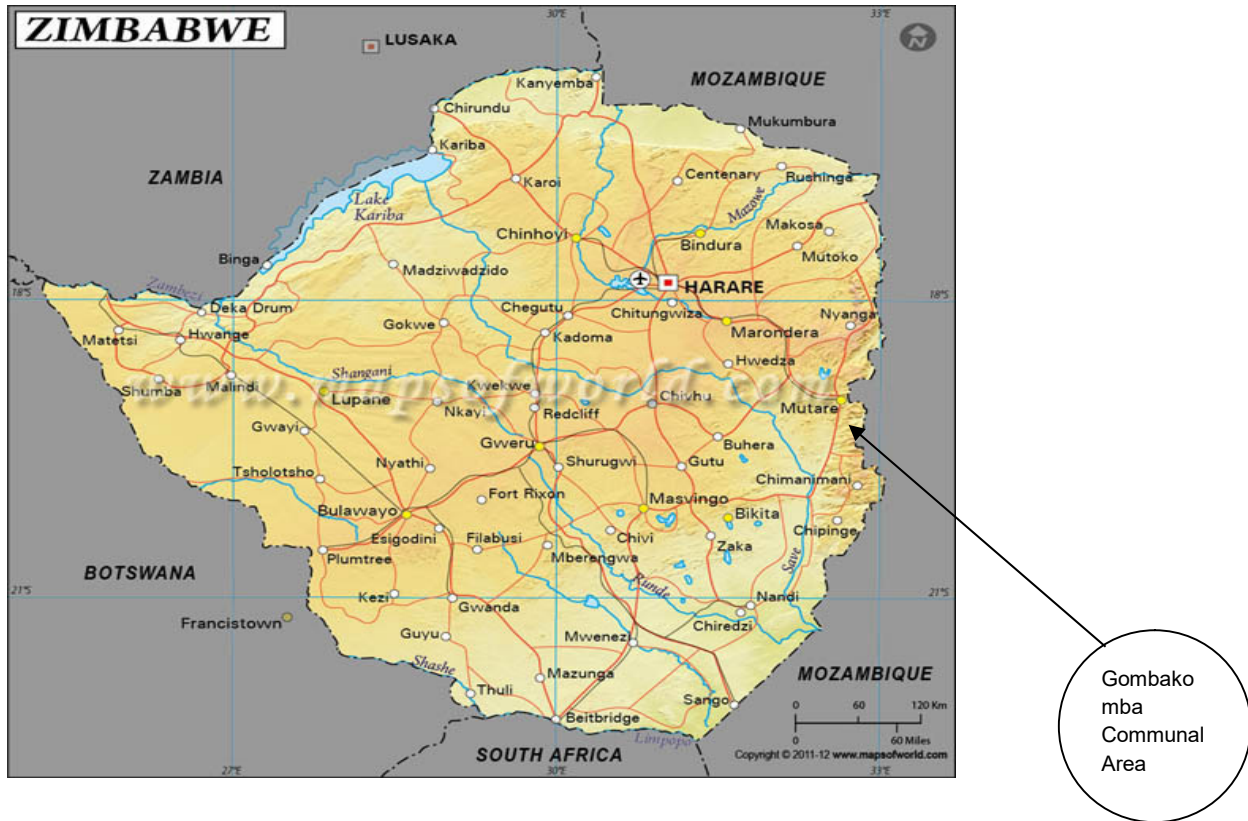
1. To document the indigenous knowledge used in forest conservation in Gombakomba communal area.
2. To investigate how these traditional practices are acquired?
3. To examine the effectiveness of indigenous knowledge in forest conservation in Gombakomba communal area.

### **1.6 Research questions**

The questions that the researcher used in guiding this research were:

1. What are the traditional practices that promote forest conservation in Gombakomba communal area?
2. How are these traditional practices acquired?
3. How effective is indigenous knowledge in forest conservation in Gombakomba communal area?

## 1.7 Study Area



**Source:** Google images

Gombakomba communal area is situated in the eastern part of Zimbabwe, Manicaland province, 30 km southeast of Mutare. The area lies in agro- ecological region three with the savanna type of climate. The area is characterized by hot wet summers and dry cold winters. The area records 500-750 mm of annual rainfall. High temperatures that exceed 25 degrees Celsius in summer and low temperatures that fall below 19 degrees Celsius characterize the area (FAO 2006). The area lies in the shadow of Vumba Mountains and this means that rainfall in this area is lower than that received in Vumba. Savanna vegetation type dominates the area. Trees such as *mizhanje*, *misasa*, *miunze* and *mutondo* dominate the high ground such as mountains and burial places in the low lying areas.

The area stretches from *Mupudzi* River in the east up to mount Dangare in the west. From the north, it stretches from *Domboremhuka* Mountain to Mafuke communal area. The area is drained by two major rivers. These are *Nyamatiki* River that flows from North West to south east and *Mupudzi* River that flows from north to south. The area is under the traditional leadership of

*Mambo* (Chief) Zimunya, *Ishe* (Sub –chief) Gombakomba and village leaders. Subsistence farming is the major human activity in the area. The villagers grow crops such as maize, nuts, groundnuts and rearing of animals such as cattle, goats, and sheep. These activities have resulted in the clearing of forests in the low-lying areas leaving islands of forest on burial places and fruit trees.

The villagers practice Christianity and African religion. Chiefs and village heads are the custodians of indigenous customs and practices such as *mademba* (rain making). Chiefs, village heads together with their council ensures that sacred sites such as mountains, wells, springs, burial places, and forest are conserved. These indigenous practices have helped in promoting conservation of forest resources in Gombakomba communal area.

## **1.8 Theoretical framework**

The main purpose of this study was to investigate the role of indigenous knowledge in forest conservation from the villager's point of view. In conducting this study, the researcher deemed it appropriate to use the actor-oriented approach of Norman Long. Actor-oriented approaches range from transactional and decision-making models to symbolic interactions and phenomenological analysis. Social actors are not simply seen as disembodied social categories or passive recipients of intervention, but active participants who process information and strategize in their dealings with various local actors as well as with outside institutions and personnel (Long 1990).

Long (1990) further notes that individual actor has the capacity to process social experience and to devise ways of coping with life. In other words, the approach argues that people are not passive victims of circumstances. Human beings are endowed with knowledge and capability. In relation to this study, villagers are capable of devising mechanisms to mitigate forest resource depletion. Mechanisms such as taboos, totem, ceremonies, and traditional institutions among others are used to reduce overexploitation of forest resources. By using the aforementioned mechanisms, villagers can achieve sustainable forest conservation. Villagers are knowledgeable, capable of assessing the environmental problems, and bringing in lasting solutions that suits their needs. In this study, it has been found that indigenous practices such as sacredness, totem, taboos and humanness have contributed to forest conservation as well as meeting the needs of the villagers. Moreover, the study established that villagers are capable of dealing with both local



and external actors in ensuring sustainable forest conservation. The practice of using traditional courts to try villains together with the use of myths played a significant role in dealing with both local and external actors.

In the study, it has been found that, big trees and forests were set aside for fruits and religious reasons. This is consistent with another principle of actor-oriented approach, which advocates the model of rational choice and preference of utility. The Actor –oriented approach also posits that human beings are influenced by their life worlds (lived experiences) that produce certain actions, interactions and meanings. Therefore, interventions into life worlds of individuals or groups cause constraints or conflicts because external factors come to mean different things to different groups (Long 2001).

The theory also highlights the notion of subversion of power practiced by the relatively powerless in their struggle to defend and promote their interests. It also emerged in this study that villagers rejected the government’s directive to clear forests and cast concrete to improve hygiene of *Nyamaare* well. Moreover, villagers left big trees and fruit trees such as *mishakata*, *mitamba* and *mizhanje* in their fields against the advice from agriculture demonstrators to cut them down. Villagers have the power to resist external intervention based on their life experience. It is also reported by participants that the traditional leaders rejected the construction of a cell phone booster on *Domboremhuka* Mountain; the main reason given by participants was that the mountain is sacred.

## **2. LITERATURE REVIEW**

This section highlights the literature that underpins the role of indigenous knowledge in forest conservation in Gombakomba communal area and elsewhere. It also documents literature on how indigenous knowledge is acquired and transmitted as well as the effectiveness of indigenous knowledge in forest conservation. Moreover, the researcher defines and reviews the terms indigenous knowledge and conservation in order to come up with the working definition.

### **2.1 Indigenous knowledge**

There is no universally accepted definition of indigenous knowledge. The term is used interchangeably with Indigenous Ecological Knowledge (IEK), Local Knowledge (LK), Indigenous Environmental Knowledge (IEK), traditional science, traditional wisdom, folk knowledge ([www.unesco.org](http://www.unesco.org)). Many scholars have defined it in different ways, Drew(2005) defined indigenous knowledge as a useful construct that represents knowledge gathered from undertaking several different pursuits such as hunting medicinal collection, preparation for spiritual ceremonies or maintained household economy. World Bank (1998) defines it as local knowledge that is unique to a given culture or society that can be useful in increasing efficiency, effectiveness and sustainability of the development process. The United Nations Environmental Programme (UNEP) website differently defines it as knowledge that an indigenous (local) community accumulates over generations of living in a particular environment. UNESCO defined it as local knowledge that is unique to a culture and society ([www.unesco.org](http://www.unesco.org)).

Mapara (2009) defines indigenous knowledge systems as ‘a body of knowledge, or bodies of knowledge, of indigenous people of particular geographical areas that have survived on for a very long time. Mawere (2010) further notes that these bodies are developed through the process of acculturation and through kinships, relationships that are formed by societal groups, and are handed down through oral tradition and cultural practices such as rituals and rites. One could argue that such knowledge forms have failed to die despite the racial and colonial onslaught that they have suffered at the hands of western imperialism and arrogance (Mapara 2009). According to Convention on Biodiversity (CBD) website indigenous knowledge are innovations and

practices of indigenous and local communities around the world, developed from experience gained over centuries and adapted to local culture and environment. Traditional knowledge is transmitted orally from generation to generation. It tends to take the form of stories, songs, folklore, proverbs, cultural values, beliefs, rituals, community laws, local language and agriculture practices. Although there are many different definitions forwarded by scholars, the consensus among them is that indigenous knowledge is linked to culture, place or society, transmitted orally, dynamic in nature, experimental through trial and error, contrast with western knowledge and belongs to a group of people who live close contact with natural systems ([www.unesco.org](http://www.unesco.org)). For this study, indigenous knowledge is understood as local knowledge used to conserve forest resources.

## **2.2 Conservation**

The term conservation is defined in various ways. According to Encyclopedia Britannica (2007) conservation is the planned management of a natural resource or the total environment of a particular ecosystem to prevent exploitation, pollution, destruction or neglect and to ensure the future use of the resource. Concurring with above definition, World Conservation Strategy (IUCN) of 1980 defines conservation as the management of human use of the biosphere so that it may yield the greatest sustainable benefit to the present generation while maintaining its potential to meet the needs of aspiring of the future generations. It can be summarized as the protection of natural resources and human population from irreversible harm (Hamblen 2004). From the above definitions, it is therefore fundamental to note that conservation is important in sustainable management of natural resources. For the purpose of this study, conservation can be defined as the wise management of forest resources.

## **2.4 Traditional practices that promote forest conservation**

Conservation and sustainable use of resources are not imposition from the world external to Africa through among others, colonialism, and globalization as pro-western scholars would want to argue (Chemhuru and Masaka 2011). African societies have set conservation strategies for forest resources; these include taboos, sacred forest, totemism, *ubuntu/unhu*, concept of common property as well as religion. This section discusses the above strategies, which are used in forest conservation and discuss how these practices are acquired. Moreover, this section also discusses the effectiveness of these strategies in conserving forest.

### Taboos /*Zviera*

Taboos are one of the traditional practices that promote forest conservation. In Shona taboos ‘*zviera*’, are strong sanctions that discourage certain forms of human behavior, (Tatira cited in Chemhuru and Masaka 2011). Osemoebo (2013) defines taboos as social prohibitions regulating or restraining individuals and communities from using biotic resources. Taboos are one of the several strategies that were used to conserve and sustainably exploit natural resources (Mawere 2013). Taboos are an important strategy that is used to control human behavior towards forest resources. According to Chemhuru and Masaka (2013) taboos are useful in providing moral sanctions that help in shaping *unhu*. They further note that it is through the use of sanctions that people come to know of good traits to inculcate and bad habits to avoid. Taboos are useful because they play a significant role in forming and shaping a desirable behavior. Mawere (2013) observed that taboos are made up of prohibitions and restrictions that forbade interaction, associations with a particular thing, place or places for moral goodness of the society. These restrictions or prohibitions normally attract a penalty to the person who breaks the rules but in some cases, it can also spell disaster to the whole community. As noted by Mawere(2013) *usatema kana kukwazha michero yesango*.(Do not cut down or knock down unripe fruits).The consequence for breaking this rule is that the ancestors will retaliate by causing the fruit trees not to bear fruits. The rationale was to conserve forest resources and fostering a sustainable way of utilizing them. Taboos are however, used to establish sacred forests (Khan, Khumbongmayum and Tripathi 2008).It is in these sacred groves that indigenous people accorded spiritual significance hence it is a taboo for one to use the resources found in these places. Therefore, these sacred groves and community taboos promote forest conservation.

It is also important to note that taboos are also used to conserve forest resources such as animals and birds. Animals that depend on tree species are also protected using taboos these animals include baboons, and monkeys among others. Mapara (2010) note that people were not allowed to harvest wild loquast (*mazhanje*) because if they did so it was a taboo. It is however important to note that the rationale behind this taboo was to foster a sustainable ecosystem and promote forest conservation.

### Totemism (*Mutupo*)

Totemism (*Mutupo*) is another traditional practice that promotes forest conservation. According to Mawere (2013), totemism is a form of identity by a particular group/clan of people using totems. Totems refer to the use of non-human entities, animal (or part of animal) terms for identity purposes. It is a taboo to eat mistreating, abuse or kill animals whose names are used as totems. For instance, those people who belong to the clan of *vaera soko* (those that are not allowed to eat monkey /baboon) are not allowed to eat this animal or destroy its source of livelihood. People are also not allowed to shake or knock *muzhanje* tree when harvesting the fruit, the reason behind this is to curb excessive exploitation of the fruit, which negatively affects the well-being of animals. In this regard, totem plays a significant role in promoting forest conservation.

Recent studies conducted in southeastern Zimbabwe in Norumedzo communal area by Mawere (2012) revealed that VaDuma of the *moyo* (heart) totem employ traditional restrictions in promoting sustainable conservation of big forest grove. Dagba, Sambe and Shomkegh (2013) note that totems were often a basis for laws and regulations and it was violation of cultural and spiritual life to hunt or kill an animal or plant a totem. He further notes that totems are believed to be part of the kindred and it was believed that these totems share blood with the ancestors. Therefore, killing of hurting totems was believed to be hurting ancestors hence promote conservation of animals.

A study conducted by Dagba, Sambe and Shomkegh (2013) among the Tiv people in Nigeria revealed that totems promote forest resources. In their study, it was revealed that totems such as wild custard apple (*annona senegalensis*) are believed to prevent snake bites and if bitten the leaves are used as treatment. This belief promotes the conservation of this tree because of the importance it has in household. Another plant used as totem among the Tiv people is *kpikyegh* (*psorospermum corymberum*). It is forbidden to use this plant as firewood or timber because it is believed that all the fowl in your house will die. In this regard, totem (*mutupo*) is a principle that takes the existence of natural resources including forest seriously.

According to Behera and Nath (2005) totemism is a conservation strategy that creates a harmonious relationship between tribal groups and natural environment. In their study they conducted in India among the Pengu tribe, they note that indigenous people respect trees and animals from which their totems were derived. They were forbidden from killing, injuring or eating plant and animal resources of their own totem. Failure to abide to this rule might require the perpetrator to pay a fine or host a cleansing ceremony as per demands of the community. Among the Pengu, it is also believed that harvesting grass from the earth or harvesting of bark that results in death of the plant might bring curse or death of the perpetrator (Bahera and Nath 2005).

### Rituals

Rituals are another indigenous practice that promotes conservation of forest resources. Rituals such as cultural ceremonies and prayers involving for instance first food are usually performed before harvesting the resources. According to a study conducted in Zaka District in Masvingo by Bhasikiti, Tshuma and Rusiro (2013), the *Joto* and *Matsai* clans played a significant role in conducting ceremonies to thank the spirits for the wild fruits and insects before they are harvested. They further note that these traditional practices (ceremonies) contributed to the sustainable conservation of natural resources in Zaka. Turner, Ignance and Igance (2000) similarly note that cultural ceremonies are performed to guide people to practise sustainable use of natural resources. According to Bhasikiti, Tshuma and Rusiro (2013), *makwerere* (rain making ceremony) contributes to conservation of forest resources because this ceremony is believed to bring rain that makes the vegetation dense and herald the insects and wild fruits.

Another study conducted in Gokwe district in Shangwe communal area by Ngara and Mangizo (2013) similarly revealed that ceremonies such as rainmaking have contributed to conservation of forest resources. Moreover, tree species such as *mushakata* are conserved because rain making ceremonies are held under them. The belief was that rain making spirits dwell on the branches of *mushakata* tree (Ngara and mangizvo 2013). *Mutoro* ceremony is another practice in Zaka that contributes to conservation of forest resources, insects are harvested after *mutoro* ceremony. This ensures that insects are harvested only when mature and in abundance (Bhasikiti, Tshuma and Rusiro 2013). In this regard, one can argue that cultural ceremonies are important in promoting forest conservation.

#### Humanness *Unhu/ubuntu*

*Ubuntu* is another conservation strategy that is used by indigenous people in promoting forest resources. According to Chingombe and Mandora (2013), *unhu* is a social philosophy, which embodies virtues that celebrate the mutual social responsibility, mutual assistance, trust, unselfishness, self reliance, caring and respect of others among other ethical values. For Ramose cited in Mawere (2013) *unhu (ubuntu)* is a multifaceted philosophical system that involves logic metaphysics, epistemology and ethics, it is a philosophy of life that is concerned with reinforcement of unity, oneness, solidarity and harmony among the Bantu people in Africa. Mawere (2012) note that the concept *ubuntu* emphasises mutual friendship, respect and sharing resources and also fosters cohesion among people as well as sharing and discouraging unsustainable use of resources. He further argued that *ubuntu* philosophy bridges and divides the tensions amongst the people as it encourages neighbors to help each other and share the resources in respective communities. The *ubuntu* philosophy also emphasizes the need to respect all human and the environment and encourages people to live in harmony with the environment. According to Mawere (2012), *ubuntu* is enshrined in taboos, avoidance rules and other traditional systems. It is therefore important to note that *ubuntu* philosophy plays a significant role in forest conservation because acts that destroy forest resources such as felling of fruit trees and failure to observe the norms that govern the use of forest resources are highly discouraged.

A study conducted by Mawere (2012) in Norumedzo and Mukanganwi communal areas in southeast Zimbabwe revealed that *ubuntu* plays a significant role in conserving *mazhanje* in Norumedzo communal area as proven by the abundance of *mazhanje* which exist in the thickest forest grove called *Jiri*. Whereas in Mukangawi communal area it was reported that *mazhanje* trees had depleted and this was attributed to the abandonment of *ubuntu*. Shumba (2011) notes that *ubuntu* philosophy among Shona made it a transgression to waste and denigrate the natural resources. He further notes that a person who does this is labeled *muroyi* (witch), a label one cannot comfortably live with in society. In this regard, *ubuntu* promotes conservation of forest resources because it emphasizes harmony with others and natural environment. It regulated behavior and actions of individuals in favor of cooperation, solidarity, homogeneity, collective responsibility and action (Shumba 2011). Therefore; *ubuntu* plays a significant role in enforcing norms and acceptable behavior that relate well with forest resources.

### Sacred groves

Sacred groves are one of the indigenous practices that promote forest conservation. Their role in promoting sustainable management of forest resources has been recognized and documented in Africa and Asia particularly in India. According to Udeagha, Udofia and Etim (2013), sacred groves are forest patches conserved by local people through social, cultural and religious practices. Anthawal, Sharma and Sharma (2006) observed that sacred groves are the repositories of rare and endemic species and can be regarded as remnant of the primary forest left untouched by local inhabitants and protected them due to the belief that the deities lived in these forests. In this regard, all forest resources found in these sacred groves are believed to be owned and protected by ancestors. Sacred groves have been protected for religious practices, burial sites and watersheds (Malhortra, Gokhale, Chatterjee and Srivastava 2007).

Among the Shona, it is where chiefs are buried and it is regarded as a habitat of ancestors (Taringa 2006). He further notes that no access in these areas is allowed without the permission of the chief or headman. These sacred groves among the Shona are called *rambakutemwa* (woodlands that cannot be cut) because it is believed that ancestors rest on these forests. According to Daneel cited by Taringa (2006) who conducted a study among the Karanga, large



trees are protected as they belonged to the *Samarombo* ancestors who were believed to dwell on branches. In this regard, local people accorded religious and spiritual significance to sacred groves hence felling trees or hunting wild animals in these areas is prohibited by the use of taboos. Local leaders such as chiefs played a significant role in protecting these places by enforcing and devising rules that conserve these places. Thus, sacred groves played a significant role in protecting trees and animals from extinction.

### Common property

Common property refers to private property owned by a group of people on which they rely for subsistence (Mawere 2013). This is one of the indigenous conservation strategies used by indigenous people in conserving natural resources. However, the strategy faces a lot of criticism from Hardin (1968) in his work 'Tragedy of the Commons' in which he states that common property regimes lead to land degradation as each farmer seeks to maximize their own gain at the expense of the community. Contrary to Hardin's theory, that common property is subject to exploitation due to openness. Some scholars such as Mawere (2013) argue that common property has demonstrated sustainable resource management. For Mawere (2013) common property is a traditional environmental strategy that ensures full responsibility and participation of all members in management and conservation of resources in their community. In this regard, common property is one of the indigenous practices that promote forest conservation since everyone is a beneficiary and owner of the resource.

Amusan, Mutyatsi, Khumalo and Sukati (2006) notes that under common property resource management, traditional leaders and certain traditional rules that govern resources were devised to promote conservation of forest resources. They further note that harvesting of forest resources required permission from the traditional leadership such as chiefs, headman and elders. This was however done to ensure that there was no indiscriminate cutting down of trees, thus promoting forest conservation and ensuring that rightful owners used these resources.

## **2.4 Ways in which indigenous knowledge is acquired**

Although there is a lot of literature documented on the role of indigenous knowledge in forest conservation, little has been documented on how indigenous knowledge is acquired. The primary aim of this section is to document ways in which indigenous knowledge is acquired among indigenous people in Gombakomba and elsewhere.

Indigenous knowledge can be acquired through various methods, which include observation, socialization, as well as encountering with the spirits. According to Castellano cited in McGregor (2004) knowledge acquired from the above sources is classified into categories which include, traditional knowledge (passed on from generation to generation), empirical knowledge (acquired through observation) and revealed knowledge (acquired through spirit knowledge and recognized as a gift). It is important to note that experimental knowledge which is acquired through watching is the only form of knowledge that is more convenient because villagers have the opportunity to see and test their impacts. Whereas revealed knowledge is specialized, knowledge not easily accessible to many people but only a few individuals because it is knowledge acquired through spirits. Therefore, this form of knowledge is restricted to few individuals in a society.

Indigenous knowledge among indigenous people relating to sustainable use of forest resources is mostly acquired from grandparents and parents. Nonetheless, it is useful to point out that knowledge transmission from grandparents and parents is gender biased; mothers transmit knowledge to daughters whereas fathers transmit to sons. According to Setalaphrak and Price (2007), children from young ages are taught through narratives and rituals that plants are a source of living by their parents and grandparents. Among the Shona, indigenous knowledge is acquired from parents and grandparents through *ngano*. *Ngano* are stories that are told to young children in order to inculcate values and knowledge about the importance of natural resources and the benefit of sustainable use of these resources. Moreover, it is within these stories children acquire humanness *unhu* which is one of the most important strategies in conserving natural resources. Cheikhyoussef, Shapi, Matengu, Ashekele (2011) concurred with the above idea when he talks of mentorship as a technique in which indigenous knowledge is acquired. For them, it is through mentorship in which skills and knowledge to conserve natural resources are acquired. In their study conducted in Namibia, it is revealed that children acquire knowledge from their elders by accompanying them during medicinal plants collection. It is during these walks around forest

where the young acquire sustainable harvesting techniques through observation and rules surrounding the use of forest resources. It is therefore important to note that it is through these transect walks around forests that empirical knowledge is acquired

Indigenous knowledge is also acquired during play and interactions. Setalaphruk and Price (2007), notes that children acquire knowledge of wild food resources through peers of the same generation. They further note that it is during play and interaction that knowledge is shared and learned among others. Therefore, peers are an important avenue from which indigenous knowledge is acquired. Setalaphruk and Price (2007) also revealed that indigenous knowledge is acquired from lived experiences. For one to acquire knowledge h/she has to live a life. Therefore, among Africans, the elders are believed to possess vast amount of knowledge and they are regarded as indigenous libraries. Indigenous knowledge is also acquired through spiritual means and is regarded as a gift, this type of knowledge is called revealed knowledge (Castellano cited in Mcgregor 2004). It is limited to only few individuals within the community and it is sometimes acquired through visions and dreams. Furthermore, it is useful to point out that belief systems that include taboos are acquired during religious rites such as initiation into adulthood (Rim-Rukeh, Ierhievwie and Agbozu 2013). It is also fundamental to point out that language plays a significant role in knowledge acquisition. Mararike (2011) observed that language, as part of culture is one of the human factor characteristic necessary for the accumulation, storage and dissemination of knowledge. Therefore, for one to acquire knowledge related to forest conservation the person must be familiar with the language used in a particular area. In relation to this study, if one is to acquire local knowledge related to conservation of forest resources in Gombakomba communal area, s/he has to be familiar with *Manyika* dialect.

## **2.5 Effectiveness of indigenous knowledge in forest conservation**

There has been a plethora of evidence in literature that points out how indigenous knowledge system has contributed to sustainable conservation of forest resources in Zimbabwe and some parts of the world. Recent studies conducted by Mawere (2012) underscore the importance of indigenous knowledge in sustainable conservation of forest resources. In his study, conducted in the southeastern part of Zimbabwe, he revealed how the Norumedzo people, the vaDuma of

*moyo* (heart) totem effectively conserve forest resources such as *jiri* and *harurwa* using traditional practices. He underscores the importance of traditional jurisdiction of chief Norumedzo in sustainable conservation of forest resources. Mawere (2012) also reported the importance of *unhu*, (humanness), *zviera* (taboos) in successful conservation of forest resources. The study also revealed the loss of forest resources in the neighboring Mukanganwi communal area attributing this to the reluctance of the people in this area to deploy *ubuntu* in their relations with natural resources. Moreover, environmental degradation in the Mukanganwi communal area is attributed to weak traditional leadership, since the chief of the area does not live in the area.

Another recent study conducted by Ngara and Mangizvo (2013) in Shanwe communal area in Gokwe District revealed that certain tree species such as *mibvumira*, *michakata* and *misasa* are effectively conserved using traditional practices. These tree species are in abundance because local people accord them spiritual significance. It is reported that rainmaking ceremonies are conducted under the tree species hence it is a taboo to cut down these trees because it is believed that these trees are homes of rainmaking spirits. It is also believed that the ancestors use these tree species to reach the people, so cutting those trees would detach the people from their ancestors thereby spelling doom to the whole community (Chikwanha and Tanyanyiwa 2011). It is because of these beliefs and strong traditional leadership that enforce customary laws relating to these tree species that people are afraid to use forest resources regarded as sacred. Similarly, the study conducted in Ashanti region Ghana by Hens (2006) also established that trees that are accorded spiritual significance such as *odum* (*chlorophora excels*) are in abundance because it is believed that these trees are homes of ancestors and should not be felled without conducting rituals. Hens (2006) notes that prohibitions against misuse of natural resources through taboos have shown to foster sustainable conservation of natural resources.

It is also important to note that places regarded as sacred effectively conserve forest resources. Ngara and Mangizvo (2013) note that sacred places such as burial places, sacred hills, caves pools effectively conserve forest resources since it is a taboo to cut down trees at these places. This has been justified by high population of tree species at sacred places in Shangwe communal area (Ngara and Mangizvo 2013). Hens (2006) notes that in Ashanti in Ghana, sacred groves of Sefwi Wiaswo near the border with Ivory Coast has large plant and animal population because

felling trees, hunting, farming, burning, firewood gathering is prohibited in this area. In light of this, sacred place is one of the indigenous conservation strategies that effectively conserve forest resources. A study conducted by Eneji, Ntamu, Ben, Bassey and Williams (2012) in Cross River state Nigeria revealed that sacred forest is an indigenous practice that effectively conserves the forest resources. The study established that there is an abundance of forest resources in burial places because the use of resources in these areas is strictly prohibited. Eneji, Ntamu, Ben, Bassey and Williams (2012) note that if there is no felling of trees or harvesting of vegetation in sacred places then nobody ventures in these sacred areas.

In southeast India, sacred forests are reported to be the only remnants of well-forested areas with complex biological diversity (Mani and Partharathy 2005). In light of the above, it is observed that honoring and dedication of sacred places to the dead and ancestors plays a significant role in conservation of forest resources. A study conducted in Nigeria Delta states by Rim-Rukeh, Ierhievwie and Agbozu (2013) revealed that trees such as the *Okpagma* and *Ogriki* are highly revered because they believed to be associated the *Azizi* gods who guards the field crops, herds and drive away enemies. The location of these tree species is believed to be sacred, where plants are allowed to grow undisturbed, and where animals, reptiles, birds flourish without interference by man. The study also revealed that sacred sites such as *Obi* pond also play a significant role in conserving forest because cutting down trees that grow around this pond is prohibited.

Indigenous practices such as taboos effectively conserve forest resources. This is justified by a study conducted in Madagascar by Jones, Andriamarivololona and Hockley (2008). The study established that the use of taboos effectively protect endangered species and forest. Mawere (2013) also underscores the importance of indigenous practices in sustainable conservation of natural resources including forest resources. For him, (Mawere) indigenous practices of the Shona and Ndebele people such as common property, customary laws, *ubuntu*, totem and taboos effectively conserve natural resources. Mawere (2013) further notes that these indigenous practices are effective in conserving natural resources because they gave the communities a strong sense of control and ownership of their environment. Moreover, indigenous practices confer responsibility to the locals thus promoting effective conservation of forest resources. Chigidi (2009) similarly notes that indigenous practices such as taboos are among other well

thought traditional practices among the Shona and other African societies that ensure sustainable conservation of natural resources as well as forest. Chemhuru and Masaka (2011) agree with Chigidi's notion when they notes that taboos are capable of providing a long life panacea to human directed threat to natural resources and foster sustainable use of natural resources.

Another study conducted in Zaka District in Masvingo by Basikiti, Tshuma and Rusiro (2013) established that indigenous practices such as totems, taboos, ceremonies, sacred, places contributed to *sustainable* conservation of forest in that area. For instance, it is noted that sacred places such as *Bvuma* mountain forest, burial places, *Runinga* and *Banga* forests have abundance forest resources. Sacred Mountain (*Bvuma*) is believed to be the abode of ancestors and is under the protection of *Shumba* (lion) totem of the *Joto* clan. Cutting down of trees in this area is highly forbidden and harvesting of insects in this area is controlled by the local leadership. It is reported that harvesting of *harurwa* and *mandere* was only allowed after the *mutoro* ceremony was held, this reduces the over exploitation of insects. It is important to note that harvesting technique used in extraction of medicinal plants such as removing bark facing the sun, covering the roots after harvesting roots and also the belief that if the plant dies the patient will also die promote the generation of trees. Another indigenous practice that effectively conserves forest resources is the rain making ceremony. Basikiti, Tshuma and Rusiro (2013) notes that *Chikona* hill is well forested since it is used as a cultural place for rain making ceremony (*makwerere*). Moreover, rainmaking ceremony is also important, as it believed to bring rain which is necessary for the life of forest resources. In the light of aforementioned literature, it is observed that indigenous practices negates the unsustainable use of forest resources and promotes sustainable management of forest resources.

This section reviewed literature on the role of indigenous knowledge in forest conservation. It indicated how indigenous practices are used in conserving forest resources. Literature was also reviewed on how indigenous knowledge is acquired and the effectiveness of indigenous knowledge in forest conservation. It is important to note that the above literature revealed that indigenous practices play a significant role in forest conservation. The next section looks at the methodological issues to the research

### 3. METHODOLOGY

This section focuses on the approach used in carrying out this research. It describes how the study population was sampled and methods, which were used to gather data. It also highlights how the data were presented and analyzed, as well as the ethical considerations made during the research.

#### Methodology

Research refers to the scientific and systematic search for pertinent information on a specific topic (Kothari 2004). According to the advanced learner's Dictionary of Current English, research is careful investigation or enquiry specifically through search for new facts in any branch of knowledge. In simpler terms, research is the search of new knowledge. The central idea of any research is the methodology. Methodology is however defined, as a way to systematically solve the research problem (Kothari 2004). This however does not only involve data collection but also involves interpretation and analysis of data. Therefore, data collection, interpretation and analysis are important in guiding research. Researchers adopt different methodologies that guide them in order to gain new knowledge. This section investigates thoroughly methodologies used in this study giving reasons for their use.

Every research starts with research question that emanate from a specific problem. In this study the central research question was:

‘What is the role of indigenous knowledge in forest conservation in Gombakomba communal area?’

This aforementioned question was however subdivided into three sub questions.

The following are sub questions for this study:

1. What are the traditional practices that promote forest conservation in Gombakomba communal area?

2. How are these traditional practices acquired?

3. How effective is indigenous knowledge in forest conservation in Gombakomba communal area?

After establishing the core research question and sub questions, the methods needed to acquire relevant data were decided upon. Methods are techniques that are used in conducting research (Kothari 2004). Research can be conducted using either the quantitative or the qualitative approach. In conducting this study, the researcher used qualitative approach. Qualitative research means any kind of research that produces findings not arrived by means of statistical procedures or other means of quantification (Kombo 2005). O'Leary (2010) notes that qualitative research provides a description of the experiences and culture of participants. Qualitative research techniques were used in order to understand the role of indigenous knowledge in forest conservation in Gombakomba communal area. Qualitative approach was preferred for various reasons which include its ability to uncover more about people's experience, less expensive, may not require large groups, and is flexible. Moreover, the qualitative approach was chosen because of its ability to provide detailed description of issues.

### **3.1 Sampling and Sampling size**

The study population for this research was the villagers in Gombakomba communal area. To extract data on the role of indigenous knowledge in forest conservation, a sample of respondents both women and men over 60 years was chosen using purposive sampling technique. The elders, village heads, traditional healers (60 years and above) were selected as respondents because they were believed to possess rich information on forest conservation. The respondents were selected with the help of the village leaders (*sabhukus*). Purposive sampling is also known as deliberate sampling or non-probability sampling. According to (Kothari 2004) purposive sampling involves purposive or deliberate selection of particular units of the universe for conducting a sample that represents the universe. Marshall and Rossman (2006) note that purposive sampling relies on the judgment of the researcher in selecting the units that are to be studied, this is usually done when



the sample being investigated is relatively small. Purposive sampling was preferred among other sampling techniques because the population of units to be studied is relatively small. Moreover, purposive sampling was chosen among other because it enabled the researcher to interview participants who possess vast knowledge of forest conservation.

### **3.2 Data collection methods**

The purpose of this study was to collect information on the role of indigenous knowledge in forest conservation. In order to meet this objective, the researcher deemed it appropriate to use in-depth interviews with key informants using semi structured questions and non-participant observation.

An in-depth interview was conducted using semi-structured questions (see Appendix C). According to Boyce (2006), an in-depth interview is a qualitative technique that involves conducting intensive individual interviews with a small number of respondents to explore their perspectives on a particular idea, programme or situation. This data collection technique was chosen among other methods because data can be obtained faster than when using any other data collection techniques. In-depth interviews were deemed appropriate since the study population were the elderly with limited education. Taking into consideration the complex issues that needed to be investigated in a short period six months in-depth, interviews were preferred in order to complete the study in time. In-depth interviews provide information that is much more detailed and provide a more relaxed atmosphere in which to collect information (Boyce 2006). Interviews were conducted in *Manyika* (Shona) the language used in the study area. The researcher interviewed participants whilst taking notes and recording. Taking notes during interviews was useful in capturing important issues on forest conservation. Recording whilst interviewing helped the researcher to capture all critical issues regarding the role of indigenous knowledge in forest conservation. Every interview lasted about 40 to 45 minutes.

Non- participant observation

Another data collection technique used in this study is non-participant observation. This technique was used to compliment in-depth interviews and to verify what respondents said was happening regarding conservation of forest. Observation method was selected in collecting data because it gives the researcher the opportunity to see tree species that were conserved (*muhute, mushakata, muzhanje, muroro, mutamba, mutsungunu, mutara, mushonjiwa etc*) and those that were overused such as *musasa, muunze, mugodo, mubvamaropa* among others. Moreover, observation technique enables the researcher to ask more questions for instance the researcher took transect walk around *Dangare* Mountain and came across black cloth tied on branches of *mutara* trees. The researcher went on to ask the meaning of this and the respondent said that its *kurasira* honoring the avenging spirits. The researcher also observed harvesting methods used by the local people to collect forest resources for instance the wild fruits, timber and firewood. Photographs on sacred places such as *Domboremhuka* Mountain, *Nyamaare* well, *Chitezambuya* forests were taken in order to provide detailed descriptions highlighted in the study.

### **3.4 Data analysis**

Data collected using in-depth interviews and observation was analyzed using the thematic approach. Thematic approach used in this study involves identifying, analyzing and reporting themes within data (Braun and Clarke 2006). This method was chosen because of its ability to summarize key features of information generated by in-depth interviews and facilitates theorization of individual accounts from participants. Thematic analysis was also chosen because it allows the researcher to link the various concepts and opinions of participants and compares them with the data that has been gathered in different situations at different times (Alhojailan 2012). Furthermore, the method is relatively easy and quick to learn and do. The results are generally accessible to generally educated public (Braun and Clarke 2006).

### **3.5 Ethical considerations**

To gain entry in Gombakomba communal area was like going home, since it is the rural home of the researcher. However, despite the study area being the researcher's home area proper channels

were followed. The researcher first sought permission to study Gombakomba from the respective councilor. The researcher took the introductory letter from the Department of Sociology to the respective councilor. The councilor then informed the village heads (*sabhukus*) about the intention of the researcher and they all agreed to take part in the research. One of the *sabhuku* notes '*Ndizvo zvatinoda izvi kuti vana vedu vemuno vazive nezvekuchengetedzwa kwenharaunda ino...*' (It is very encouraging for our children to study how to conserve resources of this area...). The introductory letter was also taken to Zimbabwe Republic police Gombakomba base for security reasons. The councilor, village heads, police as well as the respondents were informed that the research was for academic purposes. Gatekeepers and participants were fully informed about the purpose and objectives of the study. The researcher read the consent form in local language (*Manyika*) before conducting interviews. Participants were told that they have the right to withdraw at any stage of the interview process. Participants were guaranteed confidentiality in presentation and analysis of findings by using pseudonyms.

### **3.6 Limitation of the study**

Every research is bounded by certain limitations; the prime objective of this section is to outline some of the challenges faced during the undertaking of this study. In conducting this study, the researcher faced a number of challenges. The first challenge was lack of recent literature related to the study in the University of Zimbabwe library. Therefore, the researcher had to rely on electronic sources in order to gain recent literature. During interviews, some participants were not willing to share some information regarding sacred places and sacred trees especially medicinal plants claiming that it is a taboo. Another limitation was the time factor, six months was not enough to canvass all issues related to indigenous practices used in forest conservation. However, despite having a number of limitations the much appreciated efforts made by various institutions and individuals helped the researcher to overcome the limitations outlined above.

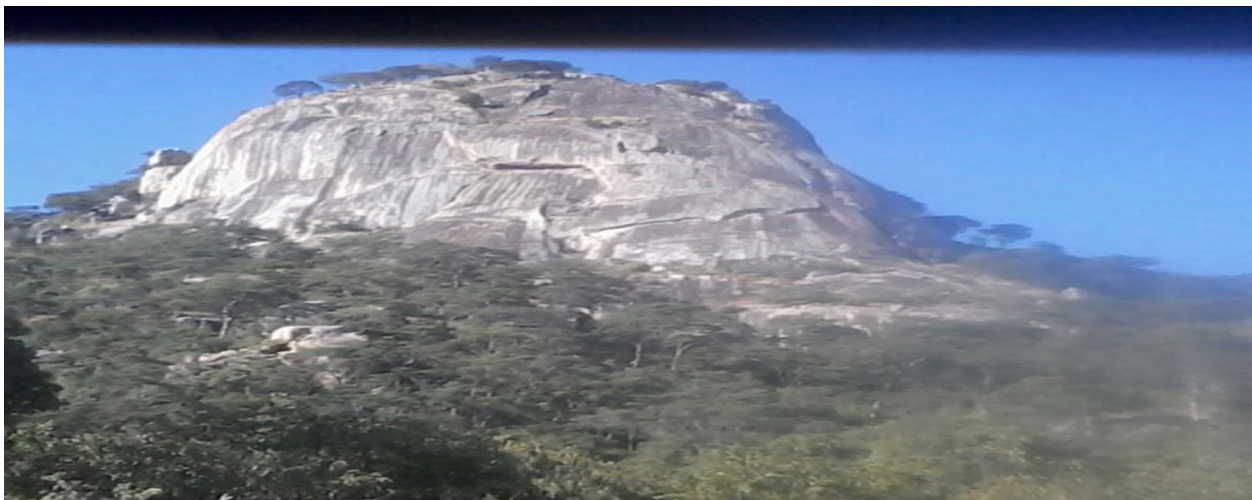
## **4. RESULTS AND DISCUSSION**

The purpose of the study was to explore the role of indigenous knowledge in forest conservation in Gombakomba communal area. In this venture, the researcher documented the existing indigenous practices used by villagers in Gombakomba communal area to conserve forest resources. The study also investigated how indigenous practices are acquired and examined the effectiveness of these practices in forest conservation. The study established that indigenous practices that promote forest conservation include sacred sites, sacred species, taboos, totem, ceremonies, harvesting methods and resting days. It is also revealed in the study that knowledge related to forest conservation is acquired from family members, members of the community and from spirit mediums. Moreover, the study established that indigenous knowledge could contribute to efficiency in forest conservation. The main objective of this section is to present and discuss the findings in thematic format.

### **4.1 Indigenous practices that promote forest conservation**

The study confirmed that sacred sites are important in promoting forest conservation. Sacred places such as *Domboremhuka* Mountain, *Dangare* Mountain, *Nyamaare* well, *Zvigadzo*, *Ruzai* and *Bubu* springs promote forest conservation.

#### **Sacred Mountains**



## 4.2 Photograph 1: Sacred *Domboremhuka* Mountain

This study revealed that there are two sacred mountains in Gombakomba communal area namely *Domboremhuka* and *Dangare* mountain. These mountains are well forested with tree species such as *musasa*, *miunze*, *mitondo*, *muzhanje* among others. These mountains are set aside because it is believed that ancestors live in these mountains. These mountains are used as burial places and trees in these mountains were not allowed to be cut because they provide shed for the dead. Sekuru Chidzi said that: “*Mumakomo umu ndimo murere madzitateguru edu, hamubvumirwi kutema miti yemo...*” (Our ancestors are buried in these mountains, cutting of trees is not allowed...). This practice is important in conserving trees and providing habitat to wild animals. Moreover, the belief helped to instill fear of violating the rules. The belief that these sacred forests are under the custody of ancestors promotes forest conservation. This is consistent with Anthawal, Sharma and Sharma (2013) study in which they observed that sacred forests are protected due to the belief that the deities lived in these forests. Malhortra, Gokhale, Chattejee and Scrivastava (2007) similarly note that sacred forests have been protected for religious practices, burial sites and watersheds.

According to participants, to enter these mountains is not allowed and harvesting of resources is prohibited. Participants claimed that two girls disappeared in *Domboremhuka* Mountain during the early eighties, when they had gone to harvest mushroom and a story of an elderly woman who was thrown off the cliff of *Dangare* Mountain and died while harvesting *tsvatsva* (sweeping brooms). It is because of these sad stories that villagers are afraid of harvesting forest resources in the mountains hence promoting the conservation of forest resources. In these mountains, it is forbidden to enter without the permission of the village head or chief this ensure preservation of forest resources. This is similar to Taringa (2006)'s study who notes that no access in sacred areas is allowed without the permission of the chief or village head. This practice is important in promoting forest conservation since forest resources remain untouched.

It is revealed in the study that traditional healers are allowed to harvest medicine in these mountains but with the permission from the village head or chief. They first perform rituals to appease the spirits. Sekuru Shumba said that: “*Varikumhepo, vana venyu varikukumbirawo mutombo.....*”(Our fathers your children need medicine...). This practice promotes forest conservation because only credible traditional healers are allowed to harvest medicine and less

forest resources is harvested. Using actor-oriented approach which holds that humans have the capacity to process social experience and have the ability to devise ways of coping with life, one can argue that villagers are knowledgeable and were capable of devising mechanisms that conserve forest resources.

### **Sacred grove (*tsoka*)**



#### **4.3 Photograph 2: Dense forest of *Marware* grove**

The study established that there is a sacred forest called *Marware*. Forest resources found in this grove are believed to be owned by ancestors and it is regarded as a taboo to cut down trees in this grove. The grove have thick forest comprises of *misasa*, *mitondo*, *miunze*, *mizhanje*, *mikute* among others. Sekuru Janga said that: “*Mutsoka umu munoera hamunongedzerwi nechigunwe, munogara varidzi venzvimbo ino, uyemiti yemo hayitemwi...*” (This grove is sacred it is where ancestors live, cutting trees or even pointing a finger is a taboo...). This belief of associating this forest with *vadzimu* (ancestors) promotes forest conservation. This is consistent with Taringa (2006) who also reported that the belief that ancestors own *rambakutemwa*, this belief contributed to forest conservation. Udeagha, Udofia and Etim (2013) also observed that sacred grove remain untouched because of the belief that deities lived in these forests.

According to participants, when harvesting *mazhanje* in this grove, shaking the tree and throwing stones is forbidden. This practice protects the tree from being damaged hence promotes forest conservation. Moreover, it is regarded as a taboo to comment the taste of the fruit. Mbuya Mwandu said: “*Mazhanje anonhongwa ndeepasi chete, hazvibvumirwi kutaura kuti zhanje*

*rakaora kanakuti ririkushata...*” (Only picking *mazhanje* is allowed commenting the taste is a taboo...) These taboos are important in maintaining sacredness and humanness thereby conserving the forest resources. This is consistent with Chirisamhuru and Masaka (2013) who observed that taboos are useful in providing moral sanctions that help to shape *unhu*. Humanness and caring of trees is shown by discouraging throwing stones and shaking the tree when harvesting *mazhanje*. In this regard, one can argue that local people are knowledgeable they taught young generation *unhu* which fosters cooperation, solidarity, oneness and common thinking which is important in sustainable conservation of forest resources.

It emerged from the study that those who break the rules were tried and sentenced by the village heads and were forced to pay hefty fines in the form of livestock or grain. One of the village head said: “*Ndipo patinodyawo ipapo, uka gura mutemo wondipawo chokudya...*” (If you break the rule, you bring food to my table...). Moreover, there is the belief that the ancestors can punish the culprit or the entire community. Sekuru Ndebvuvu claimed that culprits would lose their way home if they temper with *Marware* grove and the ancestors will send pest and wild animals to destroy the crops. It is the fear of sanctions from the traditional leaders together with sanctions from the ancestors that promotes forest conservation of *Marware* grove. Moreover, this practice of setting aside *Marware* forest as sacred sites promotes forest conservation and prevents environmental degradation. Another important point to note is the fact that children are not allowed in this grove. This practice helps in reducing the overexploitation of forest resources.

### **Burial places**

Participants also identified burial places as areas that are considered as sacred. According to participants it is forbidden to cut down trees in and around burial places. Moreover, to enter these places is only allowed during burial or during memorial service. Anyone caught in these places without the permission of the village head is tried by the village court, and a fine of a beast is usually paid. According to participants the perpetrator is labeled *muroyi* (witch). Mbuya Jimu emphasized this idea and said “*Kumarinda hakubvumirwi kutema miti ,kana kungofamba famba ikoko inzvimbo inoera asi kana urimuroyi zvako...*” (No one is allowed to cut down trees or enter burial places unless if you are witch...). It is because of this label (*muroyi*) together with taboos that helped in conservation of forest resources in and around burial places. Moreover, fear of the dead and sanctions from the traditional leadership also contribute to conservation of forest

resources found at burial places. Sekuru Pito also claimed that the Colonial government wanted to exhume graves near Mupudzi River to pave way for dam construction and the community refuses to cooperate. The villagers claimed that it was against their custom. The colonial government tried to use force but it failed due to mysterious occurrences at that grave site. Machineries such as tractors, caterpillars and trucks developed mysterious mechanical faults whenever they reached the burial place and tools such as picks, shovels, hoes mysteriously disappeared. It is because of these mysterious stories that helped the conservation of forest resources of this burial place. It was found that the all burial places were characterized with thick forest hence one can argue that burial places is one of the indigenous practice that conserve forest resources. Bhasiki, Tshuma, and Rusiro (2013) observed that burial places together with taboos have been used by indigenous people to conserve forest resources. Borrowing from Norman Longs' actor oriented approach one can argue that villagers are knowledgeable they set aside burial places and gave spiritual significance in-order to conserve forest resources. Moreover, the fact that villagers rejected the removal of burial place to pace way for dam construction. This is consistent with another principle of actor oriented approach which states that social actors are not passive recipient of intervention but active participants who process information and strategize in their dealings with various local actors as well as outside institutions and personnel.

### ***Chitezambuya Forest***





#### **4.4 Photograph 3: Sacred *Chitezambuya* Forest**

*Chitezambuya* is another sacred forest in the study area. It was found that this sacred forest is well forested. According to participants, no one is allowed to harvest forest resources or enter this forest except women of post menopause. This rule is important in making sure old women have access to forest resources and reduce pressure on forest resources. It is believed that those who break the rule will not find their way home. Mbuya Jimu said: “*Unobatwa nechahwihwi ukatema miti muchitezambuya...*” (If you cut down trees in *Chitezambuya* forest, you will not find your way home...). This belief instills fear among locals hence they desist from tampering with the forest hence promoting forest conservation. It was found that village heads played an important role in enforcing these rules. They always remind the villagers about the rules and they impose sanctions to those who break the rules. The practice of giving traditional leadership the power to enforce the rules that govern the utilization of forest resources reduces the over exploitation of forest resources. This is similar to Mawere (2012) study who also notes the important of strong traditional leadership in conserving *Jiri* forest in Norumedzo communal area. Basing on actor oriented approach one can argue that villagers are knowledgeable and capable of devising indigenous institutions that ensure sustainable conservation of forest resources.

#### **Sacred wells and springs**



#### **4.5 Photograph 4: Mikute (*syzigium cordatum*) trees covering sacred Nyamaare well**

In the study it emerged, that there are two sacred springs namely *Bubu*, *Ruzai*, and sacred well *Nyamaare*. These water sources are well forested with *mikute*, *mionde*, and *mitsamvu* making the

bulk of trees around these places. These places are believed to be associated with *njuzu* (mermaids) and trees around these areas are not allowed to be cut because it is believed that the mermaids will cause the well or springs to dry. Mbuya Jimu said: “*Miti yepamanyuko nepamatsime haitemwi mvura inooma...*” (It is a taboo to cut down trees around wells and springs they will dry...). For this reason, trees around water sources are preserved. Moreover, the myth contributes to the sacredness of these water bodies hence promote forest conservation. Using actor oriented approach, which holds that humans have the capacity to process social experience and to devise ways of coping with life. One can argue that villagers are capable of devising mechanisms such as myth and taboos to instill fear among locals in order to protect forest and water resources. Therefore, it is important to note that villagers are capable of designing ways that promote forest conservation. It also emerged from the study that traditional leaders rejected the directive from government health workers to cut down trees and cast concrete to improve hygiene of *Nyamaare* well arguing that it is against the wishes of the mermaids. This is consistent with another principle of actor-oriented approach, which posits the notion of subversion of power practiced by the relatively powerless in their bid to defend and promote interests.

#### ***Zvigadzo* (territorial cults)**



**4.6 Photograph5: *Zvigadzo* where rainmaking ceremonies are held**

It emerged from the research findings that *zvigadzo* are places that are set aside for rain making ceremonies (*mademba*) and these areas are well forested with *mushakata* making the bulk of trees. Villagers in this area conduct rain making ceremonies on the first Saturday night of October as they prepare for the rain season. Beer is brewed by the elderly women of post menopause with the help of young girls. Rapoko (*njera*) is used to brew the beer and some branches of *mushakata* tree are also used to make the beer taste good. When the beer is ready the elders of *vaera soko* (baboon totem) go to the *zvigadzo* to perform rain making rituals. It is believed that rainmaking spirits live in these places (*zvigadzo*). Trees found in *zvigadzo* are not allowed to be cut down because it is believed to be the dwelling place of rain making spirits. One of the village leaders said that: “*Ukatema miti yemuzzigadzo mvura haizonayi...*” (Cutting trees in *zvigadzo* will cause drought...). This belief instills fear among villagers that they do not touch forest resources in *zvigadzo*. Furthermore, the belief that ancestors dwell in these places promotes conservation of forest. This is consistent with Chikwanha and Tanyanyiwa (2011) who also note that *mushakata* is conserved because ancestors use *mushakata* to reach the people. Moreover, Ngara and Mangizo (2013) similarly, note that *mushakata* is associated with the ancestors. In this regard, one can argue that sacredness promotes conservation of forest and individual tree species.

According to participants, children are not allowed to enter into *zvigadzo*. This rule promotes forest conservation because people who know the importance of this site are allowed to enter. Another practice that emerged from the findings is rainmaking ceremonies. This practice promotes conservation of *mushakata* trees because the ceremonies were held under these trees. Moreover, the ceremonies are important in bringing rain needed for forest growth. Sekuru Chidzi claimed that: ‘*Tikabika doro remademba mvura inonaya...*’ (If we conduct rainmaking ceremonies rain will fall...). This is consistent with Basikiti, Tsuma and Rusiro (2013) who also underscore the importance of rain making ceremonies in enhancing growth of forests. The belief that cutting down trees in *zvigadzo* will cause drought promotes conservation of trees in and around *zvigadzo*.

### **Resting days (*Chisi* and *magarai*)**

This study unearthed resting days as another indigenous practice that promotes forest conservation. According to participants, *Chisi* is a day set aside every Thursday to honor the

ancestors and no work is done in the fields and forest on this particular day. It is believed that crops will be eaten by baboons and livestock attacked by diseases if people work on *chisi*. This practice helps in reducing the overexploitation of forest resources. Whereas *magarai* is a day set aside after burial of a village member. On this particular day the villagers are not allowed to work in the fields and forest, this is done to show respect of the dead. One village leader noted that: “*Vanhu havabvumirwi kushanda muminda kanakupinda musango zuva remagarai tinenge tichizorodza mufi...*” (People are not allowed to work in the fields or forest the day after burial...). This practice is important in regulating the use of forest resources and this shows the interconnection between natural environment and the spiritual world. Using actor –oriented approach one can argue that villagers are knowledgeable and capable of dealing with their physical environment to achieve sustainability. They set aside days like *chisi* and *magarai* meant to regulate the use of forest resources.

## Taboos



### 4.7 Photograph 6: Muzhanje (*Uapaca kirklandia*) tree left to grow in the field.

From the study, it was discovered that, taboos are one of the indigenous practices that promote forest conservation. Taboos such as the one noted by one of the participant: ‘*Ukatema miti yemichero mvura haizonayi...* (Cutting down fruit trees will cause drought). For this reason, fruit trees were conserved. Moreover, this taboo instills fear among locals that they relate well with the forest resources. This is consistent with Chemhuru and Masaka (2010) who notes that taboos

are important in forming and shaping the desirable behavior. Thus, taboos contributed to conservation of fruit trees. From the findings, it emerged that there are taboos relating to harvesting of *muzhanje*. These include discouraging the throwing of stones or sticks and commenting on the taste of the fruit. These taboos protect the tree from damage and this foster sustainable harvesting of *mazhanje*. This is consistent with the findings of Mawere (2013) study who also observed that harvesting taboos foster a sustainable ecosystem and promotes conservation of natural resources. It is important to note that in the study area there are taboos that prohibit harvesting of resources or entering sacred places such as burial places, these taboos promotes forest conservation. Sekuru Shumba reiterated that “*Hatibvumirwi kukushandisa miti yemunzvimbo dzinoera dzakaita sekumarinda kana kungopinda imomo...*” (It is a taboo to enter or harvest trees from sacred places such as burial places...). These taboos are important in ensuring that forest resources are conserved. Mapara (2009) also notes that taboos are one of the traditional practices that sustainably conserve natural resources. Osemeobo (2012) similarly notes the importance of taboos in conserving biodiversity. Borrowing from actor-oriented approach, which posits that human, are active agents who process social experience and devise ways of coping with life. One can argue that villagers were knowledgeable and capable, they design taboos to ensure that people relate well with forest resources and reduce overexploitation of resources. The study also established that taboos were used in conserving animals and birds. According to participants, it is a taboo to kill or ill-treat baboons or monkeys. The belief was that they are messengers from ancestors and their presence indicates that the area is safe from predators. Sekuru Pito claimed that: ‘*Kana uriparwendo ukasangana ne makudo munzira rwendo rwako rwakanaka...*’ (On a journey if you meet baboon it means your journey is safe...) This belief promotes conservation of the animal since villagers regarded the animal as an indicator of safety.

### **Totem**

From the research findings, totem is another practice that promotes forest conservation. This is similar to Dagba, Sambe and Shomkegh (2013) who notes that totem is as important tool in biodiversity conservation. The belief that one’s totem is associated with ancestors has helped in the conservation of animals such as baboons and monkeys in the study area. Moreover, the belief that eating one’s totem will result in the loss of teeth or cause illness promotes conservation of



animals. The study also established that people attach meanings to animals as noted by one of the participant ‘*Havanzi makudo ndiana sekuru....*’ (They are not animals but our uncles...). This practice of regarding animals as part of their family promotes conservation of animals. Moreover, one of the participants says: ‘*Isu tisu vanamakwira miti hatibvumiri vanhu vanongotema tema miti ....*’ (We belong to the baboon totem we discourage indiscriminate cutting down of trees...) The belief that they belong to the same ancestry with baboons promotes conservation of the animal and trees hence totem contributes to forest conservation. This is similar to Dagba, Sambe and Shomkegh (2013) study who observed that totems are often a basis for laws and regulations and violation and it was a violation of cultural and spiritual life to hunt or kill an animal or plant totem.

### **Harvesting methods**

This study established the harvesting practices used to harvest forest resources .According to participants in *Chitezambuya*, only harvesting of dead wood is allowed. Mbuya Mwandu noted that “*Hatibvumirwi kutema miti minyoro miti inoshandiswa ndeyakaoma...*” (Cutting down live trees is forbidden only dead wood is allowed...). This practice ensures that trees grow undisturbed and the practice is another form of conserving live trees. Another harvesting technique reported by participant when harvesting medicine is the extraction of bark facing the east and west. This practice is important because it enables the tree to quickly recover and continue to survive. Ringing the bark is not allowed, as this will cause plant mortality. After peeling of the bark they rub soil where the bark has been extracted this is essential for quick recovery of the plant. Moreover, the harvesting of roots growing towards the east and west and covering the dug up area enable the tree to continue to survive and reduces extinction of the plant. When harvesting roots, the main root is spared only secondary roots are harvested this reduces plant mortality. Sekuru Janga noted that “*Muti watorwa midzi, mashizha,kana makwande emushonga ukafa murwere haaponi...*” (If a tree harvested roots, leaves or bark for medicine dies the patient will not survive..). This belief is important in promoting sustainable harvesting of medicinal plants and ensured that the plant continue to survive when medicine is extracted.. Sekuru Shumba reiterated that “*Kana tacheru mudzi wemushonga tinofusira gomba racho kuti muti wacho usafa...*” (After harvesting herbal roots we cover the remaining roots so that the plant continues to survive...).

The study established that when harvesting *mazhanje* picking is allowed, but shaking, throwing stones or sticks is not allowed. This practice is essential in protecting the tree from physical damage. This is consistent with Mawere (2012) study, which underscores the importance of this practice in conserving *jiri* forest in Norumedzo communal area. According to participants in *Chitezambuya* forest, only women of post menopause are allowed to harvest the resources. Mbuya Jaka emphasized and said “*Miti nemichero yemu Chitezambuya haibatwi tisu chete mbuya dzakwegura tinobvumirwa...*” (Trees and wild fruits of *Chitezambuya* are not allowed to be used by anyone except women of post menopause...). This reduces the over utilization of forest resources. In *Domboremhuka* Mountain, only credible traditional healers are permitted to harvest resources. This practice of allowing a certain group of people to harvest resources in sacred areas reduces overexploitation of forest resources.

According to participants, trees such as *muwanga*, *mugodo* and *mususu* were used for construction purposes because they are strong. Sekuru Chidzi noted that “*Tinoshandisa miti yakaita semugodo muwanga kana mususu muvakisa matanga kanadzimba nokuti yakasimba..*” (We use trees such as *mugodo*, *muwanga* or *mususu* to build cattle pens or houses because they are strong...). This practice promotes conservation of trees because strong trees when used for construction last longer for this reason this reduces the over exploitation of trees. However, one can argue that because of their strength they are highly targeted hence can be overexploited. According to participants, harvesting of trees should be in an even way to avoid clearing of the area. One of the participants noted that “*Kana tichitema miti hazvibvumirwi kungotema zvokupedza yose tinotema tichisiya imwe miti...*” (When harvesting trees it is not allowed to clear the area...). The practice of leaving some trees is a conservation method that promotes forest conservation. Moreover, trees are conserved by harvesting full-grown trees.

The study also found out that when hunting certain animals are spared these include baboon, python, young and pregnant animals. Sekuru Shumba emphasized and said “*Hazvitenderwi kuvhima makudo, shato kana kuuraya mhuka diki kana ine zamo...*” (It is forbidden to hunt baboons, python, young and pregnant animals...). This practice promotes conservation of animals because by sparing young and pregnant animals, this allows animals to reproduce. Hunting is a seasonal activity, this allows animals to reproduce and reduce overhunting of animals. One participant said: “*Nguva ye zhizha haitenderwi kuvhima, vakuru venyika vanenge vachiverenga*

*mhuka dzavo...*” (Hunting is not allowed during rainy season, ancestors will be counting their animals...). This practice conserves animals especially the newborn because this is the time animals and birds give birth. Moreover, the belief that ancestors will be counting their animals promotes conservation of animals since villagers are afraid of provoking ancestors. Borrowing from Long’s actor-oriented approach one can argue that villagers are knowledgeable they devise methods such as myths that protect plant and animals from extinction.

#### **4.8 Knowledge acquisition**

From the findings, it emerged that indigenous practices relating to forest conservation is mostly acquired from members of the immediate family such as parents and grandparents. This is consistent with Setalaphrak and Price (2007) who notes that the transference of knowledge from parents and grandparents. Most of the participants reported that they acquired indigenous knowledge from their parents and grandparents. They reported that (*ngano*) stories are used to teach the young how to live in harmony with nature. Stories that glorify forest resources in which people survive on forest resources are often told to the young. Sekuru Chidzi noted that: “*Vana baba vedu vaitidzidziswa kuchengetedza zviwanikwa pachiare...*” (Our fathers taught us how to conserve resources at the family court...) This is consistent with Setalaphrak and Price (2007) who also notes that the young are taught through narratives and rituals that plants are a source of living.

This study also established that knowledge is acquired from elders through mentorship. Elders take their children into the forest demonstrating to them sustainable harvesting techniques. This is consistent with Cheikhyoussef, Shapi, Matengu and Ashekele (2011) study who also note that knowledge to conserve natural resources is acquired through mentorship. In his study conducted in Namibia, it revealed that children acquire knowledge from elders by accompanying them during medicinal plant harvest. Using actor oriented approach, which posits that human beings are endowed with knowledge and capability. One can argue that villagers are knowledgeable about sustainable conservation of forest resources and they disseminated this knowledge to the younger generation. According to participants, indigenous practices are acquired from songs. Songs such as “*Ndiyani watema muzambiringa...*” (Who cut down *muzambiringa*...) Another song “*Mubvee ndinokumbirawo nhengo yakasimba...*” that is sang during initiation of young boys into adulthood. Another song: “*Soko iwe teverera nebani, soko mukanya...*” is usually sang



to praise the rainmaking spirits. It is in these songs that young people acquire knowledge to conserve forest resources and these songs encourage people to sustainably conserve forest resources.

This study also established that knowledge is acquired from the traditional leaders who continuously taught villagers the significance of conserving forest resources. According to participants' knowledge is acquired during court proceedings. One of the participants stressed that "*Panorangwa mwana wamambo nherera teerera...*" (Whenever a villain is disciplined, others have to listen...). In this regard, it is during trial of culprits where local rules that relate to forest are acquired. It is fundamental to note that, by making traditional courts public ensures that others will learn the consequences of breaking the rules that govern forest resources. This shows that local people are knowledgeable about ways to disseminate indigenous practices related to conservation of forest resources.

The study also revealed that indigenous practices are acquired from traditional leaders during meetings, rituals and ceremonies. This is similar to Rim-Rukeh, Irehievwie and Agbozu (2013) study in which they observed that knowledge is acquired during religious rites and ceremonies. Another village head noted that "*Tinogaro yeuchidza vanhu nezvemitemo yekuchengetedza masango pose patinosangana pangave parufu, kana pamademba...*" (We constantly remind people about the indigenous practices that conserve forest resources during meetings and ceremonies...).

From the findings, indigenous knowledge to conserve forests is acquired from ancestors who speak their will through the spirit mediums through visions, dreams or during rituals. This is similar to Castellano cited in Mcgregor (2004) who notes that knowledge is acquired from ancestors through revelation from the spirits. One of the participants claimed that "*Ruzivo rwekuchengetedzwa kwamasango runobva madzitateguru edu ayo anotaurira masvikiro zvavanenge vachida maererano nenzvimbo yavo...*" (Indigenous knowledge relating to forest is acquired from the ancestors who communicated their will to the spirit mediums who inform the traditional leaders who will convey the knowledge to the villagers...).

#### 4.9 Effectiveness of indigenous knowledge in forest conservation

The study established that, indigenous practices are an effective forest conservation strategy in the area. Sacredness has contributed to sustainable management of forest resources in burial places, mountains such as *Domboremhuka* and *Dangare* Mountains. It was observed that these sacred sites were characterized by dense forests and high population of animals such as baboons, monkeys, rock rabbits, and warthogs among others. Sekuru Shumba said: “*Kuereswa kwemakomo (Dangare ne Domborembuka) kurikubatsira kuchengetedza zviwanikwa zvemo...*” (Sacred and taboos have contributed to conservation of forest resources in *Domboremhuka* and *Dangare* mountains...). In these places, no tree cutting is allowed because it is believed that the resources belong to the ancestors. Therefore, it is the need to respect the ancestors together with the fear of sanctions from ancestors and traditional leaders that villagers leave these places untouched. The efficacy of this practice is proven by the existence of thick forest in sacred places. This is consistent with a study conducted by Ngara and Mangizvo (2013) in which they observed that sacred places such as burial places, hills and pools effectively conserve forest because of high population of trees at these places. Moreover, Hens (2006) also highlighted the importance of sacred in conserving forest resources of Sefwi Wiaswo in Ghana. He reported the existence of complex ecosystem in Sefwi Wiaswo grove. The researcher also observed that sacred sites such as *Marware* grove, *Dangare* and *Domboremhuka* Mountains are characterized by thick forest. This shows that indigenous practice contributes to effective forest conservation in the area. Mani and Partharathy (2005), note that sacred forests are the remnants of well-forested areas in Southeast India. This study also revealed islands of well-forested places considered as sacred such as burial places *chitezambuya* and *zvigadzo*.

From this study, sacred contributes to the effective conservation of sacred forest such as *Chitezambuya*. Mbuya Jimu had this to say: “*Kuereswa kwe sango rechitezambuya kurikubatsira mukuchengetedza miti yemo...*” (Sacredness has helped in conservation of trees in *Chitezambuya* forest). Moreover, Mbuya Jimu underscores the importance of setting aside forest for elderly women. In her own words she says “*Sango reChitezambuya ririkubatsira isu vakwegura mukutipawo huni, mishonga ne michero...*” (*Chitezambuya* forest have helped in providing the elderly women with firewood , medicine and wild fruits...).The belief that this forest is the abode of ancestors together with the rule of permitting women of post menopause effectively conserve this forest as high population of trees proves it. The practice of permitting a certain

group (women of post menopause) of people reduces the overutilization of forest resources since the old are few and they have no energy to harvest forest resources in bulk. Moreover, cutting down of trees is forbidden only dead wood is allowed this allows trees to flourish. Using the actor –oriented approach one can argue that villagers are knowledgeable they devise rules that reduce the overutilization of resources and mechanisms that ensure the disadvantage group have access to resources.

This study found out that sacred is effective in conservation of individual tree species such as *mushakata*. It was observed that the area has high population of *mushakata* trees. The tree is regarded as sacred because it is associated with rainmaking spirits and is considered an indicator of water. One of the informants said: “*Kana tichikumbira mvura tinokumbirira tiri pasi pemushakata...*” (When asking for the rains we do it under *mushakata* tree). From the study rain, making celebrations (*mademba*) were held in places where there is high population of *mushakata* trees (*Zvigadzo*).It is because of this belief that the plant is associated with ancestors and it attracts rain that villagers conserve them and even allow them to grow in their fields. This is similar to Basikiti, Tshuma and Rusiro (2013) study that established that *mushakata* is effectively conserved because it where rainmaking ceremonies (*makwerere*) are held under these trees. Therefore, it is because of this function that *mushakata* trees are allowed to grow. It was found that *zvigadzo* are well-forested places and *mushakata* making the majority of trees.

It was found that tree species such as *mushonjiwa* and *mutara* are regarded as sacred because they are used during burial rituals. It was observed that the study area is characterized by high population of *mutara* and *mushonjiwa* trees. The branches of these trees are used to sweep the grave after burial and left on top of the grave to scare away witches. Moreover, one of the participants claimed that *mutara* is used to honor the avenging spirits (*kurasira*).These practices reduces the overutilization of the plant and only branches are used to during burial rituals, this allows the plant to grow undisturbed. Harvesting *mutara* and *mushonjiwa* branches for burial rituals is a form of pruning hence contributing to effective management of the plant. Borrowed from Long’s actor-oriented approach, villagers were knowledgeable and capable of dealing with their environments including forest resources.

Another tree noted by the participants is *muminu*; this tree is believed to cause misfortune if brought home such as death, illness or abandoning home without concrete reason. This belief

effectively conserves the plant because villagers are afraid of bringing misfortune to their families. Therefore, this plant is allowed to grow and flourish without being disturbed. However, one can argue that being regarded as a source of evil the plant is destroyed. *Munete* is another plant noted by the participants, which is not allowed to be brought home. One participant claimed that: “*Ukauya ne munete unokuvadza vana vechikomana...*” (Bringing home *munete* will cause sexual dysfunction among male children...) This belief can contribute to the effective conservation of the plant. However, one can argue that, because the plant is regarded as a danger to male children it is destroyed when ever found.

The study also revealed that taboos are effective in forest conservation in the area. Taboos that forbade villagers from cutting down of fruit trees have effectively conserve fruit trees. This is proven by the abundance of fruit trees such as *mizhanje*, *mishakata*, *mitamba*, *mikute*, *mionde*, *mitsvamvu*, and *mitohwe* even in areas not considered as sacred. Fruit trees were also found in and around fields. The high population of these fruit trees shall not be attributed to taboos only, practices such as *unhu* needs to be considered. Sekuru Pito had this to say: “*Unhu hwakanaka uye nemitewmo yenzvimbo ino iri kubatsira chaizvo mukuchengetedza miti yemichero...*” (*Unhu* and local rules have helped in conservation of fruit trees...). This is consistent with Mawere (2012) study, which revealed that taboos and *unhu* have effectively conserved the fruit trees in Norumedzo communal area. Using actor oriented approach, one can argue that villagers are knowledgeable they form rules that reduce the damage and depletion of fruit trees and to increase food security. From this study, it is regarded a taboo to cut *mushakata*, *muonde*, *mitsamvu*, *mukute* because it is believed that they attract rain. This belief contributed to the effective conservation of these tree species. This is consistent with Basikiti, Tshuma and Rusiro (2013) Ngara and Mangizvo (2013) who underscores the importance of taboos in conservation of forest.

Basikiti, Tshuma and Rusiro (2013) underscore the significance of rainmaking ceremony (*makwerere*) in effectively conserve forest resources. Similarly, this is study also established that rainmaking ceremonies (*mademba*) are important in bringing rain needed for the well-being of forest bio-diversity. One participant notes that: “*Tikabika doro remademba mvura inonaya izvi zvirikubatsira mukukudza miti...*” (If we brew beer to appease the ancestors rain will come and this has helped trees to grow...).Using Long’s actor oriented approach, local people are

knowledgeable and capable of pleading with the ancestors so that they bring adequate rain for forest growth.

Dagba, Sambe and Shomkegh (2013) underscore the importance of totem in forest conservation among the Tiv people of Nigeria. They notes that totems has effectively conserve plants and animals among the Tiv people. This study also revealed that, baboons have been effectively conserved because the traditional leaders of the area use the animal as their totem. The belief that baboons are associated with the ancestors together with the belief that eating, ill treating, killing the animal will attract the wrath of ancestors has effectively conserve these animals. The belief that baboons belong to the family ancestors contribute to the effective conservation of trees because some forests (*Domboremhuka* Mountain) are reserved for the wellbeing of the animal. This is consistent with Ngara and Mandizvo (2013) study who note that baboons are associated with the ancestors hence the animal is perceived as a human being. In this regard, totem and belief system can contribute to effective in conserving animals and forest resources. High population of baboons and monkeys in the area proves that totem is an effective conservation strategy.

This study also established that sacred sites such as burial places and sacred forest such as *Marware* grove contributed to effective conservation of animals because no hunting is allowed in these areas. The belief that animals found in sacred places belong to ancestors reduces wantonly killing of animal species. Moreover, the rule that forbade pursuing animals that runs into the sacred *Marware* forest, contribute to effective conservation of animals. This is proven by the presence of high population of baboons, monkeys and warthogs in *Marware* grove. This is consistent with a study conducted in Madagascar by Jones, Andriamarovololona and Hockley (2008), they reported the effectiveness of taboos in protecting endangered species and plants. Similarly, Hens (2006) also reported the presence of large plant and animal population in *Sefwi Wiaswo* grove. Borrowing from long's actor-oriented approach villagers were capable of coming up with practices that conserve both animals and plants.

In conclusion this section presented and discusses indigenous practices that promotes forest conservation, how these practices are acquired and the effectiveness of indigenous practices in conserving forest resources. All participants feel that indigenous knowledge played a significant role in sustainable conservation of forest resources in Gombakomba communal area. They

underscore the importance of *unhu*, sacred, taboos, totem, *chisi* and *magarai* in conserving forest resources. It is also fundamental to note that some tree species are conserved because of their role they play. Trees such as *mushakata*, *mutsvamvu* and *mikute* are conserved because they are associated with ancestral spirits. *Mutara* and *mushonjiwa* are conserved because they are associated with dead. *Muzhanje*, *mutohwe*, *muonde*, *mushakata*, *mutsamvu*, *muroro* and *mutamba* are protected because they provide food to the community. *Mubvamaropa*, *muwanga* and *mususu* are survived extinction because they are used as medicine to cure various diseases such as diarrhea, and sexually transmitted diseases.

## 5. CONCLUSION

The above discussion demonstrated that indigenous knowledge played a significant role in forest conservation. The study established that there are indigenous practices in Gombakomba communal area, which can contribute to sustainable conservation of forest resources. Indigenous practices such as sacred sites, sacred trees, totem, taboos, *unhu*, *chisi* and *magarai* are important in promoting forest conservation. *Domboremhuka* and *Dangare* Mountains are regarded as sacred and they are rich in forest bio-diversity. These mountains are believed to be the dwelling place of the ancestors and they are used as burial places. The study also revealed that sacred and taboos have helped in conserving trees around water sources such as *Ruzai* and *Bubu* springs together with *Nyamaare* well. These places are surrounded by thick forests with high population of *mikute*, *mionde* and *mitsvamvu*. Traditional leaders played a critical role in enforcing the rules that govern utilization of forest resources. The study also revealed that parents, grandparents and community members play a fundamental role in inculcating local knowledge related to conservation of forests. In this regard, one can sum up this by saying local knowledge held by indigenous people can contribute to effective conservation of forest resources. Nevertheless, the successes are premised on adopting indigenous cultural practices and strengthening traditional institutions. While indigenous knowledge has been castigated, trivialized and relegated there is, an increasing recognition that indigenous knowledge can offer an alternative conservation model that can be used as a foundation upon which many conservation projects and programmes builds on. Thus this study further reinforces the notion that local knowledge held by indigenous people is important in sustainable conservation of forest resources.

## **5.1 RECOMMENDATIONS**

In view of the research findings and conclusion the study therefore, recommends community organizations to spearhead the empowerment of traditional leaders such that they will enforce the traditional rules that govern the use of natural resources without fear. Traditional leadership should be urged to spearhead the conservation of forest resources through conservation of sacred sites such as mountains, pools, caves and burial sites. The study, also recommends community organizations to conscientize the local people about national, regional and international developments related to indigenous people's rights. Conservationists should make indigenous knowledge a rallying point in conservation of natural resources. The study also recommends integration of indigenous knowledge in schools and universities so that the young will appreciate indigenous culture and traditions. The study also recommends government and relevant stakeholders such as Forest Commission to work together with traditional leadership on conservation issues. Moreover, the study also recommends other scholars to do further research on the role of indigenous knowledge in forest conservation in other areas across the country since the findings of this study cannot be generalized to other areas.

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## 7. Appendices

### 7.1 Appendix A

University of Zimbabwe

P O Box 167

Mount Pleasant

Harare

14 November 2013

Ward Councilor

Gombakomba Primary School

P Bag 7079

Mutare

Dear Sir/Madam

**RE: APPLICATION FOR PERMISSION TO CONDUCT A RESEARCH STUDY ENTITLED;  
THE ROLE OF INDIGENOUS KNOWLEDGE IN FOREST CONSERVATION IN  
GOMBAKOMBA COMMUNAL AREA.**

I hereby apply for permission to conduct a research study in Gombakomba communal area as part of my Masters' study. I am a student at University of Zimbabwe in Sociology department under the supervision of Professor V.N Muzvidziwa. I am doing a study on the role of indigenous knowledge in forest conservation in Gombakomba communal area. I chose Gombakomba communal area because it is my home area and also because of the availability of forest resources in this area. The aim of the study is to explore the contribution of traditional practices in forest conservation in Gombakomba communal area. The study seeks to assist policy makers and community themselves and development workers to build on local culture and institutions to ensure success in their forestry research programmes. The study is going to employ in-depth interviews and observations around forest. I will also take photographs of some

forest resources. I am going to interview village leaders and the elderly both male and female (60yrs+) because they possess vast knowledge on forest conservation.

I will provide you with a copy of report upon completion of the study.

Your help is greatly appreciated

Yours faithfully

Phillip Mwatsera

## 7.2 Appendix B

### Consent Form

Dear Participant:

My name is Phillip Mwatsera. I am a student at University of Zimbabwe in the Sociology department under the supervision of Professor V.N Muzvidziwa. You are invited to participate in a research project entitled: The Role of Indigenous knowledge in forest conservation in Gombakomba communal area. The purpose of this study is to explore the contribution of traditional practices in forest conservation and to investigate how indigenous knowledge is acquired. This study has been approved by the University of Zimbabwe Sociology Department.

The following semi-structured interview was developed to ask you a few questions regarding the role of indigenous knowledge in forest conservation. I am going to use tape recording during the interview. I believe that this information can help in sustainable forest conservation. There are no identified risks from participating in this research. Participation in this research is voluntary. The interview will take approximately 45 minutes to complete. You will receive no compensation for participating in the research study. Responses to the study will only be reported in aggregated form to protect the identity of respondents. The information collected from this study will be kept in the Sociology Department, but in a form, that ensures your views anonymity. Whatever discussion we make anonymity is guaranteed.

You may contact (Phillip Mwatsera 0777842195) for further information regarding this research.

Thank you for your consideration. Your help is greatly appreciated.

Your signature below indicates that you have read the above information, and agree to participate in this study on the role of indigenous knowledge in forest conservation.

---

Signature

## 7.3 Appendix C

### In-depth interview guide

Key Informant: Village leaders/ Elders (60+)

How old are you?

How many children do you have?

What is the name of your clan?

Where did your clan originate?

How long has your tribe lived in this area?

What is your totem?

How long have you been in this area?

What benefits do you get from the forest?

What are the uses of forest in this area?

Are there any changes in forest resources in this area?

Are there any rules that are used conserving forest in this area?

Do people follow the rules? If YES/NO what are the reasons

How did your ancestors conserve forests?

Nowadays how are people in this area conserving forest?

Is there any sacred forest in this area?

What fruit trees are found in your forest? What are the rules pertaining the use of these fruit trees?

Which tree species are used for medicine purposes? How do you conserve them?

What type of wild animals are found in your forest? How do you protect these animals?



How do your domestic animals benefited from the forest?

Do you know any government laws that conserve forest?

What role is played by local leadership in forest conservation?

How did you acquire knowledge to conserve forest?

How do you transmit knowledge to younger generation?

In your opinion, do you think the use of traditional practices adequately meet the needs of the present and future generation?

Do you think the use of traditional conservation practices meet the needs of wild animals?

Do you think rules, which are used to collect fruits, enable the fruit trees to live longer?

In your opinion which laws meet the needs of the local people, government laws or local laws? Give reasons.

What position do you have in this area?

### **Non-participant observation**

Transect walk around forest with key informant

1. Observing how bark, roots, fruits, medicine, branches, firewood are collected
2. Observing trees species that have high/low population.
3. Observing construction materials such as tree species used for fencing, *matara*, *mabakwa ehuni*.

#### 7.4 Appendix D: List of tree species identified Shona and Scientific names:

<b>Shona (Manyika)</b>	<b>Scientific name</b>
Muonde	<i>Ficus capensis</i>
Mutamba	<i>Flacourtia indica</i>
Mutara	<i>Gardenia spatulifolia</i>
Mutohwe	<i>Diplorhynchus condylocarpan</i>
Muroro	<i>Annona supp</i>
Mubvamaropa	<i>Afelia quanzensis</i>
Mugodo	<i>Combretum apiculatum</i>
Mutsamvu	<i>Ficus thonningi</i>
Musasa	<i>Bracystegia spiciformis</i>
Muonde	<i>Ficus capensis</i>
Mususu	<i>Terminalia sericea</i>
Muwanga	<i>Acacia nilotica</i>
Muhute	<i>Syzugium cordatum</i>
Mutara	<i>Gardenia ternifolia</i>
Muunze	<i>Brachystea tamarindoids</i>
Mushakata	<i>Parinari curatetellifolia</i>
Muzhanje	<i>Uapaca kirklania</i>
Muminu	<i>Spirostactiys</i>

\*Munete, Mushonjiwa, Muzambiringa, Mubvee.. Scientific names not found.