AN ASSESSMENT OF GENDER ROLES AND UTILIZATION OF INDIGENOUS KNOWLEDGE IN THE MANAGEMENT OF THE FOREST BIODIVERSITY IN KAPTAMA DIVISION OF MT. ELGON DISTRICT, WESTERN KENYA

BY

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DECLARATION

This project paper is my original work and has not been presented for award of degree to any other university.

Signature.....Date.....8/11/2010.....

Mary Cheptoo Wambua

This project paper has been submitted for the award of the Degree of Master of Arts in Gender and Development Studies with my approval as a University Supervisor.

Signature.....Date.....8/11/10.....

Professor Simiyu Wandibba

DEDICATION

This project is dedicated to my adoring children: Mutheu, Mwende and Chumba. May you grow up in wisdom, grace and compassion. You have given me hope and a reason to journey on.

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ABBREVIATIONS AND ACRONYMS

AWC	Association of Women's Clubs
BPFA	Beijing Platform for Action
CEDAW	Convention on the Elimination of All Forms of Discrimination Against Women
CBS	Central Bureau of Statistics
FGC	Female Genital Cutting
FGDs	Focus Group Discussions
GED	Gender Environment and Development
IEA	Institute of Economic Affairs
IK	Indigenous Knowledge
IUCN	International Union of Conservation and Natural Resources
MDGs	Millennium Development Goals
NFLS	Nairobi Forward Looking Strategies
PRA	Participatory Rural Appraisal
WED	Women, Environment and Sustainable Development

ABSTRACT

This study aimed at assessing the gender roles and the utilization of indigenous knowledge in the management of the forest biodiversity in Kaptama Division of Mt. Elgon District. In particular, the study sought to find out the known indigenous knowledge systems utilized by men and women in the management of the forest biodiversity in the Division, the roles played by both men and women in the management of the forest biodiversity in that Division and the challenges faced by men and women in the management of the forest biodiversity. The study adopted a cross- sectional research design utilizing both quantitative and qualitative methods of data collection. Data was collected using a structured questionnaire, key informant interviews and focus group discussions.

The study findings indicate that the potential of utilizing indigenous knowledge for conservation of the forest biodiversity is enormous in Mt. Elgon but the sustainability of this knowledge is seriously threatened. This is due to the fact that there are rapid changes in the belief system, lack of documentation of indigenous knowledge and threats from human settlement.

The study recommends that more research should be done to investigate the relationship between biodiversity conservation and indigenous knowledge. There is also need to critically investigate the central role of women in the conservation and sustainable use of natural resources and how best to integrate this role into strategies for sustainable biodiversity management.

CHAPTER ONE

BACKGROUND TO THE STUDY

1.1 Introduction

The concept gender is used by sociologists to describe all the socially given attributes, roles, activities, and responsibilities connected to being a male or female in a given society (March, 1999). Our gender identity determines how we perceive, and how we are perceived, and how we are expected to think and act as women and men, in a given society. The social differences have created a set of social expectations and define behaviour that determines social, economic and political power. These power relations have historically favoured men and, in many cases, disadvantaged women in key equality dimensions. Gender, therefore, is a crucial factor in structuring the types of opportunities and life chances faced by individuals and groups, and strongly influences the roles they play within social institutions from the household to the state (Connell, 2002).

Gender roles, on the other hand, are activities that are considered by a given culture to be appropriate to women and men and reflecting a division of labour. Because women and men have different gender roles, they also have different needs and interests. Gender roles are learned as opposed to sex roles which are defined by nature. Gender roles were, and still are, traditionally divided into strictly feminine and masculine roles, though these have diversified today into many different acceptable male or female gender roles. However, gender roles and norms for women and men can vary significantly from one country or culture to another. Given these differences in roles, women and men have different needs for and use of natural resources (Oxfam, 2002).

Indigenous knowledge refers to the knowledge that some local community has regarding a certain phenomenon, issue or event and is passed down from one generation to another through channels like oral and folk tales. Indigenous knowledge is also the social capital of the poor, their main asset to invest in the struggle for survival, to produce food, to provide for shelter or to achieve control of their lives. Warren (1991) and Flavier (1995) present typical definitions by suggesting that indigenous knowledge (IK) is the local knowledge that is unique to a given culture or society. IK contrasts with the international knowledge system generated by universities, research institutions and private firms. It is the basis for local-level decision-making in agriculture, health care, food preparation, education, natural resource management, and a host of other activities in rural communities (Warren, 1991). According to Warren, very little of indigenous knowledge has been recorded, although there have been attempts by researchers locally and regionally to record it. This knowledge represents an immensely valuable data base that provides humankind with insights into how numerous communities have interacted with their changing environment including its floral and faunal resources (Warren, 1992). According to the National Research Council (1992:45), if indigenous knowledge has not been documented and compiled, doing so should be a research priority of the highest order. Indigenous knowledge is being lost at an unprecedented rate, and its preservation, preferably in data form, must take place as quickly as possible. Global awareness of the crisis concerning conservation of the biodiversity is assured following the United Nations Conference on Environment and Development held in June 1992 in Rio de Janeiro (Warren, 1992). The Summit defined bio-diversity as the variability among living organisms from all sources, including, inter alia, terrestrial, marine and other aquatic

ecosystems. It is an abbreviation for biological diversity. Biodiversity protects us from natural disasters as well as meeting our cultural and spiritual needs. The Global Biodiversity Strategy, for example, includes as one of its ten principles for conserving the biodiversity, the principle that "cultural diversity is closely linked to biodiversity". Human collective knowledge of biodiversity and its use and management rests in cultural diversity; conversely, conserving biodiversity often helps strengthen cultural integrity and values" (World Resources Institute et al., 1992:21). In the emerging global economy a country's ability to build and mobilize knowledge capital, is equally essential for sustainable development as the availability of physical and financial capital (World Bank, 1997). The basic component of any country's knowledge system is its indigenous knowledge. This knowledge encompasses the skills, experiences and insights of people applied to maintain or improve their livelihood.

Forests have been recognized as one of the world's "essential life support resources" by the World Conservation Strategy (IUCN, 2000:8). They are among the world's most biologically diverse and productive resources and are an integral part of tropical life support ecosystems (White, 1994:22). Forests are an important resource for the rural poor, with over 800 million people living in forests and woodlands in the tropics alone (World Bank, 2006:53). Forests provide fuel for a large but unqualified number of ecologically marginalized communities; they are the source of revenue and they serve as habitat for numerous species. Forests also offer materials for education and scientific research and their role as climate modifiers cannot be over emphasized. For these reasons and others, forest conservation has emerged as a major world wide concern in recent decades.

According to Jacobs (1988 as quoted by Okigbo,1992), conservation is the wise utilization of natural resources that involve maintaining essential ecological processes and life support systems, preserving genetic diversity and ensuring the sustainable utilization of species and ecosystems. Conservation, like sustainable development, is not only relevant to nature itself, but also to people; "while development aims to achieve human goals largely through use of the biosphere, conservation aims to achieve them by ensuring that such use can continue" (IUCN, 1980). Thus, conservation is that aspect of management which ensures that utilization is sustainable and which safeguards the ecological processes and diversity essential for the maintenance of the resources concerned. Conservation and sustainable development are thus mutually dependent.

Various roles are played by both men and women in the management of the forest biodiversity using their indigenous knowledge. However, in all the roles identified, men are always dominant and this constraints women's participation, yet women are critical to forest conservation in most developing counties. For example, they gather firewood, medicine and grow subsistence crops. Thus, the participation of women in planning and implementation of projects that involve forest resources is a necessary step in biodiversity conservation.

Women's needs differ from those of men, and many of the important decisions tend to overlook women's specific needs regarding forestry. This has resulted in political, cultural and economic barriers that restrict women's participation in the management of the biodiversity. Buyinza and Naguula, (2007) have noted that policy makers lack data, information and methodologies to address these constraints. Thus, if the community forestry/biodiversity management approach is to succeed, then local people, especially

women, should be stakeholders in policy formulation and decision-making. Women also have inaccessibility to forest resources and unequal opportunity to conservation.

Women normally have multiple, often disproportionate responsibilities, and little ownership or control over productive resources. This imbalance in the ownership and control of resources places women in a subordinate and disempowered position relative to men and, therefore, they are forever dependent on the latter. As a result, both men and women have contrasting perceptions, priorities and goals.

1.2 Socio-cultural aspects of the Sabaot

The Sabaot are one of the sub-ethnic clusters that constitute the Kalenjin ethnolingustic group and are therefore classified as Southern Nilotic. They are the largest of the minorities, living almost exclusively in Mt. Elgon District and the adjacent areas of Trans Nzoia District. They were among the earliest settlers of the larger Bungoma district (Were and Odak, 1985). The Sabaot comprise the Kony, Pok, Bangomek and Somek. The early history of the Sabaot is that of a people who had not in any way mastered any techniques of conquering their environment. They were limited by the freedom of movement and availability of surplus land Kisembe (1978).

In all communities around Mt. Elgon, land is passed from father to son and is hence considered a man's property. Decisions considering the use and sale of land are taken by men. Married women are given access by their husbands to utilize land for food production or for cash crops. Trees, whether planted by men or by women, are considered the wealth of the land owner and cannot be harvested without his permission (Kipsisey,

2005). Women are important users of the forest and regularly collect firewood, building materials, fodder, wild vegetables, fruits and medicinal herbs.

Some of the gender concerns in the district include the fact that women are considered the property of men, and therefore regarded as being inferior to the latter. Boys are given preference in many aspects including education. They are considered weak in terms of decision-making. They are culturally expected to be married, and are therefore not allowed to inherit any property. Female genital cutting (FGC) for girls ensured cultural preservation and identification for women. As regards the traditional division of labour, men were involved in fencing of farming fields, clearing and tilling the soil. Women on, the other hand, milked cows and did the reproductive roles.

Other challenges facing the district include gender bias in access to and control of property, poor natural resource patterns, landlessness, insecurity, environmental degradation, ignorance in management of resources and lack of investments. The cross-cutting issues likely to affect the development in the district include high population growth, poverty, HIV/AIDS, disaster management and environmental conservation and management.

1.3 Gender roles in biodiversity and forest conservation

There is increased recognition of the value of indigenous knowledge, as well as women's and men's roles as innovators in biodiversity conservation. Recent Women, Environment and Sustainable Development (WED) publications depict women as privileged environmental managers because of their intimate knowledge of natural processes due to their closer relationship with nature. Women are seen as the answer to the crisis; women

have the solutions; and they are privileged custodians of natural processes (Visnavathan, 1997). It should be noted that women's participation in forest conservation practices is generally low unless they are targeted specifically. Historically, there has been a male bias in development programmes research, planning and implementation of activities, which ignores women's role in forest management and the challenges that they face. Moreover, women generally do not participate in the decision-making processes in the community. However, it should also be noted that an overemphasis on women's roles can be equally detrimental. Many analyses are focusing on women's roles as resource managers whose indigenous knowledge is critical for land and biodiversity conservation, while completely overlooking the important roles and indigenous knowledge of men.

As gender roles change over time and in response to changing circumstances (Rocheleau, 1995), no particular kind of knowledge can be associated with men or women as such, but with their culturally constructed and sanctioned behaviour and attributes. Women's relationship with nature, as well as the attributes that would make them develop more sustainable practices, are culturally defined and thus evolve with cultural change. Gender roles in natural resources and management, and forest management for that matter, vary from setting to setting, and over time within the same setting.

Environmental change has itself also changed gender roles. Women's increased access to (and control over) resources helps them to gain confidence, to participate actively in decision-making and policy-making and to deal better with the impacts of environmental change, especially in poor degraded forests. It also allows them to negotiate their extra work burden and thus attain a more balanced division of labour in a redefinition of roles. Increased access to and control over resources also helps women to make up for

detrimental environmental impacts (Heyzer, 1995) because empowered women can select from a wider range of ways to deal with degradation. In turn, women's efforts to combat desertification (land reclamation, reforestation, and irrigation systems) lead to increased self-confidence as well as improved natural resources management, financial management and negotiating skills. Women are depicted as "naturally" privileged environmental managers who, over generations, have accumulated specific knowledge about natural processes that is different and more appropriate than that of men in general (Visvanathan, 1997).

1.4 Problem Statement

Women are generally acknowledged as key players in conservation of any biodiversity. However, their central role in the conservation and sustainable use of natural resources has been overlooked and disregarded by the society due to the concept of patriarchy. In most African societies, men's role in the utilization and management of natural resources is greatly appreciated than that of women. One implication of this is that half or more of indigenous ecological science has been obscured by the prevailing invisibility of women, their work, their interests and especially their knowledge (Rocheleau, 1991). On the issue of gender division of labour and natural resources management, it has been found that Kenya is a strongly patriarchal society and many discriminatory gender distinctions are deeply entrenched in social, cultural and political institutions (IEA, 1998).

Indigenous knowledge (IK) which refers to the unique, traditional, local knowledge existing within and developed around specific conditions by women and men indigenous to a particular geographical area, is given little or no attention by researchers when

considering sustainable environmental conservation strategies (Omosa and Maundu, 2008).

The central role of women in the conservation and sustainable use of natural resources has been overlooked in studies on biodiversity, most of which have been done from the perspective of natural science. By not acknowledging women's *de facto* role as conservationists and giving them support where possible, governments and international agencies risk losing a valuable ally in the fight to conserve the environment. A gender perspective is very relevant even in areas which are considered more technical such as climate change (Masika, 2002). Making access to land and environmental resources equitable is one way to achieve development. The Millennium Development Goals (MDGs) recognize the need to promote gender equality and empower women, the need to alleviate poverty and ensure sustainable environmental management. According to Boserup (1970), feminist critiques of development have identified the marginalization of women from the means of production as a critical factor in the subordination of women.

As is the case currently, the forest resources in Mt Elgon have been depleted due to rapid increase in population and demand for human settlements, agricultural activities, grazing and sourcing of agricultural materials, fuel wood and herbal medicines. These activities severely affect the ecosystem. The amount of soil loss annually in the district is 780 tones per hectare per year (Kenya, 2002).

In general terms, this study attempted not only to reconcile gender roles and indigenous knowledge approaches to forest biodiversity conservation but also sought to recognize gender roles as well as indigenous knowledge in the conservation of Mt. Elgon forest. The study therefore sought to answer the following research questions:

1. What are the known indigenous knowledge systems utilized by men and women in the management of the forest biodiversity in Kaptama Division?

2. What roles are played by both men and women in the management of the forest biodiversity in that Division?

3. What challenges do both men and women in the division face in the management of the forest biodiversity?

1.5 Objectives of the Study

1.5.1 Overall objective

To assess the gender roles and indigenous knowledge in the management of the forest biodiversity in Kaptama Division of Mount Elgon District

1.5.2: Specific Objectives

1) To identify the indigenous knowledge systems and approaches in the management of the forest biodiversity in Kaptama Division.
2) To explore the roles played by both men and women in the management of the forest biodiversity in the division.
3) To describe the challenges faced by both men and women in the management of the forest biodiversity using indigenous knowledge.

1.6 Justification for the study

It should be acknowledged that both rural men and women have a wealth of traditional knowledge relating to conservation of the forest biodiversity and they are also aware of the interconnections between their well-being and the sustainable use of these natural

resources. According to Warren (1992), indigenous knowledge, particularly in the African context, has been ignored and maligned by outsiders. He, however, points out that a growing number of African governments and international agencies are recognizing that local knowledge and organizations provide the foundation for participatory approaches to development that are both cost-effective and sustainable. Gender role analyses regarding forest biodiversity conservation have revealed that the utilization of forest resources is largely assigned to women. Similarly, responsibility of transfer of this knowledge to the future generations is women's domain. Women make up a large number of the world's agriculturists. In their day to day work, they draw on their traditional and often extensive knowledge of soil conservation to affect techniques such as terracing, crop-rotation and agro forestry.

It is often women who recognize the importance of the preservation of indigenous trees. This has been the case in places such as India, Senegal and Kenya. In this respect, professional researchers and planners stand to learn from local people, particularly women. In local forestry and forest management, women are playing an increasingly important role. Examples include the Green Belt Movement in Kenya started in 1977 by the National Council of Women of Kenya with the main objective of awareness-raising and the prevention of deforestation by tree planting. In Zimbabwe, following the drought of 1982-4, the Association of Women's Club (AWC) and its members throughout the country came to realize the importance of maintaining the environment by planting drought- resistant indigenous trees (Oxfam, 2002). In India, local forests established by women have a much higher survival rate after ten years than those which have been planted by the government (IUCN, 1980).

However, due to increased recognition of the importance of forest resources, and acute poverty among indigenous people, sustainable utilization of forest resources is threatened. According to Dankelman and Davidson (1998), the accelerating degradation of the living environment is the latest and, in many ways, the most dangerous of the threats women face. This implies that there is need to assess and recognize gender roles and incorporate indigenous knowledge for sustainable forest management. Making access to land and environmental resources equitable is one way to achieve development.

This study is thus significant for it has attempted to relate to studies that have been done within and outside the region on enhancing forest management techniques that build on gender roles and the application of indigenous knowledge. As it is today, however, not much research has been done on the assessment of gender roles and utilization of indigenous knowledge in the management of forest biodiversity within this region of Kaptama in Mt. Elgon. Thus, the study attempted to bridge the existing information gaps and lay ground for integrating traditional knowledge and gender roles as a basis for resource management in Kaptama division.

1.7 Scope of the study

This study focused on the role of indigenous knowledge, and gender roles by the Sabaot of Mt Elgon in the management of their forest biodiversity. Geographically, the study confined itself to Kaptama division.

1.8 Limitations of the study

The study was limited to assessing the gender roles and the utilization of indigenous knowledge in the management of the forest biodiversity. Since the study adopted qualitative methods of data collection, any limitation was solved through the use of triangulation.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In this chapter, literature pertaining to the study topic is reviewed guided by the objective of the study in order to have an overall understanding of the gender roles and indigenous knowledge in the management of the forest biodiversity. The theoretical approach to study is also described.

2.2 Indigenous knowledge and the management of the forest biodiversity

Through the centuries, the Ogiek have practised methods of conserving and preserving the Mau's natural resources. In doing so, they have become the protectors of the forest. Honey is collected year-round in beehives shaped in the form of hollow logs made from the barks of trees (Obare & Wangwe, 1998). The stripping of bark requires expertise and knowledge so as not to harm or damage the trees. The special care and attention placed on bees, beehive manufacturing, and honey collection is supervised by the elders who control the quantity and quality of beehives thus guarding against the overuse of trees.

The Ogiek familiarity with the flowering season and pollination practices of the bees is the result of centuries of forest life (Sang, 2002). This has led to a symbiotic relationship between the forest and the Ogiek. Trees in the forest in the past, among the Maasai, could not be cut indiscriminately without regard to their sacredness and influence on the wellbeing of the entire community. Rivers and waters were respected as part of nature. The Maasai in general had, and still have, traditions and customs that are deeply rooted in

nature and this has played a big role in helping them to protect and preserve their environment for future generations. This is due to the fact that they always believe that their land and rivers are not just resources to be exploited but have great spiritual significance. They always view their land and forests as the abode of their ancestors and thus sacred.

At the Nairobi Forum (1985), held parallel to the UN Women and Development Conference(1985),women's actions and special role in environmental management were presented in case studies that documented women's involvement in forestry, agriculture and energy. Women were portrayed as environmental managers whose involvement was crucial to the achievement of sustainable development. One of the main conclusions from the workshops was that women bear the highest costs of the environmental crisis because of their roles in providing water, food and energy at property and community levels (Oxfam, 2002). In addition, the Convention on the Elimination of all Forms of Discrimination Against Women (CEDAW, 1989), the Beijing Platform for Action (1995) and the Nairobi Forward Looking Strategies (1985) all underscored the need to secure women's rights to land and resources.

Among the Maasai, as with other communities, natural resources are an intrinsic part of the life of the indigenous community. These resources provide not only the base for their livelihood but are closely linked to their culture and spiritual beliefs because these hold their sacred places. This is due to the realization that humans are part of nature and have the responsibility to keep the balance and harmony in the ecosystem (Shilabukha, 2007). Studies have pointed to the fact that strategies that work with and through indigenous knowledge and organizational structures have several important advantages over projects

that operate outside them. Indigenous strategies provide the basis for grassroots decision-making, much of which takes place at the community level through indigenous organizations and associations where problems are identified and solutions to them are determined. Solution-seeking behaviour is based on indigenous creativity, leading to experimentation and innovations as well as the appraisal of knowledge and technologies introduced from other societies.

The use of traditional knowledge in forest management, for example, has assisted a lot in management of Kaya forests in the coastal region of Kenya. Traditional knowledge is a vital role in environmental management and development. The Kaya forests of Coastal Kenya are relics of the once extensive Zanzibar- Inhambane lowland forest (Shilabukha, 2007). These small and fragmented patches - ranging from 10 to 300 hectares- have only survived through traditions cherished by village elders who respect kayas as sacred places. The natural history of the Kayas is remarkably rich. These high biodiversity forests and woodlands cover areas of between eight and 80 hectares in the coastal plains and hills of Kenya, forming reservoirs of extraordinary life. Despite challenges, Kayas have a record of 187 plant species of which two are unique to the region: the Endangered *Ziziphus robertsoniana* and an un-described species only known from Kaya Kinondo and one nearby forest. The forest is also rich in fauna with more than 48 bird species recorded in the area (Shilabukha, 2007).

Gender roles and the management of the forest biodiversity

In most communities, men were given all the powers and privileges regarding the use and conservation of forest resources. They were the ones who determined the extent to which the forest resources were to be used.

Gender roles around the globe put women in direct contact with natural resources such as forests, water, land and wildlife. Women utilize and conserve these resources to supply basic needs for their families. Therefore, conservation of the natural resources in rural areas cannot be done without the involvement and training of women. Women have profound knowledge of the plants and animals in their living environments. Traditionally, they use a variety of indigenous species – trees and other plants, and even animals, a multifunctional approach which promotes the preservation of these species. They need to be educated on the values, management and sustainability of natural resources as alternative sources of livelihood. But to have success, they must not only be appreciated as invisible land managers, but must benefit from relevant incentives in their cultural roles.

Many rural women have developed considerable expertise in the practical application of resources from various tree species. According to Rocheleau (2001), a survey in Sierra Leone revealed that women could name 31 products that they gathered or made from nearby flora, while men were able to name only 8. In addition, among the Maasai, women's roles in the conservation of natural resources and the environment were and still are commendable. For example, they pinpoint species of trees that will be used for construction of houses, fencing of animal holding areas, medicines, cleaning, and so on. They also know where the animals that are left behind while the rest go out to graze will

be taken for their pastures. Rural women are generally careful to conserve forests and have a strong interest in safeguarding the supply of wood products. They obtain fuel by collecting dead logs rather than cutting living trees, and are often active in tree- planting efforts (Davidson, 1989:17). The Chipko movement that arose in the 1970s in a rural area of Uttah Pradesh in India and involved women hugging trees to prevent their felling by logging companies, is often cited as a good example that supports this view (Oxfam, 2002).

2.4 Challenges faced by men and women in the management of the forest biodiversity

The role that local women play in conservation has been little recognized by environmental organizations. Among the Ogiek, for instance, a medicine woman had to first seek permission from the elders before she could go out to fetch herbs, tree barks, leaves or roots for her work. Failure to do so would earn her a severe reprimand from the elders and men in general Sang (2002). This was because of the view that men are the sole custodians of culture and traditions. Among the Miji Kenda the cultural dictates could not give women centrality in the conservation of the kaya forests. This was confounded with other issues like patriarchy. Women are not allowed to enter these sacred forests while they are menstruating or just after child-birth. The local communities believe that the deities or spirits will become angry if these rules are broken, and may bring down punishments such as drought, diseases, floods or unexpected deaths. Women and young people are forbidden by traditional law from taking part in the meetings of the elders; this means that the main users of the forest are totally sidelined (Kibet, 2002).

Women in rural areas are more linked to natural-resource use and conservation than men, for their traditional gender roles bring them into daily contact with natural resources such as land, water, forests and wildlife (Oxfam, 2002). They have to use these resources because they are often poor and their livelihood most depends on these resources. When these resources are exploited and ruined, women suffer most. On the other hand, if they are used sustainably, women benefit most. Most women want to act and be recognized for what they really are: managers of natural resources.

Women would nurture and conserve most of the resources such as trees but rarely would they benefit financially from them. This is because the women did not have rights of ownership thereby leaving men as the sole beneficiaries. Their caretaking and conservation role was appreciated but they would be denied the right of utilization and control over the resources. Due to the patriarchal structure in most societies, women were not allowed to utilize the resources without the consent of men. For instance, the consent of the man would be required in order for a woman to cut a tree. All the same, the traditional strategies used in the management of resources were effective and kept most of the communities going and should be encouraged and improved (Sang, 2002).

2.5 Role of patriarchy in gender inequality

Patriarchy has played a major role in the inequality that exists between men's and women's participation in the conservation of natural resources. The term patriarchy has been defined in a variety of ways, but basically refers to a whole complex of structured interrelationships in which men dominate over women. Patriarchal authority is based on male control over the female capacity and over her person (Rowbotham, 1973). It is a

system of sexual hierarchical relations (Eisenstein, 1981:19). Since the early 20th century, feminist writers have used the concept to refer to the social system of masculine domination over women and considered it as the primary and fundamental social division in society (Pilcher and Whelehan, 2004). According to Koenig and Foo (1985 as quoted by Ghorayshi and Be'langer,1996), patriarchy is a system of social stratification and differentiation on the basis of sex that provide material advantage to males while at the same time placing severe restrictions on the roles and activities of females. Patriarchy restricts women's access to economic resources such as land, credit and extension services and also explains men's attitude towards women in society and the neglect of women in the planning process (Ghorayshi and Be'langer, 1996). Goldberg (1973, as quoted by Frieze et al 1978), says that in all known cultures, males are dominant over women of equal age and status. Men occupy the highest status positions, exercise primary decision-making and political power, and tend to be dominant at interpersonal levels as well. From the arguments above, no matter what specific activities men and women engage in, the roles played by men are valued more by society than the roles played by women. Patriarchy is thus the system of male oppression of women. In some radical feminist analyses, the institution of the property is identified as a key means through which men's domination is achieved Millet (1977 as quoted by Pitcher and Whelehan, 2004).

It can be concluded that the role played by men and women in the conservation of natural resources using traditional strategies varied from one culture to another. But the converging point is that women's involvement has been minimal. This is to say that though they were the direct beneficiary of natural resources, they mostly do not have

much say in its management as a whole. It should be noted that women's access to, and use of, natural resources is different from that of men as a result of the gender division of labour.

2.6 Theoretical framework

This study was guided by the theory of political ecology. The term political ecology was first coined by anthropologist Eric R. Wolf (1972) in an article entitled "Ownership and Political Ecology," in which he discusses how local rules of ownership and inheritance mediate between the pressures emanating from the larger society and the exigencies of the local ecosystem (Wolf 1972: 202). Other early proponents include John W. Cole and Hans Magnus Enzensberger in the late 1970s and 1980s. The theory further got a jerk when Blaikie and Brookfield elevated political ecology into an emerging paradigm for human-environment research (McCabe, 2004: 31).

The central idea behind political theory is the combination of ecological analysis with that of political economy with a focus on the use and management of natural resources at the local level. Political ecology incorporates historical, political, and economic analyses within a scalar framework. How resources are used and the institutions that govern that use are examined at local, regional, national, and international levels (McCabe, 2004: 32). According to this theory, there exist a unique relationship between political, economic and social factors with environmental issues and changes which need to be studied.

Sutton (2004), for instance, advances his argument that through political ecology, investigating and eventual understanding of the day-to–day conflicts, alliances, and negotiations that ultimately result in some sort of definitive behaviour affects or

structures resource use. Sutton posits further that it is a matter of who is involved and what they eventually want the outcome to be, such as the community members and the key normative institutions that control the land and its resources. Renowned theorists such as Michael Watt focus on political impacts on access to environmental resources. His central approach tends to categorize environmental harm as both a cause and an effect of "'social marginalization'" (Paulson et al., 2003). This gives a pointer that at its core, political ecology makes great strides in attempting to contextualize political and ecological explanations of human behaviour.

This theory focuses on issues of power, recognizing the importance of explaining environmental impacts on cultural processes without separating out political and economic contexts. These approaches tended to emphasize local, minority, and indigenous knowledge, while moving away from privileging a Western nature-culture dichotomy.

2.7 Relevance of the theory to the study

The theory is relevant to this study because it advocates for the protection of protected biodiversity which, according to Hanna et al. (2003), is unsurprisingly given political ecology's overall interest in forms of access to, and control over resources. The theory further argues that the local people must in some cases show that they are as important as the area which they occupy, despite the thought that those who engage in the utilization of forest biodiversity are seen as doing harm.

It is a reality that most people have occupied a given area since time immemorial and for many generations, for example, the Ogiek of Mau forest and, because of their practices,

can also be seen as an important aspect of the area. Just as Dove and Carpenter (2008) state. indigenous people have important environmental knowledge which could contribute to conservation. However, some people are removed from the land, gender roles are not appreciated and the indigenous conservation knowledge is disregarded.

It should be noted that forest biodiversity protection will depend, in large part, on restoring the balance between gendered rights and responsibilities and on an integrated vision of livelihood, life support and life-for-its-own sake. This implies that the coexistence of farming communities with distinct and diverse assemblages of plant and animal species in particular places is embedded in gendered relations between people and with other life forms (Rocheleau, 1995). The complementary, conflicting and collaborative work and knowledge of women and men are changing rapidly in response to the restructuring of local economies, ecologies and culture - a process connected to global economic and political forces.

Due to gender imbalance, political ecology advocates for a feminist political ecology approach to address this disparity or imbalance between rights and responsibilities in resource management and its effect on rural people's abilities to maintain diverse livelihoods and complex landscapes and to protect the distinct ecosystems on which they and many other species depend on.

The theory emphasizes that if the community's management approach of forest biodiversity is to succeed, the local men and women should be stakeholders in policy formulation and decision making. As regards ownership and control over productive resources, including the forest biodiversity, women have inaccessibility to forest

resources and unequal opportunity to conservation and yet they have intimate knowledge of natural processes due to their closer relationship with nature. The theory is also relevant because it points to the fact that governments and other relevant institutions should have policies in place that take into account both men's and women's needs for access to and control over resources. In addition, attention to gender differences in property rights can improve the outcomes of natural resources management policies and projects in terms of efficiency, environmental sustainability, equity and empowerment of resource users.

CHAPTER THREE

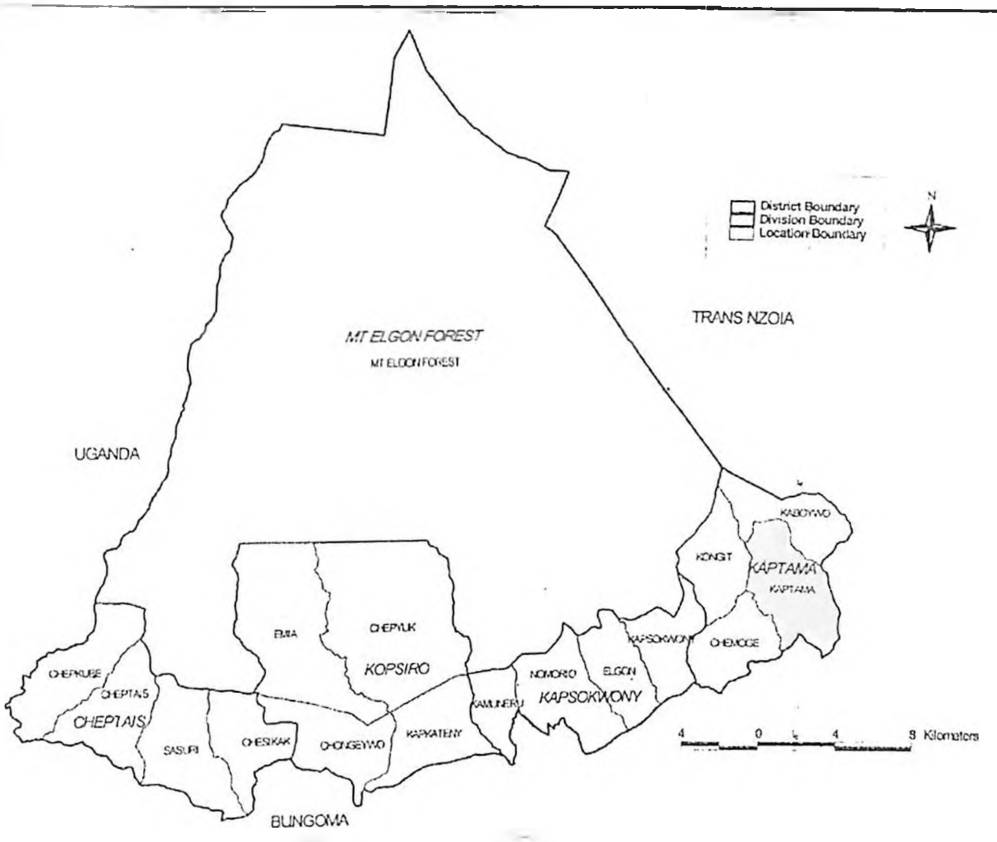
METHODOLOGY

3.1 Introduction

This chapter describes the research site, research design, study population, sample size, population sample, sampling techniques and methods of data collection and analysis.

3.2 Research site

This study was carried out in Kaptama division of Mt Elgon district (Map 3.1). Mt Elgon is one of the eight districts in Western Province. The district borders the Republic of Uganda to the north and west, Trans Nzoia to the east, and Bungoma district to the south. It occupies an area of 936.75 km^2, with Mt Elgon Forest occupying 609.6 km^2. The district is divided into four divisions namely Kapsokwony, Kaptama, Kopsiro and Cheptais.



Map 3.1: Mt Elgon district

Source: CBS (1999)

Kaptama is composed of four locations and eight sub-locations. It has a total area of 209.95km^2. The main economic activities in this area include farming, livestock keeping and honey harvesting. The main inhabitants of this division are the Sabaot, a Kalenjin speaking people. The main challenges facing the district include natural resource management of the Mt Elgon ecosystem, high population growth, poverty, poor infrastructure, harmful traditional practices and gender inequality (Kenya, 2002).

Mt Elgon, whose name the district bears, is the fourth highest mountain in Africa and the second highest in Kenya, rising to 4,320 meters above sea level. It is situated on the international border between Kenya and Uganda and it is an important natural resource

for both countries providing livelihood and intrinsic values to the local communities. The forest provides trees for fuel and other products essential to meeting the needs of the households, for example, fodder, grazing and ethno botanical values. Forest and forest lands provide food and the ecological balance necessary for sustainable socio-economic development (Kenya, 2002). In addition, the forest and forest products, for example, timber provide raw industrial materials for income generation and direct employment for more than 500 households in the community (Kipsisey, 2005). The mountain has rich natural forest endowed with valuable timber trees such as Elgon Teak, Cedar and Elgon Olives. Edible vegetables, fibre fruits and traditional medicinal plants are found. The forest is also a habitat for a variety of wild animals such as elephants, buffaloes, leopards, waterbucks, baboons, reptiles, butterflies, bees and other micro-organisms. Finally, the forest offers good ground for research and development.

Mount Elgon plays an important role as a water catchment and is one of the five main 'water towers' of Kenya. It is the main catchment area for two major rivers: Nzoia and Turkwel rivers. It also provides water to the Malakasi River that crosses the small-farming area south of the mountain before entering Uganda. Nzoia River is a critical water source for Western Province where it provides most of the water to highly populated areas before flowing into Lake Victoria.

3.3 Research design

This was a cross-sectional study and it utilized both quantitative and qualitative methods of data collection. Quantitative data was collected through structured interviews, while

qualitative data was collected through key informant interviews and focus group discussions.

3.4 The study population and unit of analysis

The study population consisted of adult men and women above 18 years who reside in Kaptama Division. The unit of analysis was the individual adult man and woman in the household.

3.5 Sample population

The sample population consisted of 60 respondents (30 men, 30 women). These are the individuals who responded to the structured questionnaire.

3.6 Sampling procedure

The divisional records and registers from the chiefs were used to generate lists of households. Simple random sampling was employed to get 60 households from two sub-locations, each sub-location giving 30 individuals (15 men, 15 women). Since the interest was on management of forest biodiversity, those households which border the forest were purposively sampled for the study. The key informants were purposively chosen on the basis of their professions and indulgence in forest management. FGD participants were purposively sampled according to their locations.

3.7 Methods of data collection

3.7.1 Structured interviews

A structured questionnaire consisting of mostly open-ended questions (Annex, 1) was used to collect data from the respondents in face to face interviews. This included data on socio-demographics of the respondents, indigenous knowledge systems, gender roles, management of forest biodiversity and challenges to the application of indigenous knowledge in managing the forest biodiversity.

3.7.2 Focus group discussions

The FGD groups were composed of homogeneous members of the target population who were similar in gender and continuous residence in Mt Elgon district. This was important because it allowed the discussants to fully participate in the discussion as well as provide a diversity of perceptions and opinions. FGDs stimulated new perspectives and ideas among the participants and elicited complementary views and opinions. The FGDs were undertaken with selected participants from the 2 sub-locations with a view to getting information on various aspects of management of forest biodiversity. A total of 2 focus group discussions were conducted, one for men and another for women. A discussion guide (Annex, 11) was used to guide the discussions.

3.7.3 Key informant interviews

These involved in-depth discussions on specific topics with strategically selected informants. The informants included the management of the forest department in Mt Elgon district, environmental specialists, officers in government ministries, women leaders as well as village elders. Other key informants comprised of the selected professionals and lay persons knowledgeable in application of indigenous knowledge to

the management of the forest biodiversity. Information sought from these informants was on individual observations on social and natural changes on the environment. One key informant interview guide (Annex, 111) was used.

3.7.4. Secondary sources

The study also utilized secondary data sources. Documentary materials such as journals, books, articles and the internet were reviewed prior to and after the fieldwork. Relevant literature on gender roles in management of diversity utilizing indigenous knowledge were reviewed to provide background information and were relied on throughout the entire process of the study.

3.8. Data analysis and presentation

Since both qualitative and quantitative data were collected, two major methods of data analysis were employed. Data from structured household questionnaires were analyzed using the statistical package for social sciences (SPSS, version 18) computer programme. Answers to the closed questions were variably coded and then entered into the computer and the findings presented in tables of frequencies and percentages.

Data emanating from focus group discussions and key informant interviews were organized, summarized and presented in verbatim quotes. At the same time, content analysis was used to obtain the implication and the rationale behind a given response.

3.9 Ethical considerations

A research permit was sought from the government ministry in charge of research activities in the country to avoid breaking the law. Informed consent from the respondents was obtained. Essentially, the prospective research participants were fully informed about the procedures and risks involved in research and then requested to give their consent to participate. They were informed about the purpose of the research, the duration and use of the research findings. The respondents were also informed that they were at will to withdraw from the study should they feel like doing so. Ethical standards also required that participants were not to be put in a situation where it was felt that they might be subjected to risky situations or harm as a result of their participation-both physical and psychological. The participants were guaranteed confidentiality. They were assured that the information they gave would not be made available to anyone who was not directly involved in the study. The principle of anonymity ensured that the participants remain anonymous throughout the study.

CHAPTER FOUR

GENDER ROLES AND THE UTILIZATION OF INDIGENOUS KNOWLEDGE IN THE MANAGEMENT OF THE FOREST BIODIVERSITY

4.1: Introduction

This chapter presents the findings of the study and the discussion thereof as per the study objectives. Quantitative data presented in form of frequency and percentage tables and charts were generated using the computer software Statistical Package for Social Sciences, Version 18 (SPSS, V 18.0) while qualitative responses were analyzed through pragmatic content analysis. The chapter covers the demographic profile of the respondents, the indigenous knowledge systems and approaches in biodiversity management, gender roles in the management of forest biodiversity and challenges experienced in the application of both gender roles and indigenous knowledge in the management of forest biodiversity.

4.2: Demographic profile of the respondents

Gender plays a big role in the determination of which particular group plays a given role in any given society. Bearing that in mind, the study sought to determine the gender status of the respondents. The findings show that 50.8% of the respondents were female while almost a similar percentage (49.2%) was male (Table 4.1)

Table 4.1: Respondents' gender

Gender	Frequency	Percentage
Male	29	49.2
Female	30	50.8
Total	59	100.0

4.3: Respondents' age

The study also sought to know the respondents' age because age is important in providing an insight into the application of indigenous knowledge and how it has been enforced up to the current generation. Those aged 38-42 constituted 18.6% of the respondents while those aged 48-52 made up 13.6% of the respondents. It should also be noted that those who aged 18-22 comprised 5.1% [illegible] (Figure 4.1).

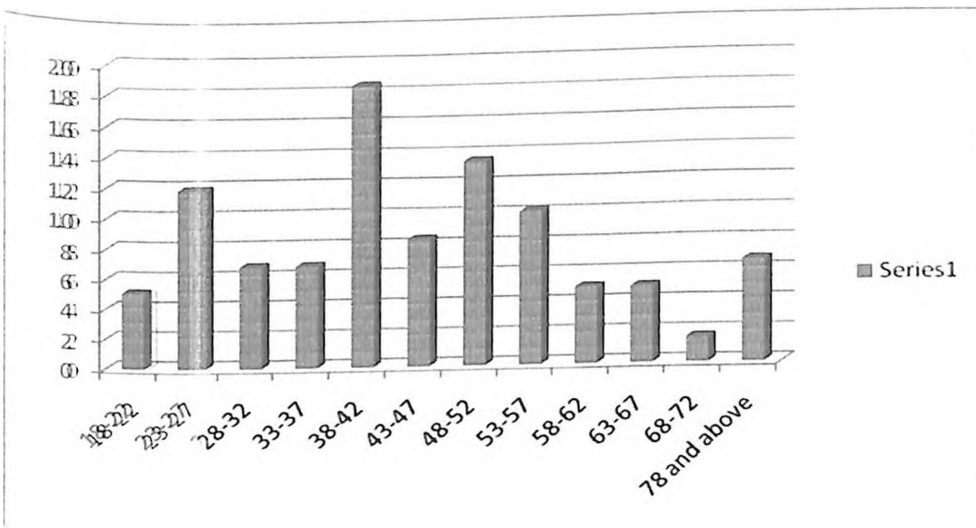


Figure 4.1: Respondents' age

4.4: Respondents' educational level

The study also sought to find out from the respondents the level of education attained. This is because education gives an insight into the level of awareness on gender equality and gender roles in management of the forest biodiversity. Education is also an indication of knowledge on indigenous roles.

The findings suggest that only 30.5% of the respondents had reached secondary school level but could not complete it. Again it can be seen that 32.2% had reached primary level but had not completed it. Those who had no formal education comprised 13.6% while those who had tertiary education level constituted 5.1% of the respondents (Table 4.2).

Table 4.2: Education level of the respondents

Educational level	Frequency	Percentage
Didn't indicate	1	1.7
No formal education	8	13.6
Primary completed	5	8.5
Primary not completed	19	32.2
Secondary completed	5	8.5
Secondary not completed	18	30.5
Tertiary Institution	3	5.1
Total	59	100.0

4.5: Marital status

It was also important to find out the marital status of the respondents. This is because marital status gives an insight into the decision making at the household level. This also indicates the house hold head who gives directions in the family and whether this could affect gender roles, transferring of indigenous knowledge that leans towards the management of forest biodiversity.

Table 4.3 shows that a majority (83.1) of the respondents are married while those who are single constituted 6.8%. Those either divorced or separated made up 3.4% while those widowed comprised 5.1% of the respondents.

Table 4.3: Marital status of the respondents

Marital status	Frequency	Percentage
Didn't respond	1	1.7
Married	49	83.1
Divorced/separated	2	3.4
Widowed	3	5.1
Single	4	6.8
Total	59	100.0

4.6: Religious affiliation of the respondents

It was deemed necessary to find out from the respondents the religious groups that they are affiliated to. Religion here plays an important role especially when it comes to the application of religious beliefs that goes hand in hand with indigenous knowledge and cultural practices regarding conservation of the forest biodiversity. For instance, those who are affiliated to the African traditional religion tend to consider some trees, animals, herbs and shrubs sacred and endowed with healing powers and so revere them greatly. The findings show that, overwhelming majority of the respondents are Christians at 93.2% while 5.1 subscribe to African traditional religion. However, 1.7% of the respondents did not respond to this question (Table 4.4)

Table 4.4 Religious affiliation

Religious affiliation	Frequency	Percentage
Refused to respond	1	1.7
Christian	55	93.2
ATR	3	5.1
Total	59	100.0

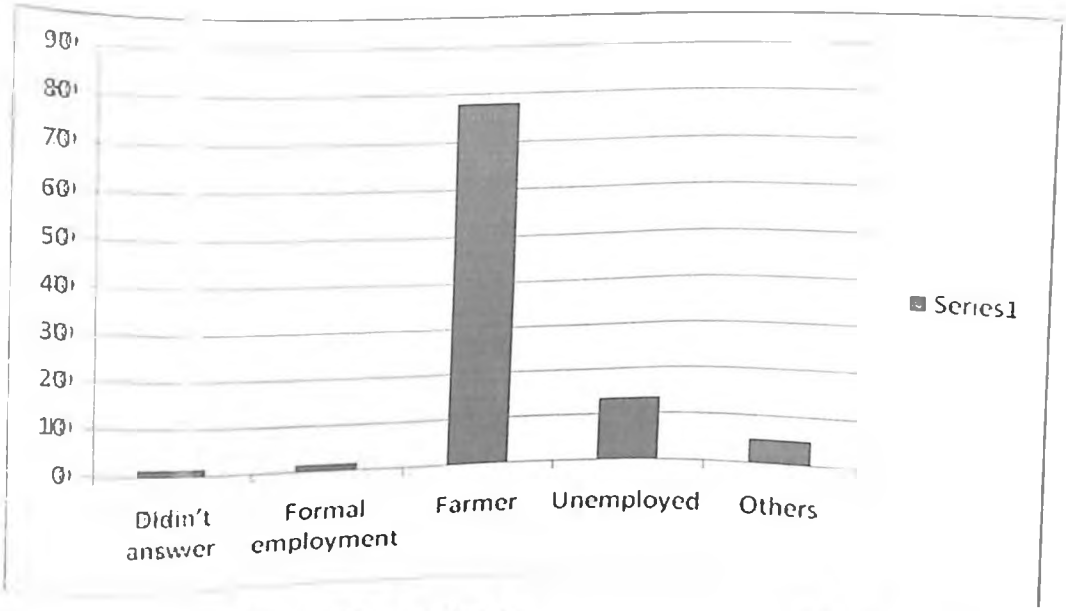
4.7: Occupation of the respondents

The study also sought to know the occupation of the respondents. The main reason is that occupation tends to affect the conservation roles to some extent. For instance, those who engage in farming tend to destroy the forest diversity through clearance for more farming space. Again, those who are formally employed tend to shy away from engaging in

activities that are directly related to conservation, while utilizing indigenous means due to their full time dedication to work.

The findings show that 78% of the respondents were farmers while 1.7% were formally employed. Those who admitted to not having any form of employment comprised 13.6% while 5.1% of the respondents engaged in other form of occupation like hunting and honey harvesting (Figure 4.2)

Figure 4.2: Occupation of respondents

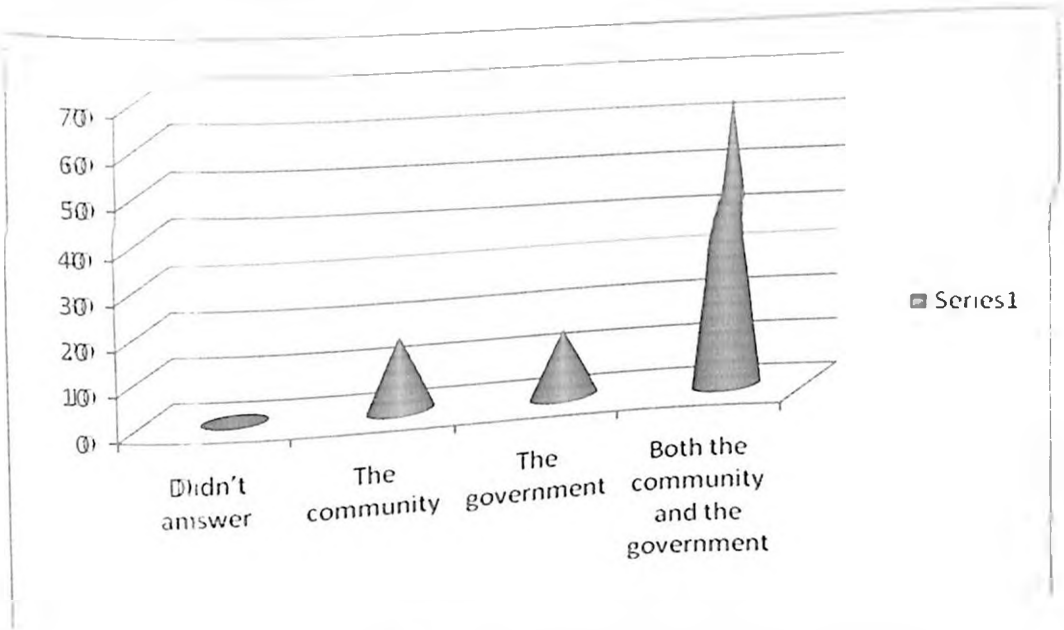


4.8: Indigenous knowledge systems and approaches to biodiversity management

This section deals with the indigenous knowledge systems and approaches to biodiversity management. It attempts to capture the perception of ownership, various forest biodiversity and resources. The study sought to find out from the respondents, their perceptions of ownership of the forest biodiversity and resources found in the area. The findings suggest that 66.1% of the respondents said that the forest biodiversity belong to

both the community and the government while 16.9% said that the resources belong to the community. Also, it should be noted that a considerable 15.3% of respondents felt that the resources solely belong to the government (Figure 4.3).

Figure 4.3: To whom the forest resources belong



4.9: Indigenous means through which biodiversity is managed

The respondents were also asked whether there were indigenous means through which the forest biodiversity is managed in this area. This was meant to ascertain their awareness and the active presence of this knowledge among the population, and in forest biodiversity management. More than a half (61%) of the respondents admitted that there were indigenous means through which biodiversity is managed while 39% said that it did not.

4.10: Whether there are religious beliefs that are associated with the management of the biodiversity

The study sought to find out from the respondents the existence of religious beliefs which are associated with the management of the forest biodiversity. Table 4.5 shows that 72.9% of the respondents admitted that there exist some beliefs that are associated with the management of the forest biodiversity while about a fifth(20.3%) faulted the belief's contribution. Those who did not answer probably because they were not aware or had no idea about the beliefs comprised 6.8% of the respondents. When asked as to whether these beliefs have been effective in their contribution towards the management of the forest biodiversity, slightly more than a half (57.6%) of the respondents agreed that it has been while slightly more than a fifth of them (23.7%) faulted the beliefs` contribution.

Table 4.5: Whether there are religious beliefs that are associated with the management of biodiversity

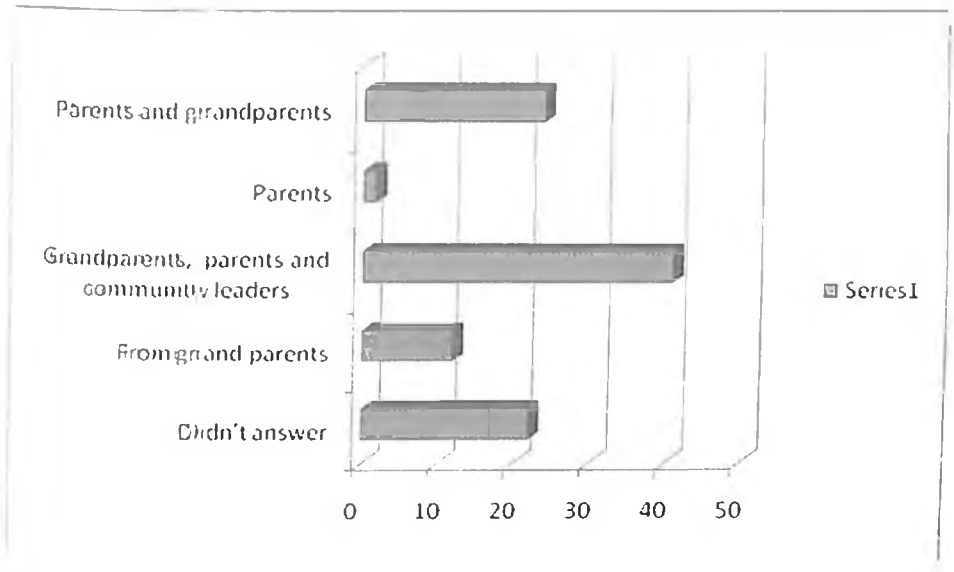
Existence of religious beliefs	Frequency	Percentage
Didn't answer	4	6.8
Yes	43	72.9
No	12	20.3
Total	59	100.0

Table 4.6: Whether these beliefs have been effective in their contribution towards the management of forest resources

Whether these beliefs have been effective	Frequency	Percentage
Refused to respond	11	18.6
Yes	34	57.6
No	14	23.7
Total	59	100.0

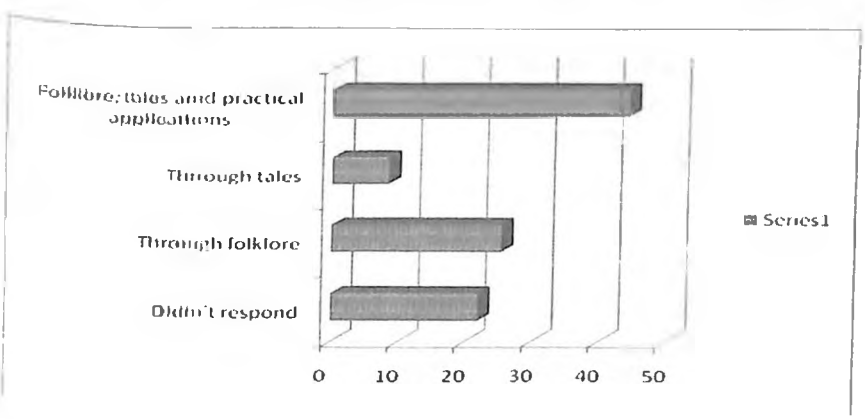
The study sought to find out how the respondents came to know about these beliefs and practices. The findings suggest that 40.7% of the respondents cited a combination of grandparents, parents and community leaders played a bigger role as the source of these beliefs while another 23.7% indicated that their sources were parents and grandparents. Another 11.95% of the respondents indicated that they came to know these beliefs and practices from grandparents while only 1.7% of the respondents said that their parents were the major source (Figure 4.4).

Figure 4.4: Sources of knowledge on beliefs and practices



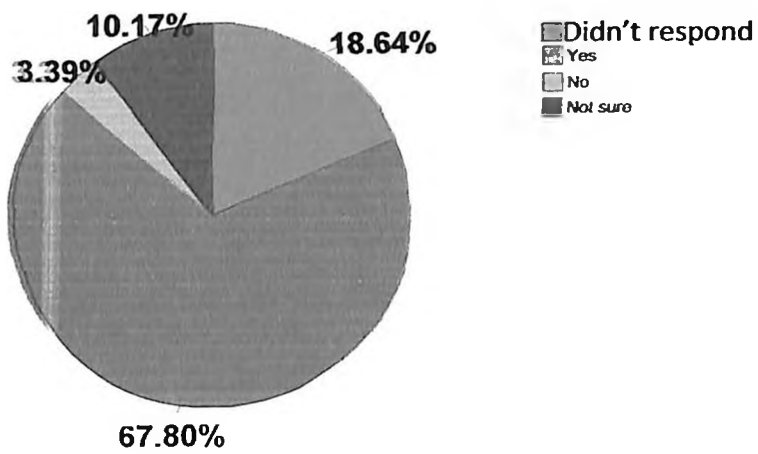
The study also sought to understand from the respondents the means that have been used to pass on the indigenous knowledge these knowledge beliefs and practices regarding the management of forest biodiversity. Figure 4.5 shows that 44.1% of the respondents indicated that the knowledge and beliefs were transferred to them through a combination of folklores, tales and practical application while 25.4% of them indicated that folklores played a vital role. Those who appreciated tales as their transfer mode made up 8.5%

Figure 4.5: Means of acquiring indigenous knowledge



The study sought to find out from the respondents whether they felt that this knowledge will be extinct in future. The results indicate that 67.8% of the respondents were worried that this knowledge faces extinction while 3.4% said that there is no worry of extinction. Those who were not sure about the extinction comprised 10.2%. (Figure 4.6)

Figure 4.6: Whether this knowledge will be extinct in future or not



The study also sought to find out from the respondents, what they perceived to be the greatest threat to their indigenous knowledge, beliefs and practices. As shown in Table 4.7, 47.5% expressed their worry on the incursion of formal education, westernization and generational change as the greatest threats to the survival of indigenous knowledge, practices and beliefs in the management of forest biodiversity while 28.8% expressed their fears on westernization and generational change. Those who indicated that generational change is a real threat made up 10.2% of the total respondents while those had their fears founded in formal education comprised 8.5%.

Table 4.7: The likely threats to indigenous knowledge, beliefs and practices in the management of forest biodiversity

Perceived threats	Frequency	Percentage
Formal education	5	8.5
Westernization	3	5.1
Generational change	6	10.2
Westernization and generational change	17	28.8
All of the above	28	47.5
Total	59	100.0

On whether indigenous knowledge has received wider acceptance, the findings indicate that 86.4% of the total respondents agreed that the knowledge has received a low rated acceptance while a minimal 3.45% of the respondents said that it has received a wider acceptance. Those who were not sure of the acceptance or rejection comprised 10.2% of the total respondents (Table 4.8).

Table 4.8: Whether indigenous knowledge has received acceptance by the current generation

Has received much acceptance	Frequency	Percentage
Yes	2	3.4
No	51	86.4
Not sure	6	10.2
Total	59	100.0

4.11: Gender roles in the management of the forest biodiversity

This section discusses issues to do with gender roles; including the ones to play bigger roles in biodiversity conservation, whether these roles have complemented each other and cultural dictation on these roles, among other important variables. The study sought to find out from the respondents who, between men and women, should play the central or bigger role when it comes to management of the forest biodiversity within the community. Table 4.9 shows that 57.6% of the respondents admitted that both men and women should play a central role in the management of the forest biodiversity while 32.2% said that it is men who should play a bigger role. Those who indicated that women should play a bigger role comprised 8.5% while those who suggested that other categories including NGOs, the government and the local authority, comprised 1.7% .

Table 4.9: Who should play a bigger role in the management of the forest biodiversity

Players	Frequency	Percentage
Men	19	32.2
Women	5	8.5
Both men and women	34	57.6
Others	1	1.7
Total	59	100.0

When asked whether the roles played by both men and women are enough to ensure sustainability of the forest biodiversity, an overwhelming 84.7% of the respondents said that the roles played by men were not enough while only 15.3% said that they were enough. On roles of women, 83.1% of the respondents indicated that they were enough while 15.3% said that the roles were not enough.

The study sought to know from the respondents whether both men and women played similar roles with similar characteristics in the management of the forest biodiversity. The findings indicate that 61% of the respondents stated that the roles are similar, while 28.8% said that they are totally different. Those who admitted that they were not sure of similarities and dissimilarities in the roles played by both men and women constituted 10.2% of the respondents (Table 4.10).

Table 4:10 Similarities/ dissimilarities in gender roles

Similarities/dissimilarities	Frequency	Percentage
They are similar	36	61.0
They are different	17	28.8
Not sure	3	10.2
Total	59	100.0

The study further sought to confirm or reject the assumption that these roles are culturally dictated. This is because most of the roles in most communities are dictated by cultural aspects. The results obtained and as shown in the table below, indicate that overwhelming 78% of the respondents agreed that these roles are culturally dictated while 16.9% said that the roles are not culturally dictated (Table 4.11)

Table 4.11: Whether the roles are culturally determined

Culturally determined or not	Frequency	Percentage
Didn't respond	3	5.1
Yes	46	78.0
No	10	16.9
Total	59	100.0

It was also important to find out from the respondents their views about the roles changing in future or not. This is because the cultural aspects are generally dynamic hence responding to various aspects that affect it. The results, as summarized in Table

4.12 below, show that 76.3% of the respondents were of the view that these roles will change in the future. Those who said that the roles will never change comprised 15.3% while 8.5% said that they were not sure.

Table 4.12: Whether these roles will change in the near future

Change in the future	Frequency	Percentage
Yes	45	76.3
No	9	15.2
Not sure of it	5	8.5
Total	59	100.0

4.12: Forest biodiversity depletion

Due to several factors, forest biodiversity has been known to face depletion in most parts of the world. Most indigenous trees, shrubs and plants are heavily threatened to the extent of being extinct. Therefore, the study went ahead to find out from the respondents whether there was evidence of forest biodiversity depletion in the area. As shown in Table 4.13 below, 94.9% answered in the affirmative while 1.7% gave a negative response.

Table 4.13: Evidence of forest biodiversity depletion

Evidence	Frequency	Percentage
No response	2	3.4
Yes	56	94.9
No	1	1.7
Total	59	100.0

The study went further to inquire from the respondents the main forms of evidence for depletion of the forest diversity. The results suggest that 69.5% of the respondents listed the cutting down of trees, human encroachment and cultivation. Other forms of evidence are cutting down of trees and human encroachment and cutting down of trees and cultivation which constituted 13.6% each (Table 4.14)

Table 4.14: Forms of evidence for the forest biodiversity depletion

Forms of evidence	Frequency	Percentage
Cutting down trees	2	3.4
Cutting down of trees and human encroachment	8	13.6
Cutting of trees and cultivation	8	13.6
All of the above	41	69.4
Total	59	100.0

4.13: Challenges experienced in the management of the forest biodiversity

The study sought to find out challenges that are experienced in the management of the forest biodiversity. The findings indicate that slightly more than a half (52.5%) of the respondents admitted that they were faced with challenges while 45.8% said that there are no challenges.On whether these challenges are applicable to men and women, the study found that 54.2% of the respondents said that they are universal hence not gender specific while 44.8% of the respondents said that they are gender specific. For those who admitted of experiencing some challenges, 52.5% of them were of the view that these challenges can easily be overcome while 3.4% of them were not sure whether these challenges can be overcome or not. On the other hand, 44.1% did not respond to the question (Table 4.15).

Table 4.15: Whether the challenges can be overcome

Response	Frequency	Percentage
Didn't respond	26	44.1
Yes	31	52.5
Not sure	2	3.4
Total	59	100.0

CHAPTER FIVE

DISCUSSION AND CONCLUSION

5.1 Introduction

This chapter discusses the study findings in light of the study objectives and makes recommendations on ways of attaining sustainable conservation of the forest biodiversity in the study area.

5.2 Discussion

The general objective of this study was to assess how indigenous knowledge and gender roles work in tandem to promote the conservation and management of the forest biodiversity in Kaptama division of Mount Elgon District. The study covered two sub-locations, Kongit and Kaptama.The study tried to answer three questions: First, what are the known indigenous knowledge systems utilized by women and men in the management of forest biodiversity in Kaptama division? Secondly, what are the roles played by both men and women in the management of biodiversity and thirdly, what challenges do both men and women face in the management of forest biodiversity?

Some of the indigenous ways of conserving the forest that the study revealed include systematic grazing by the local community in the moorland (areas at the top of the mountain with shrubs and grass) and also grazing deep in the forest (glades) for those who border the forest. There is a system whereby a group of men referred to as *pororiet* ensures that loggers, illegal hunters and charcoal burners do not deplete the forest. The traditional way of arresting trespassers by tracking their footprints was shared by one focus group discussion. The group stated that it was possible to know people by their

footprints. Other indigenous methods mentioned include use of traditional ways of harvesting honey and medicinal herbs without harming the forest. One key informant talked of "*a...mushroom-like plant used during honey harvesting which dazes but does not harm the bees*". Trees that are considered sacred like the *sinendet* are not supposed to be cut down or uprooted because they symbolize continuity of life. The *sinendet* is a reed used in many ceremonies as a symbol of good will. The *kokorwet is a* tree used in oathing, and there is a belief that if used as firewood, one would die. One key informant mentioned that according to his grandfather, "*...trees should not be left orphans*", meaning that they should always *be* conserved.

Wild animals were and are still revered. According to FGD, songs have been composed in praise of wild animals. One particular myth about the elephant says that "... *the presence of elephants will cause the cattle to multiply faster*". Another reason given by the respondents for conserving the animals is that most clans have an animal as their totem and therefore revere them. The belief that if one has eaten bush meat, one should not drink cow milk or else milk production would be affected, ensured that wild animals were spared and conserved.

Respondents agreed that religious beliefs exist and have contributed to the conservation of the forest biodiversity. According to most respondents, "*...rain-makers, peace-makers and spiritualists (workoik) offer their sacrifices in the forest*". There are legends and stories that talk of the presence of spirits, lightning and ogres deep in the forest and that rivers and forests were abodes of the gods. Another legend talks of caves with pools of clean water where mysterious bulls would be found. Forests were and still are used during the circumcision ceremonies for boys. The fear of curses befalling those

destroying the forest biodiversity ensured that the forest was conserved. The forest and caves have been used for refuge during conflicts with neighbouring communities. According to one FGD, caves were, and still are, home to large colonies of various types of bats and also provide salt licks for large and small mammals.

As regards the roles played by both men and women in the management of the forest biodiversity, the study revealed that women's roles are bigger than those of men. According to one key informant, a Participatory Rural Appraisal (PRA) carried out by a project in the area revealed that, in addition to their reproductive roles, women engage in planting and tending tree nurseries,most of which are of indigenous trees. While men graze and team up with forest guards in protecting the forest against forest fires, poachers and loggers, women fetch firewood, vegetables and medicinal herbs. The women rarely collect the entire trees but only dry twigs and smaller branches and often dead woods, so destruction is limited. One respondent pointed out that the women's role also includes "*instilling family virtues and obedience in management of the biodiversity to the younger generation*". Most respondents felt that the roles played by men were not enough. This is in line with the thought advanced by Dankelman and Davidson (1988) that, for women, trees and forests are multifunctional, whereas men tend to concentrate on their commercial potential for timber and other goods. Trees offer "fuel, food and fodder", the Three Fs, as women say.

Regarding challenges faced by both men and women in the management of the forest biodiversity, respondents felt that due to high levels of poverty, people have destroyed the forest for commercial purposes. It was also cited that the educational levels of the people living adjacent to the forest is low. This would mean that there is lack of

knowledge on the interrelation between trees and rain. This supports the observation by Dankelman and Davidson(1988) that with commercialization, modernization and increased demand for wood, many of the traditional customs of forest protection have been abandoned or broken down. One other challenge expressed by a key informant is that "*... due to land size, a person may opt to plant crops instead of trees or buy maize meal for the family instead of buying tree seedlings*". The indigenous trees are preferred over the exotic ones because of their good quality timber. The Elgon Teak (*Olea Capensis*), for instance, is highly valued by carpenters for its distinctively coloured, beautifully textured hardwood.

The study revealed that the community feels that the government condones the depletion of the forest by, among others, allowing harvesting of timber for commercial purposes and charcoal burning. The destruction of crops by wild animals without compensation has resulted in demoralization on the part of the community, leading to lack of motivation on conservation of the biodiversity.

One other challenge highlighted by a number of respondents is the failure by the government to involve the local community in the management of the forest biodiversity. This also supports Dankelman and Davidsons (1988) recommendation that if the poor are to benefit from social forestry projects, they must be involved and must share in the results of the projects. Another challenge is that since men own most of the resources including trees at the household level, women and young people are left with no option but to get these resources from the forest, thus depleting it. This is supported by Bamba (1985, as quoted by Dankelman and Davidson, 1988) who argues that with so much pressure on the land, women have little choice but to use the forest. According to one

FGD, another challenge facing women specifically is the cultural barrier to their access to and control over property, including land. Mitulla (2002) is in support of this notion by stating that most women have access/possession of land but do not legally own it. Additionally, culture prohibits women in this area from climbing trees, besides planting them. The greatest challenge highlighted by most respondents that face women is that even though they plant and tend trees, it is the men who own and make decisions on utilization of the resources, including trees. For a woman to plant trees or vegetables in the kitchen garden, she must consult the man. This is in line with the recommendation by Oxfam (2002) that for women to become more effective managers of natural resources, they need more secure access and user rights or outright titles, where appropriate.

It was also observed by respondents that women representation in the conservation committees is minimal. In the divisional environmental committees which are constituted by chiefs, for instance, the majority of the members would be men and the few women in the committee are given the role of being treasurers, never chairpersons or secretaries. Women, it was revealed by a key informant, are barred culturally to air their views and if they must, culture dictates that they do so while seated.

One other challenge observed by a FGD is that the younger generation seems not to care so much about customs and traditions that are associated with the conservation of the forest biodiversity.

Misuse of permits by commercial companies resulting in massive destruction of the forest biodiversity was cited as having demoralized the local community to the extent that they have lost interest in conservation efforts. As one respondent put it "*...the government allows harvesting of timber for commercial purposes and charcoal burning and yet*

denies the local people and especially women, access to the forest for medicinal herbs and collection of dry twigs for firewood". The poor relationship between the local community and the Forest Service Officers has led to apathy as one respondent observed: *"...Their role is only to arrest".*

5.3 Conclusion

This study sought to assess gender roles and utilization of indigenous knowledge in the management of the forest biodiversity. The study findings indicate that the community in Kaptama division value their environment and have made every effort to conserve it through traditional and modern ways. However, due to factors such as breakdown of traditional beliefs and associated taboos, rapid increase in the population, poverty, encroachment, excision of forest for farming and settlement, over-exploitation of industrial plantations, minimal reforestation activities and charcoal burning, tremendous destruction of the forest biodiversity has persisted.

It has been revealed in this study that gender, environment and sustainable development have determinate relationships and that a gender specific approach in the management of the forest biodiversity is necessary for sustainable development. This supports the notion that the gender, environment and development (GED) approach is not only concerned with women, but with the social construction of gender and the assignment of specific roles, responsibilities, and expectations to women and men.

Despite the fact that most respondents felt that the forest biodiversity belongs to both the government and the local people, they feel left out as far as benefits are concerned and also in terms of planning and implementation of projects on conservation. Even though

the Forest Act (2005) allows for the participation of the local people in the conservation of forest biodiversity, their participation is still limited.

The study has brought to the fore the fact that traditional community was aware of the need to protect the forest biodiversity and managed to live alongside the rivers, forests and wildlife, besides using them sustainably. As one key informant and a former Member of Parliament put it "... *the forest was intact during the colonial times and the Sabaot were natural conservationists who believed that the forest is storage place for beehives, wild life and for grazing during dry seasons*".

5.4 Recommendation

- There is need to document indigenous knowledge and to include forest management and conservation in the school curriculum so that children can grow up with the knowledge on how to conserve and preserve their environment. Parents should sensitize the young generations on the conservation and management of the forest biodiversity. The Ministries of Education, Environment and Mineral Resources and Gender, Children and Social Development should coordinate and ensure implementation.
- There is need for a participatory approach to forest conservation that would bring the forest service officers and the local community together as partners in conservation efforts.
- Given that women are taking an increasing role in conservation, especially in planting and tending tree seedlings, they need to be empowered with both skills and finances and they should be involved at all levels of decision-making positions. In addition,

there is need for sustained sensitization on matters pertaining to gender, environmental conservation and sustainable development. The Ministry of Gender, Children and Social Development should take the lead together with the Ministry of Environment and Mineral Resources and other relevant stakeholders.

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ANNEX 1: Introductory Letter

My name is Mary Cheptoo Wambua, a student at the University of Nairobi undertaking a Master of Arts degree in Gender and Development. I am conducting a study on gender roles and utilization of indigenous knowledge in the management of the Mt Elgon forest biodiversity. I kindly request for your co-operation in answering the questions I will ask. Any information given will be treated with utmost confidentiality. It is my privilege to have you as my respondent.

ANNEX II: Structured Questionnaire

Date of interview: .....

Name of respondent: .....

Questionnaire No: .....

Location and sub location: .....

SECTION A

Demographic background of the respondent

1. Gender:

01	**Male**
02	**Female**

2. Age

18 - 22	01
23 – 27	02
28 – 32	03
33 - 37	04
38 - 42	05
43 – 47	06
48 - 52	07
53 – 57	08
58 – 62	09
63 – 67	10
68 – 72	11
73 – 77	12
78 +	13

3. Educational level

No formal education	01
Primary completed	02
Primary not completed	03
Secondary completed	04
Secondary not complete	05
Tertiary institution	06
University level	07
	08

4. Marital status:

Married	01
Divorced/separated	02
Widowed	03
Single	04

5. Religion

Islam	01
Christian	02
ATR	03
Other	04

6. Occupation:

Formal employment	01
Farmer	02
Unemployed	03
Others	04

SECTION B

The indigenous knowledge systems and approaches to biodiversity management:

7. Please name some of the forest resources found in this area.

.....

8. To whom do you think these resources belong?

.....

9. What is the perception of people towards forest biodiversity management?

.....

10. Are there any indigenous means through which you have managed this biodiversity?

If your answer is yes, please explain.....

11 Are there any religious beliefs that are associated with the management of forest resources?

Elaborate your answer

.....

12(a) Have they (beliefs) been effective in their contribution towards the management of forest resources?.....

(b) How effective have they been? Please explain.

.....

13. How did you come to know about all these indigenous knowledge and beliefs that address the management of forest resource (biodiversity)?

.....

14. What are the means that have been used to transfer this knowledge?

.....

15(a) Do you think this indigenous knowledge will become extinct in future?

.....

(b) What are the likely threats to the indigenous knowledge in the management of the forest biodiversity?

.....

16. Do you think this indigenous knowledge has received wider acceptance by the current generation?

.....

SECTION C

Gender roles in the management of the forest biodiversity

17. Who should play a bigger role when it comes to management of the forest biodiversity?

.....

18. What roles do women play in the management o the forest biodiversity?.....

.....

19. What roles do men play in the management of the forest biodiversity in your community?.....

20. (a).Do you think that the roles played by men are sufficient for the management of forest biodiversity?.....

(b) If Yes/No please elaborate

.....

21. (a) Do you think the roles played by women are important in the management of the forest biodiversity?

(b) If Yes/No please elaborate.....

22. (a) Are these roles different or similar?

.....

(b) If they differ what makes them different?

.....

23. Do you think these roles are culturally dictated?

If yes, please list some of the cultural dictates that allocate the roles to both men and women.....

24. Do you see these roles changing in the near future?

Please elaborate your response .....

SECTION D

Challenges faced by both men and women in the application of indigenous knowledge towards the management of forest biodiversity

25. Are there some incidences of forest biodiversity depletion?

.....

26. Name some forms of the forest biodiversity depletion.

.....

27. (a) Have you experienced some hiccups in your efforts towards the management of forest biodiversity?

(b) If yes, what are some of these challenges?

.....

28. (a) Are these challenges applicable to both men and women or are they gender specific?

(b) If they are gender specific, what challenges do women face?.....

(c) What challenges do men face?

.....

29. (a) Do you think these challenges can be overcome?

(b) If yes, list below some of the ways that can be used to solve these challenges.

.....

ANNEX III: Focused group discussion guide

1) Roles played by both men and women in the management of the forest biodiversity.

2) Challenges in the management of the forest biodiversity through indigenous knowledge and how to integrate both gender roles and indigenous knowledge in the management and conservation of the forest biodiversity.

3) Ways of strengthening traditional/indigenous knowledge, structures and institutions for the purposes of sustainable resource utilization and the management of the forest biodiversity.

ANNEX IV: Key informant interview guide

Occupation.....

1. The resources found in the forest biodiversity in Kaptama division.

2. Roles the local community play in the management of forest biodiversity.

3. Strategies that have been put in place to integrate gender concerns and perspectives of both men and women in particular in the utilization and management of forest biodiversity.

4. Actions and initiatives that have been undertaken by international organizations, NGOs and private sector to visibly acknowledge women's participation in natural resource management and in this case, forest biodiversity.

5. The perception of the local community here towards forest resource management.

6. Any indigenous means that take into account gender roles through which you have managed this forest biodiversity.

7. Any development activities in this area that have affected the utilization and management of forest biodiversity.

8. Institutions available here and engaging in the management of forest biodiversity.

9. Any challenges you have been grappling with.

10. Appropriate solutions in addressing these challenges.