

**COMMUNITY INVOLVEMENT ON CONSERVATION OF NATURAL RESOURCES  
IN UGANDA. A CASE STUDY OF MABIRA FOREST BUIKWE DISTRICT.**

**BY**

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### DECLARATION

I **NABUKWASI FATUMA** do declare that this is my original work and to the best of my knowledge, it has never been submitted to any University or institution of learning for the award of a degree or its equivalent.

Signed .....  ..... Date 29<sup>th</sup>. 09. 2012 .....

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### APPROVAL

This research dissertation has been submitted for examination with my approval as a university supervisor.

Signature .....  ..... Date .....  .....

**MR. OMUNA DANIEL**

## **DEDICATION**

I have dedicated this work to my beloved parents Mr. Gizamba Abubakar Mrs. Gizamba Hadija and my lovely mum, sisters Hajara, Madina and brothers Arafat, Hakim, Andrew for their endless support both financially and morally ever since my childhood.

My beloved friends Aine Saul, ocheng mike, Mugaiga David, Lebman, Shantall, Noume, my sweetheart Phiona and my supervisor Mr. Omuna Daniel

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## ABBREVIATIONS

CBNRM	Community Based Natural Resource Management
CFCs	Chlorofluorocarbon
FAO	Food and Agricultural Organization
GDP	Gross Domestic Product
ICDP	Integrated Conservation Development Projects
NEMA	National Environmental Management Authority
NESAT	Nigerian Environmental Study Action Team
NFS	Nigerian Field Society
NGOs	Non-Governmental Organizations
SPSS	Statistical Package for Social Scientists
WWF	World wide life Nature
ZBC	Zimbabwe Broadcasting

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## DEFINITION OF KEY TERMS

A **community** is a social unit of any size that shares common values, or that is situated in a given geographical area (e.g. a village or town). It is a group of people who are connected by durable relations that extend beyond immediate genealogical ties and who usually define that relationship as important to their social identity and practice (James, 2006).

### **Conservation**

According to business dictionary.com, conservation is the usage, improvement and protection of human and natural resources in a wise manner, ensuring derivation of their highest economic and social benefits on a continuing or long-term basis.

### **Resource**

An economic or productive factor required to accomplish an activity, or as means to undertake an enterprise and achieve desired outcome.

### **Natural resource**

According to Britannica kids, a natural resource is something that is found in nature and can be used by people. Earth's natural resources include light, air, water, plants, animals, soil, stone, minerals and fossil fuels.

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## **ABSTRACT**

The study on community involvement and conservation of natural resources was conducted in Mabira forest specifically to establish the role played by the community in conservation of natural resources, factors which impend community involvement in conservation, challenges to conservation and solutions for proper conservation. The study involved secondary sources of data where the research related her study to different author's work and authentication and afterwards she made conclusions. The study used a survey design to get an estimation of the respondents' views in regard to the objectives of the study. The target population was government officials, NGOs, local people and local leaders. The study therefore used a sample of 200 respondents from a target population of 1000 through use of Slovene's formula. It employed a probability sampling technique to avoid bias in data presentation. Due to limited time the researcher based her presentation of finding on results from questionnaires (respondent's fill-in what they knew about the topic in regard with the formulated questions. The study findings depicted that 90 respondents as a way of protection of the environment report illegal users. About 120 respondents were of the view that poor attitude towards conservation impends conservation, 120 respondents argued that poverty is the key factor to degradation yet 90 respondents argued that low appreciation of conservation from communities affects conservation hence 65 proposed for Increased funding to help in environmental protection. The study concluded that there is need for the government to sensitize local people about the benefits of environmental protection and local people should welcome all the activities brought up for conservation of natural resources for their equal benefit.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.0 Introduction**

This chapter introduced the introduction, background of the study, problem statement, objectives of the study, research questions, scope of the study and its significance and the theoretical framework.

#### **1.1 Background of the study**

Current perceptions of community appear strongly linked to analyses of 19<sup>th</sup> and early 20<sup>th</sup> century scholars attempting to understand the portentous transformations that rocked their world. The source of these changes was thought to lay in the economic sphere-industrialization, monetization and production to satisfy material needs. Sir Henry Maine for example, saw the world moving from relationships based on status, kin networks and joint property to one based on contract, territory, and individual rights. Maine's underlying image of societal evolution influenced Tonnies's formulation of *Gemeinschaft* and *Gesellschaft* or community and society. Tonnies's view of community as an organic whole continues to color present conceptions to a significant degree and accounts for some of the attraction community holds for many conservationists, (Abera; 2003).

In the past, conservation and development were rarely taken as compatible, especially for the rural poor whose livelihood largely depends on direct utilization of natural resources. Today, African governments with support from international donors have increasingly sought to integrate rural community development with conservation in order to ensure improved natural resource management. For threatened resources that require increasing protection, it has been done through revisiting both specific property rights regimes and devising suitable management strategies, stressing the importance of the two concepts in realizing sustainable development, (Agrawal; 2008).

Within the context of sub-Saharan Africa, community oriented conservation projects have largely fallen into two categories. The first category has come to be known as integrated conservation development projects (ICDP) which are based on the idea of combining

conservation and development; vague in exact definition ICDPs are basically attempts to provide alternative sources of income near protected areas in order to reduce pressure on natural resources. This, for example could mean communities receiving a percentage of revenues earned from tourism in order to forgo the utilization of some element of local natural habitat. It is the second type of community conservation programme; however, that has gained the most attention, Community Based Natural Resource Management (CBNRM). In fact CBNRM projects have come to dominate a significant proportion of discussion on the successes and failures of contemporary conservation policies overall, (Adnan; 2002).

East Africa's forests are rapidly declining due to pressure from population increase and other land uses. Although most of the three East African states have enabling climatic systems for forest growth, only about 10% of the land is forested. Tanzania is less lucky, although it enjoys a big-forested area from the Miombo woodlands. Kenya's situation is the worst. FAO, 1990, through the Forest Resource Assessment report states only 2% forest cover for Kenya, way below the standard, Badege, (2009). In Kenya, The Mau forests are the largest remaining block of moist indigenous forests in East Africa., covering some 900Km. First gazetted in 1932, many changes have changed in its management policy, resulting to excisions, boundary alterations and fragmentation. Prior to 1932, the forest was very intact under the management of the about 20,000 Ogiek, a hunter-gatherer community of forest dwellers depending on the forest for subsistence and shelter. The community divided the forest among their clans using natural features like valleys, rivers and hills as boundaries.

In Uganda, the first attempt to formulate a national forest policy was made in 1929. The policy stressed the management of forests for timber production and afforestation of more land (Forest Department 1951). At that time the present Forest Department was established (Kamugisha 1993). The 1929 policy has since been revised in 1938, 1970 and 1987 with much emphasis on the role of forestry in environmental protection (Howard 1991). At the moment, it is only the Uganda Wildlife Authority that has a revenue sharing mechanism in place. The forestry sector used to share revenue but this practice ended with the establishment of the National Forestry Authority (Redford, 1990). thus the researcher intends to make an analysis of the involvement of

community on conservation of natural resources in Uganda with much emphasis on Mabira forest.

## **1.2 Statement of the problem**

In Uganda, natural resources have not been conserved irrespective of the government actions to do so through organizations like National Forestry Authority, National Environmental Management Authority and other stakeholders. To some degree like in Buikwe district due to the issues of deforestation of Mabira forest, several people have intervened in conservation of the biggest forest in the country but all efforts put down after investor's wish to take over developments in the forest. Hence the above mentioned and other factors which were detailed in the research dissertation forced the researcher to make an analysis of the relationship between community involvement and conservation of natural resources.

## **1.3 Objectives of the study**

### **1.3.1 General objective**

To assess the relationship between community involvement and conservation of natural resources in Buikwe district.

### **1.3.2 Specific objectives**

- To establish the role played by the community in conservation of natural resources in Buikwe district.
- To examine the factors which impede community involvement in conservation of natural resources.
- To find out challenges to conservation of natural resources in Buikwe district.
- To establish solutions for proper conservation of natural resources in Buikwe district.

## **1.4 Research questions**

- What is the role played by the community in conservation of natural resources in Buikwe district?

- What are the factors which impede community involvement in conservation of natural resources?
- What are the challenges to conservation of natural resources in Buikwe district?
- What are the solutions for proper conservation of natural resources in Buikwe district?

## **1.5 Scope of the study**

### **1.5.1 Content scope**

This study dealt with an assessment of the role played by the community in conservation of natural resources and the challenges to conservation of natural resources, factors which impede community involvement in conservation and to establish solutions for proper conservation of natural resources.

### **1.5.2 Geographical scope**

The study was carried out from Buikwe district with focus on Mabira forest.

### **1.5.3 Time scope**

The research was carried out for a period of five months that is from April to September 2016

## **1.6 Significance of the study**

It will be significant to the National Forestry Authority since it will provide directives on how they can involve the community in conservation of Mabira forest.

It will help the Ugandan government provide ways of conserving Forests not only in Buikwe but in the country at large.

It will also act as a reference to other researchers to use in doing research related to the topic under investigation.

It will also help the researcher accomplish her three years course in development studies at Kampala International University since it is part and parcel of the requirements for graduation.

## 1.7 Theoretical Framework

There are several theories and models that have been espoused by researchers and scholars in the understanding of natural resources use, conservation and management in socio-economic perspectives. For this study, focus was made in regard to the four theories and models, namely; behavioural approach, indigenous model, opportunity cost model and cost-benefit approach. In using these theories and models, data was collected from stakeholders on forest resource use which had implications in answering the research questions (Judith Bell; 2011). The behavioural model stipulates that people interact with the environment through their behaviours to seek socio-economic benefits (Sharma; 2014). The behaviour refers to an interface explained by the following analogies, to mention but three; where the axe meets the tree, the hoe meets the soil and mushroom is gathered from forests for food.

In the context of the study, the strengths of the behavioural model are reflected by the following examples; it recognizes that behaviours at all levels affect natural resource conservation and use from rural communities, forest rangers, park wardens, policy makers, presidents; it recognizes that behaviours are decisions, actions and practices that affect the eco-system. In this study, the behaviour is Protectionist Policy on government side and communities' behaviours is reflected in their quest to obtain forest resources so as to alleviate poverty. In this research's perspective, the strength in the behavioural model need to be explored so that additional responses can be designed and where there are competing claims, equitable solutions be found for example, it is recognised in Uganda policy documents that the exclusion of women from certain natural resource uses such as land ownership and management, including training and extension has partially contributed to lack of behavioural change with regard to environment degradation (NEMA;2007).

Indigenous Approach can also be used to explain natural resources use, management and conservation. In Uganda, like in most less developed countries; the majority of the population has continued to rely on their indigenous or traditional knowledge, skills and attitude on natural resource use, conservation and management. The indigenous model is useful in this research's perspective as illustrated by the following examples;



Government and other agencies' view on how local communities use natural resources are sometimes misinformed, for example, in Senegal local people cut off branches of trees for fodder and re-fertilizing their gardens. To their government this act is illegal due to desert condition of the country and yet local communities are aware that their actions do not kill the trees; (Bruce A. Byers: 1996). It makes it possible for researchers to identify the practices that have been practised over the years and thereafter identify actions of stakeholders, good and bad that can be used to ascertain future course for policy formulation, for example, the value of Omutuba (ficus species) tree to a Muganda is not the same to an Alur. The former mainly use it for making bark clothes while the latter use it mainly for coffee shades and cultural shrines, (Michener; 2008).

The weakness of the historical model arise from the new challenges such as technological advancements that are compelling local communities to abandon their traditional knowledge and adopt practices that are detrimental to the environment e.g. the use of polythene bags to carry food. In this research perspective, it is important to make efforts to recover and bring to the forefront indigenous knowledge, mainly through participatory research and learning which can enable communities come up with their own responses to the growing environment problems and challenges so that we promote the blending of both traditional and modern methods of environment management (NEMA; 2007).

Opportunity cost analysis can also be used to explain natural resource use. Opportunity cost analysis uses economic analysis to determine the net benefits of natural resource use (Randall Kranner et al; 1994). Forest resources as land use have to compete with other forms of use such as agriculture, industry and infra-structural development. If forest resources are more attractive economically than other forms of land use, then people will prefer to extract forest resources and vice versa. For example, government wants to cut down Namanve Forest and put industry in its place (Nature Watch; 1997). The government argues that it wants to improve the economy and reduce poverty. At Bujagali Falls in Jinja, investors plan to construct an electric power station at the site instead of the white-water rafting. Environmentalists argue that the site be preserved for its scenic beauty, culture and tourism, arguing that improving the economy should go about without destroying the environment (The New Vision; 10/10/97). In Kampala environmentalists were up in arms against government over its decision to allow an investor build a hotel at the

Golf course, a wetland area but government took an upper hand in the fight. Whatever option or decision (policy) is taken, it must achieve a balance between the needs of men and women, nature and technology so that future generations can also have a chance to thrive.

The strength of the opportunity cost analysis is that it can be used to gather information and opinions from all stakeholders on types of projects, execution and monitoring. Its weakness is that it is a process that can be time consuming and costly as it is difficult to get consensus on what socio-economic options are available to achieve societies' needs and wants. Cost-benefit analysis can also be used to study natural resource use, conservation and management in the context of resource economics. Uganda's natural resources have high values for its citizens, in the region and global community. However, the values of these resources are hard to quantify, for example, although forests provide a wide range of ecological benefits and services, the benefits are hard to monetise. It is therefore likely that the contribution of the forest sector to GDP is presently under-estimated, (Mohammed; 2013).

In the context of the proposed study, cost-benefit analysis is relevant in that efforts to conserve forest resources and other natural resources are challenged by a number of socio-economic factors. An important sub-set of the complex issues associated with conservation are the costs and benefits incurred as a result of protecting forests. Conservation of forest resources result in a wide range of benefits and costs to the local communities, the people who live adjacent to the forest reserve. These gains and losses accrue to the broad spectrum of people who vary by socio-economic status, location, preferences and time. The magnitude and distribution of benefits and costs can be a critical constraint to conservation of forest resources, (Woldeamlak; 2007).

## **CHAPTER TWO LITERATURE REVIEW**

### **2.0 Introduction**

This chapter presented a review of literature relating to the variables under investigation; it presented the literature review in accordance to the specific objectives of the study. The related literature was presented with the objectives of the study to suit the role played by the community in conservation of natural resources.

### **2.1 The role played by the community in conservation of natural resources**

The World Conservation Union (Oden; 2003) notes that the 'formal' model of managing protected areas such as forest reserves and national parks had its origin in North America in the 19<sup>th</sup> Century. These protected areas were established by far sighted conservationists who wanted to shield areas of outstanding scenic, biological and cultural values from inappropriate forms of development. The protectionist's model was later transferred to the rest of the world and there are presently some 10,000 protected areas world-wide.

R.G. Wild and J. Mutebi (1996) noted that the pattern of natural resources conservation in Uganda was (is) protectionist, state-led based on the pattern of many British colonies and protectorates introduced early last century. Forest and Game Departments were established to manage protected areas with strong conservation emphasis. Mt. Elgon and Bwindi Forests are examples of forest reserves amongst others in Uganda that were established in the 1930s on the protectionist model for their extra-ordinary bio-diversity. Mt. Elgon forest has an area of 1145km<sup>2</sup> while Bwindi has 32,000 hectares (Sharma,2003) noted that the protection policy that is to say the legal protection of forest or the exclusive approach seemed to work for as long as population levels of communities that lived adjacent to the forest remained low. With increase in population, the Protectionist Policy results into conflict and not conservation of natural resources for example, Mt. Elgon and Bwindi Forest areas represent high population densities (200-500km<sup>2</sup>), making them one of the highest in Africa.

Etzioni, (2006) community participation is a process and not simply the sharing of social and economic benefits. This simply means that participation of local community in

natural resources management is the integration of local people to mobilize themselves to make decisions, manage their resources and control the activities that affect their lives. Community participation in forest resources conservation means that opportunity has been given to rural people to participate, have full access to information on policy, issues and development plans, freedom that permits the discussion of issues by all stakeholders whereby the views of the local people are considered.

Usang (2006) argues that the local people have been over looked completely in the local community which are supposed to be involved in resource management through the process of gradually handling of harvesting and management activities of their natural resources. Government focus or role in natural resources management should be directed on the evaluation of the initiatives of local people; state and the institution involved in the promotion of extension services that is of immense benefits to the community and the future posterity. Furthermore, he categorize three different ways in which communities can participate in forest management such as community base management, collaborative management and non-governmental organizations (NGOs) collaboration with government institutions to ensure management of forest resources as well as sustainable forest development. Among the NGOs that assist in resources planning and implementing of forestry programmes are: Nigerian Environmental Study Action Team (NEST), Nigerian Conservation Foundation (NCF), Nigerian Field Society (NFS) and Coalition for Environment (CFE) and Worldwide Fund for Nature (WWF).

Herbert et al (2005) view that ecological crises have serious adverse effect on health, social, economic and developmental consequences for everybody. Action against environmental problems should therefore, involve everybody, that means individuals and their families, local hamlets and villages, all local communities constitute different levels and authorities that should be involved in the action against ecological problems. He outlined several incentives that can boost forest management such as tax incentives, provision of farm inputs, access to forest resources, community development, and increase in royalty to communities and employment opportunities. Such incentives will stimulate community members' involvement in the conservation of resources.

Kamugisha (2007) is of the view that the essence of forest products management in Cross River State is to ensure sustainable development. Forest products management relates to guarding and shielding our forest resources. The forest is threatened by man through many activities. Forest management involves the planned use of forest resources on a local, national and worldwide scale using all planning, foresight and cooperation that one can muster. Forest management may also encompass the careful use of land, air, water, plant and animal resources. Therefore, community participation brings about conservation of our economic, human, animal, aquatic and other forest resources leading to a sound, healthy and sustainable environment in the future because protection emphasizes preservation, maintenance culture, sustainable utilization and enablement of natural environment.

Sharma (2004) maintains that sustainable forest would be a goal unaccomplished without the development of forest management plans for target communities. He stressed that the essence of the plan was to ensure effective and rational use of timber and non-timber forest resources in Cross River State. Oden (1993) argue that the aim of the forestry sector is to ensure sustainable use of forest resources. The need to curb the destructive and unwise exploitation of the forest to extinction will be to the best interest of the rural people and other stakeholders indeed the environment.

Mekbebe et.al (2007) holds that lack of participation in management of forest products have resulted in low productivity, shrinking of rain-forest and agricultural production and shortage of arable land. With deforestation there is less rainfall, and in place of oxygen, there is building of gases composed of 84% carbon dioxide, 18% methane and 14% chlorofluorocarbon (CFCs). The removal of tropical forest disturbs the process that regulates the World's climate through absorbing carbon dioxide and release of water to the atmosphere through evaporation. This result in global warming which could cause the earth's temperature to increase up to 55% over the next 60 years.

Michener (2008) mentioned that Amboseli Basin in Kenya is one of the examples where a conservation battle was fought between government and local communities. Faced with limited resources to feed their cattle due to the creation of a protected area adjacent to

their homes, the Masai demanded direct benefits from government in form of formal employment in the protected area, social services in their communities, and compensation fees to cover the loss in accommodating the protected area. The government agreed to their demands and sustainable resource use ensued.

In Uganda, in an attempt to balance the needs of human beings and natural resources, nature and technology, the government in 1994 introduced a new approach to conserving Uganda's forest reserves to supplement the hitherto 'policing' approach. The new approach is "Collaborative Management" which is described as progressive. Collaborative Management or Community Participation seeks to involve local communities in the management of natural resources. The exact nature of local communities involvement may differ but people's participation can always be at the following levels: passive participation, consultative participation, functional participation or representative participation, (Morris, 2007).

In collaborative management, local communities participate in the decisions regarding natural resource use with government agencies. Local communities are given a percentage of revenue accruing from activities such as timber harvesting and eco-tourism. Both government and local communities have to agree on activities that damage the environment such as charcoal burning, hunting wild animals and grazing of domestic animals. Consensus is also reached on consumptive items that can be collected from the forest reserves, for example, edible caterpillars, mushrooms, stakes and non-consumptive items such as eco-tourism. In Uganda, collaborative management has been introduced into selected protected areas such as Kibaale, Bwindi, Elgon, Mgahinga (Uganda Wildlife Policy, 1995).

## **2.2 Factors which impede community involvement in conservation of natural resources**

**Security of Tenure;** for a community to effectively conserve its natural resources, it must have a sense of responsibility or custodianship towards them. This develops through economic or cultural interaction and association with these resources. The most successful community conservation initiatives are often those where the communities enjoy full legal ownership or control over an area, such as in Nagaland and parts of Uttaranchal, or strong

de facto control over resources, as is the case with many forests in Orissa and Maharashtra, (Tadess et al. 2004).

A Favourable Social Context Conservation is a part of livelihood insurance, but it is also deeply rooted in other social dynamics. On the one hand, community conservation initiatives may actually lead to social reforms such as greater equity or empowerment. Conversely, social reform efforts could promote the conservation of natural resources. It is essential to understand that conservation cannot be isolated from other social, economic and political processes of the community, (Abera, 2003).

An Informed, Transparent and impartial decision-making process; a transparent and impartial process of decision making with the involvement of as many members of the community as possible, are essential features of successful, sustained community initiatives. Abuse of collective funds, or other forms of social and power inequities, often threaten or undermine conservation efforts. Successful community initiatives share an open, just system of decision making and accounting, where records are regularly disclosed at village council meetings. Through such open processes initiatives have resolved troubling issues as encroachments, forest fires, poaching and timber smuggling, (Woldeamlak, 2007).

**Effective Collaboration with Outsiders;** in many CCAs, villagers have demanded that resources be managed jointly with government officials or NGOs. Here, communities realise the difficulty of 'going it alone' especially in the face of political and commercial pressures. Communities expect that partners in joint management should play an active but equal role, that of a facilitator rather than a dominating ruler or policeperson. External partners are also expected to contribute significantly at community discussion forums, by raising awareness and introducing information and perspectives from the outside world, (Mohammed, 2013).

**Strong Local Leadership Capacity;** in most successful community initiatives, local leaders have played a crucial role, often driving conservation efforts. Such leaders are typically inclined towards the larger social good. They may not be traditional or political leaders but those who touch the soul of the community and motivate them toward change, often at tremendous personal cost. When such leaders move on, many communities find it difficult to identify a second generation of leadership with similar dynamism and charisma. Thus, it is important for

supporting organisations to identify strong local leaders and facilitate their work (without changing or co-opting effective local institutions and relationships), and for the community to continuously foster a new, younger corps of leaders, (Tyler, 2009).

### **2.3 Challenges to conservation of natural resources**

Studies conducted by Daniel (2002) and Abera (2003) have found out that local communities' knowledge, experience and attitudes are not considered in planning, design and implementation of natural resource conservation measures. This may one of the reasons for the limited success in the conservation practices of Ethiopia. Other similar studies by Tadess and Belay (2004) and Tola and Woldeamlak (2007) have also disclosed that in the adoption of resource conservation, farmer's perception and their socio-economic factors/differences have not taken into consideration, (Belay, 2004).

Study conducted by Tilahun (2003) also found that there are problems of conserving the natural resources indicating that comprehensive approach that combines local and scientific knowledge through community participation, capacity building of the local actors through farmers' participatory research is important. Even the recent study (Tsehaye and Mohammed, 2013) investigated that while planning, designing and implementing natural resources conservation measures, analysis of farmers' attitude is important.

Gobeze, et al (2009) and Mekbeb, et al. (2007) have focused on the need to build the capacities of the local community and its institutions. The researchers asserts that the state should show its commitment to supporting the efforts of communities and their institutions to responsibly manage these resources by creating enabling environments and ensuring technical and legal support to these institutions in their efforts to become strong and accountable to communities.

Different government agencies may hold authority in a particular area and their plans for that area may not be compatible. For example, a forestry department may plan to protect a forest area while another government department may plan to build a road in the same area. It is crucial for planners to know whether existing government plans will conflict inadvertently with conservation objectives. If this is the case, alternative conservation sites must be considered unless other government departments are willing to change their plans, (Mohammed, 2013).



The lack of secure land tenure or forest user rights is a key reason why local people do not commit themselves to participatory forest conservation. People without such rights face an uncertain future and are less willing to invest their labour in conserving forests. Once local people gain land or user rights, however, they often become interested in forest conservation. Granting such rights, however, can be a highly controversial move. This is partly because user rights themselves provide no guarantee that 'new' private or communal land owners will manage forest resources in more sustainable and socially accountable ways than governments. There are discouraging signs from the states of northeast India, for example, where most forests are owned by tribal peoples. These states have had the highest deforestation rates in India during the past few years (Singh, 1996).

In most cases, there are customary or new rules set by the community on its own or by consulting the NGOs and government agencies. These rules are often unwritten but not necessarily any less effective than the formal written rules. It appears that more successful initiatives have been those started by the villagers or local communities themselves. For instance, in 1992, the Sacred Grove Conservation Program launched by the Udaipur forest division has been very successful. Externally driven projects, community initiatives have simply not been able to sustain themselves after the project period, often because they are dependent on external funds and motivators depending on those funds. But with the coming age, seeing partnership of local communities with NGOs, it is expected that humans can maintain better coordination with nature, (Zerner, 2009).

Poverty; poverty is identified as a major contributor to resource degradation. Many conflicts between people and protected areas are brought about by scarcity of resources available in the protected areas but are lacking outside and also aggravated by the fewer options that the people have. Most of the people in the study area are small scale farmers with very low incomes hence are struggling to meet the basic needs. The abolishment of non-resident cultivation has further aggravated the situation for some who depended on it for their livelihoods. Therefore majority cannot afford to spare money to support any conservation initiatives, (White, 2006).

Encroachments; there are also issues which come as a result of encroachments by surrounding communities due to population increase. For example Mount Kenya, with population increase

there is more demand for arable land and also for settlement. Unsustainable land use practices results from this scenario leading to further degradation of the ecosystem (Lutz, 2006).

Poor infrastructure; poor road network affect agricultural production and marketing, which subsequently impacts on household income especially in areas not close to the tarmac road. Most of the areas covered in the study are remote and lack accessible roads making accessibility difficult thus being a constraint to development (Adnan, 2002).

Market; lack of market to produce compounded with inadequate market knowledge by farmers therefore selling their produce for much lower prices. Inadequate storage facilities are also a problem especially for those practicing horticulture. Poor marketing structure, Exploitation by middlemen, lack of clear policy on liberalization, lack of guaranteed minimum returns are among the major challenges. Many small-scale farmers are involved in alternative crop production activities especially the growing of horticultural crops through irrigation. However this initiative is negatively affected by poor functioning of markets and infrastructure, (Wily, 2007).

Lack of credit facilities; lack of access to credit facilities to buy farm inputs is also another challenge and the mismanagement of most cooperative societies has worsened the situation further. The major obstacle for some tree planting groups is lack of seeds, equipment and labour since most young people do not want to volunteer their time for free(Badege , 2009).

Lack of technical expertise; this is due to inadequate field personnel to provide assistance to farmers for instance on new farming techniques, agro forestry, germination, propagation and horticulture. Those involved in conservation also lack adequate skills on nursery management, project management, leadership skills and group dynamics (Byers 2007).

## **2.4 Solutions to proper conservation of natural resources**

To begin with, it is helpful to think of participation as a process. Participation means communicating and working together with different people and groups in order to achieve common goals. Participation also means learning from each other's knowledge and mistakes. It is a series of steps or phases, each of which presents new insights and challenges. Participation is sometimes difficult but the rewards of truly participatory processes can be impressive, particularly if forests are conserved effectively (Lutz & Caldecott 1996). Conserving forest resources requires that stakeholders trust one another and commit themselves to sustainable

forest use. Legal or administrative procedures may have to be reformed or power redistributed to build relations of trust. Mutual trust often takes time to develop, especially if stakeholders have no previous experience of sharing decision-making or management responsibilities. It is the concrete actions taken by stakeholders in relation to each other-rather than their words or promises-which ultimately determine whether trust will evolve or not (Daniel, 2010).

Monitoring can create more effective management of conservation areas by indicating which conservation strategies succeed and which fail. Several researchers assert that monitoring is the foundation for “adaptive management,” by which new knowledge about managing resources and ecosystems will be developed and systematically incorporated into management plans (Lindenmayer and Franklin 2002; Saterson 1996; Ringold et al. 2003). Research on ecosystem management indicated that conservation efforts in the past fifteen years have moved away from management within administrative and political boundaries, and have focused increasingly on the regional, landscape and ecosystem level, (Daniel, 2000).

Based on this trend towards larger ecosystem-based, landscape-level conservation approaches, easement holders must accommodate imperfect information and knowledge. First, monitoring detects ecosystem change over time by regularly documenting conditions and changes at a variety of sites on a property. Information on environmental conditions and changes provides a “snapshot” of the area at a particular time, against which subsequent monitoring data can be compared. Second, regular visits to the property can reduce violations of the easement, enforce the uses and restrictions stipulated in the easement, as well as detect threats to the conservation values of the area. Third, a collection of monitoring data creates a documented history of the site, which can have implications for current and future management efforts. Fourth, regular monitoring enables an easement holder to interact with the landowner which increases owner cooperation, understanding of the easement, and consequently, can often decrease the potential for violations, (Byers 2007).

Sick on decentralization; one form of decentralization or power transfer occurs when specific stakeholder groups, rather than government officials, are given the right to collect revenues and decide how they will be spent. Such autonomy is the key to the strength of the joint forest management areas in India where local communities can retain all or part of the revenue from

forest products. In Nepal, the government has granted rights of use and management to many local forest user groups. This decentralization of power has had promising results in terms of both forest protection and local people's willingness to participate in communal forest management and develop their management capacities. Poorly planned and implemented decentralization can give power to local societies that lack the skills and accountability to use it 'properly'. Decentralization may also lead inadvertently to a situation where the costs of biodiversity conservation are borne locally, whereas its benefits accrue at regional, national or global levels, (Abera, 2003).

Development of Information Systems for Natural Resource Management; information is a crucial instrument for the people's movement, skills and knowledge are required to appropriately determine what, where, when, how and why to utilise the information. To be able to achieve this operational objective, there is a need to produce and access different types of information for different stages in promoting participatory natural resource management. Therefore, it is important for SDF to learn about various tools and techniques, which would help in addressing problems at both the community and policy levels. Equally important is that all stakeholders must have access to information on an equal basis and study additional information adequately so that it serves as a springboard for appropriate decision making on sustainable natural resource management in the long term, (Adnan, 2002).

Network building to promote sustainable management of natural resource can be implemented at various levels with various objectives. At the community level, network building follows the ecological approach of natural resource management whereby community residing in the same ecological area meet to share information, experiences and knowledge in natural resource management. They can collectively work out possible solutions to address problems and conflicts present in their areas. This is particularly significant since different natural resources found in the ecosystem have a close relationship with each other with no distinct boundaries, unlike administration management and local governance boundaries. The sustainable approach for this ecosystem requires the collaboration of communities residing in both upstream and downstream areas since any intervention of those who live upstream will subsequently lead to impacts to the communities downstream, (Gibson, 2009).

Since problems related to natural resource management and the environment are derived from structural problems and policy loopholes, collaboration between community organizations both within and between ecosystems as well as regional networks must be formalized. The community must be allowed to participate in the political process and have political space to collectively demand their fundamental rights in determining the direction of national development as well as taking part in the decision-making process, from the initial stages to the end, (Badege, 2009).

It is believed that network development and expansion is also a strategy for capacity building for community's organizations. This is possible through forums where experience and information can be shared. For instance, international forums where representatives from countries that share similar concerns regarding natural resource management meet and share problems as well as strategies for the people's sector to move forwards,( Etzioni, 2006).

## **Conclusion**

Natural resources management is increasingly the subject of social and political power struggles between groups claiming an interest in specific resources. Today, it is not possible to conserve forest genetic resources unless technical expertise is combined with an understanding and consideration of the underlying political and cultural processes.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.0 Introduction**

This chapter described the procedure through which data was collected for the study. The chapter focused on the research design, the target population and the sampling design. It discussed the methods, instruments of data collection and procedures which were administered in the field and how validity and reliability was established. It also showed the validity test of a data collection instrument that enabled the researcher to ascertain that she was measuring the correct concept and presented the operational definition of variables as they were used in research. Finally the chapter discussed the methods of analyzing the data as it related to the research question.

#### **3.1 Description of the study area**

Buikwe District is a district in the Central Region of Uganda. It is named after its 'chief town', Buikwe, where the district headquarters are located. Buikwe District is bordered by Kayunga District to the north, Jinja District to the east, Buvuma District to the southeast, the Republic of Tanzania to the south and Mukono District to the west. The 1991 national population census estimated the district population at about 250,500. The national census in 2002 estimated the population of Buikwe District at approximately 329,900. In 2012, the population of the district was estimated at about 429,600.

#### **3.2 Research Design**

A research design was the conceptual structure within which research was conducted; it constituted the blue print for the collection, measurement and analysis of data. For this study therefore a descriptive research using survey method was used though it had an element of exploration study. Babbie (1992) suggests that 'description was the precise measurement of the characteristics of some population or phenomenon under study'. In this regard, the phenomenon of interest was community participation in forest conservation.

In survey research design, the researcher described people's response to questions about phenomena or situation with the aim of understanding the respondent's perception from which truism was constructed. This study did not only focus on documenting the phenomenon or

precisely reporting on it, but also sought in a way to develop a better understanding of community forestry conservation. In this regard the study was to some extent exploratory.

### **3.3 Target Population**

The study was based on local communities of Buikwe district like neighboring areas of Mabira forest from Kitigoma, Lugazi and Buikwe Town Council. The target population was 1,000.

### **3.4 Sample Size and Sampling procedure**

#### **3.4.1 Sample size**

A sample is a small sub-group drawn from the larger population. According to Kothari (2004), the size of the sample should neither be excessively large nor too small. It should be optimum. An optimum sample is one which fulfils the requirements of efficiency, representation, reliability and flexibility. The sample size was got from the target population of 1000 using Slovenes formula as seen below;

$$n = N / (1 + N e^2) = 1,000 / (1 + 1000 * 0.05^2) = 285.714286$$

**If rounded off**

$$285.714286 = 286.$$

Hence the sample size was 200 that is 9 government officials responsible for protection of the environment, 2 Non Governmental Organizations representatives, 191 local people and 3 local leaders.

#### **3.4.2 Sampling Procedure**

Sampling means selecting a given number of subjects from a defined population as representative of that population or taking any portion of the universe as representative of that population. This study used the probability sampling technique to get the sample size for the respondents. The method provided a technique of drawing samples from the target population according to laws of chance for instance every attribute of the study had a definite, reassigned chance of being selected in the sample. Here it was blind chance alone that determined whether one item or the other was selected (Kothari, 2004).

### **3.5 Data Collection Instruments**

Questionnaires were used extensively to collect data since they acted as an efficient way of gathering data from samples representing large populations. The researcher used questionnaire which involved simple but comprehensive questions and it helped her to ensure correctness and consistence of the respondents. A semi-structured questionnaire consisting of two sections was used, Section I and section II. Section I consisted of items pertaining to profile of the respondents while section II consisted of items pertaining to the area of study and in the process multiple answers were allowed.

### **3.6 Validity of instruments**

Put differently, validity was the degree to which a test measured what it purported to measure. It was concerned with whether the findings were really about what they appeared to be about. To enhance validity of instruments in this study, the questionnaire was reviewed by experts in the subject matter, particularly my supervisor.

### **3.7 Reliability of instruments**

According to Mugenda and Mugenda (2004), reliability also measured the degree to which a research instrument yields consistent results on data after repeated trials. A reliable instrument is one that produces consistent results when used more than once to collect the data from the sample randomly drawn from the sample population. To ensure reliability, the instruments were pre-tested by piloting the questionnaire on a smaller group of respondents. A reliability measure was achieved by estimating how well the items checking the same concept yielded the same results.

### **3.8 Data Analysis**

Data was analyzed using both qualitative and quantitative methods. In qualitative data analysis, data was organized, clustered, interpreted and inferences made. Data collected in the form of field notes was organized into manageable forms around themes and areas of concern for ease of interpretation. In quantitative analysis, data from structured questionnaires was edited, cleaned for completeness and consistence before processing. It was then coded to enable the responses to be grouped into categories. Descriptive statistics were used to determine frequency tables and percentages.



### **3.9 Administrative procedure**

The researcher obtained an introductory letter from the head of department for development studies which was presented to the sub county for acceptance to collect the necessary data.

### **3.10 Ethical Issues**

Information collected was treated with confidentiality; the consent of the respondents was sought of before revealing the information. Respondents were not forced to give information and they did not write their names on the questionnaires.

## CHAPTER FOUR

### PRESENTATION AND DISCUSSION OF THE FINDINGS

#### 4.0 Introduction

This chapter presents the findings of the study. The findings presented and discussed in this chapter included; sex of respondents, marital status and the education level and discussion of the four research objectives of the study.

#### 4.1 Bio data of respondents

*Table 1 shows sex of respondents*

Response	Frequency	Percentages
Male	110	55
Female	90	45
<b>Total</b>	<b>200</b>	<b>100</b>

#### Primary Data, August 2016

From table 1, 110 respondents were male and 90 were female. This was due to the fact that men were found to be involving themselves in deforestation than women and this in accordance to respondent's views was due to the fact that most of the men engage in this activity a way of looking for money to feed and sustain their households.

*Table 2 shows Age bracket of respondents*

Response	Frequency	Percentages
Below 20 years	10	5
20 – 30 years	80	40
31 – 40 years	80	40
41 years and above	30	15
<b>Total</b>	<b>200</b>	<b>100</b>

#### Source: Primary Data 2016

The findings indicated that 5 were below 20 years, 80 were 20–30 years old as applied to those who were 31–40 years and 30 were 41 years and above. This therefore implied that people who

spoil the environment are adults who equally understand that what they are doing is wrong. However when asked why they do it, they argued that it is the source of income in Buikwe (they sell charcoal and fuel wood) and others after studies they failed to get jobs so they turned to charcoal burning as a source of livelihood.

*Table 3 shows marital status of respondents*

Response	Frequency	Percentages
Married	150	75
Single	50	25
<b>Total</b>	<b>200</b>	<b>100</b>

**Primary Data, August 2016**

From Table 3, 150 respondents were married yet 50 were single implying that married people knew more related to deforestation than any other groups since most heads of families in Buikwe take it as an income base and a way of providing to their families.

*Table 4 shows education level of respondents*

Response	Frequency	Percentages
Primary	60	30
O level	40	20
A level	40	20
Degree	59	29.5
Masters	1	0.5
<b>Total</b>	<b>200</b>	<b>100</b>

**Primary Data, August 2016**

Results from Table 4 show that 60 respondents had completed primary, 40 finished both O and A levels, 59 were degree holders but mostly unemployed this therefore to some respondents was amongst the core issue behind deforestation in the district and only 1 respondent was a Master's holder and this was because he was a district forest officer. This therefore implied that most of

the respondents could easily read and write due to the fact that they all reached primary level and in Uganda all people in upper primary can easily read and write.

*Table 5 shows the number of people per house hold*

Response	Frequency	Percentages
2-5	20	10
6-10	80	40
11-12	100	50
<b>Total</b>	<b>200</b>	<b>100</b>

**Source: Primary Data 2016**

From table 5, 20 respondents were holding a family of 2-5 people yet 80 respondents representing were in a family of 6-10 people yet 100 respondents were in a family of 11-12 people. This therefore indicated that most people were living in an extended family life which may be one of the causes to high deforestation in the forest.

*Table 6 shows the role played by the community in conservation of natural resources in Buikwe district*

Response	Frequency	Percentages
Report illegal users	90	45
Protect the natural resource themselves	10	5
Plant more trees	60	30
Use bio gas	10	5
Work with National Forestry Authority	30	15
<b>Total</b>	<b>200</b>	<b>100</b>

**Primary Data, August 2016**

Study results in table 6 showed that 90 of the respondents argued that Buikwe community members report illegal users to the neighboring law makers for serious punishments like imprisonment and forceful planting of trees though to some people this wasn't enough when they argued that the law should be changed to involvement of the local community in tree plantations

as stipulated by authors like Etzioni, (2006) who had the view that community participation is a process and not simply the sharing of social and economic benefits and further argued that participation of local community in natural resources management is the integration of local people to mobilize themselves to make decisions, manage their resources and control the activities that affect their lives.

From the study results, 10 respondents had involved themselves in protection of natural resources that is every body is an eye witness of the other which according to majority was the only solution to deforestation. This in reference to views expressed by authors like Usang (2006) who argued that the local people have been over looked completely in the local community yet they are supposed to be involved in resource management through the process of gradually handling of harvesting and management activities of their natural resources and promotion of extension services that is of immense benefits to the community and the future posterity.

Yet study results further had 60 of the respondents arguing that they had involved themselves in tree plantations that is they have a policy of cut one tree and plant ten more which policy according to views expressed by authors like Herbert et al (2005) action against environmental problems should therefore, involve everybody which means that individuals and their families, local hamlets and villages, all local communities constitute different levels and authorities that should be involved in the action against ecological problems. This author went on and outlined several incentives that could boost forest management such as tax incentives, provision of farm inputs, access to forest resources, community development and increase in royalty to communities and employment opportunities so as to help stimulate community members' involvement in the conservation of resources.

Further Table 6 expressed that 10 respondents argued that they use bio gas which has helped most of them protect the environment and this was mainly from human waste and as well waste from animals and 30 respondents argued that they work with National Forestry Authority to avoid people who cut trees as referenced by Mekbebe et.al (2007) who held that lack of participation in management of forest products has resulted in low productivity, shrinking of rain-forest and agricultural production and shortage of arable land. Hence he argued that with deforestation there is less rainfall, and in place of oxygen, there is building of gases composed of

84% carbon dioxide, 18% mythanases and 14% chlorofluorocarbon (CFCs) thus if local community work together with concerned organizations much can be achieved.

#### **4.2 Factors which impede community involvement in conservation of natural resources in Buikwe district**

*Table 7 shows the factors which impede community involvement in conservation of natural resources in Buikwe district*

<b>Response</b>	<b>Frequency</b>	<b>Percentages</b>
Poor altitude to conservation	120	60
Low incentives given to the community	30	15
Strict forestry laws	50	25
<b>Total</b>	<b>200</b>	<b>100</b>

*Primary Data, August 2016*

From the study results on table 7, 200 respondents argued that poor altitude of the local community to conservation of natural resources is one of the factors due to the fact that it is through the community that every strategy succeeds and if they respond negatively nothing can be achieved. This in reference to authentic views expressed by Mohammed, 2013, communities realise the difficulty of ‘going it alone’ especially in the face of political and commercial pressures hence at the end communities expect that partners in joint management should play an active but equal role, that of a facilitator rather than a dominating ruler or policeperson. External partners are also expected to contribute significantly at community discussion forums, by raising awareness and introducing information and perspectives from the outside world

Results also depicted that 30 respondents argued that the low incentives given to the community impedes community involvement in conservation of natural resources in Buikwe district and authors like Tyler, 2009 argue for strong local leadership capacity where by according to him, in most successful community initiatives, local leaders have played a crucial role, often driving conservation efforts. Such leaders are typically inclined towards the larger social good. They may not be traditional or political leaders but those who touch the soul of the community and motivate them toward change, often at tremendous personal cost. When such leaders move on,

many communities find it difficult to identify a second generation of leadership with similar dynamism and charisma.

Study results from table 7 showed that 50 respondents argued that strict forestry laws also impend the conservation of natural resources in a way that when at times the law is tough people run away from other networks of conservation but when they are taught about it, they also involve themselves as said by Woldeamlak, 2007, that an Informed, Transparent and impartial decision-making process; a transparent and impartial process of decision making with the involvement of as many members of the community as possible, are essential features of successful, sustained community initiatives he further said that successful community initiatives share an open, just system of decision making and accounting, where records are regularly disclosed at village council meetings.

*Table 8: shows the issues behind deforestation in Buikwe district*

Response	Frequency	Percentages
Poverty	120	60
Overpopulation	10	5
Unethical values of some forest staff	30	15
High dependency on forest products	25	12.5
High industrialization growth	10	5
Readily available market for forest products	5	2.5
<b>Total</b>	<b>200</b>	<b>100</b>

*Primary Data, August 2016*

Results in table 8 showed that 120 respondents argued that poverty is among the issues behind deforestation in Buikwe district as proclaimed by White, 2006, who argued that poverty is identified as a major contributor to resource degradation and that many conflicts between people and protected areas are brought about by scarcity of resources available in the protected areas but are lacking outside and also aggravated by the fewer options that the people have. Hence most of

the people in the study area are small scale farmers with very low incomes hence are struggling to meet the basic needs.

From table 8 above, 10 respondents argued that overpopulation is another factor behind deforestation as expressed by views of Lutz, 2006 who said that there are also issues which come as a result of encroachments by surrounding communities due to population increase and he gave an example of Mount Kenya which has a population increase which created more demand for arable land and also for settlement. Still results showed that 30 respondents argued that it was due to unethical values of some forestry staff for example most of them didn't get enough training in regard to forestry protection thus find themselves doing what they think is better

Still 25 respondents argued that the high dependency on forest products is also a factor to consider for example some people instead of looking for sources of income think charcoal burning and wood selling are the best alternatives

Further 10 respondents argued for high industrialization growth in both central and eastern region and in details most respondents argued that though industries bring development, they at times create gaps for environmental protection for example looking at Kakira sugar plantation extension has taken off a bigger part of Mabira forest which to most people is a future danger in terms of rainfall and 5 argued that readily available market for forest products also contributes to deforestation for instance Uganda has many carpenters to buy wood from trees cut off in Mabira and others argued that most people in Uganda use charcoal hence there is market available for charcoal sellers.

#### **4.3 Challenges to conservation of natural resources in Buikwe district**

*Table 9 shows the challenges to conservation of natural resources in Buikwe district*

<b>Response</b>	<b>Frequency</b>	<b>Percentages</b>
Small number of forest staff	50	10
Limited funding	20	10
Lack of good transport networks	10	5
Low appreciation of conservation from	90	45



communities		
Illegal forest users	30	15
<b>Total</b>	<b>200</b>	<b>100</b>

*Primary Data, August 2016*

Results from table 9 above depicted that 50 respondents argued for low forest staff levels as one of the challenges to conservation of natural resources which was considered in relation to views expressed by Byers 2007 who said that there is lack of technical expertise which according to him is due to inadequate field personnel to provide assistance to farmers for instance on new farming techniques, agro forestry, germination, propagation and horticulture. Those involved in conservation also lack adequate skills on nursery management, project management, leadership skills and group dynamics

However 20 respondents argued for limited funding that is to say the environmental managers at times lack money to carryout their work as stipulated by White, 2006 who said that due to poverty resource degradation is ongoing and many conflicts between people and protected areas are brought about by scarcity of resources available in the protected.

From the study results still, 10 respondents said that the poor transport network in Buikwe like the poor road networks challenge conservation and as Adnan, 2002 said poor road network affect agricultural production and marketing, which subsequently impacts on household income especially in areas not close to the tarmac road. Most of the areas covered in the study are remote and lack accessible roads making accessibility difficult thus being a constraint to development.

Further 90 respondents argued for low appreciation of conservation from communities for instance most community members up to now do not understand the benefits of conservation as explained by views of Daniel (2002) and Abera (2003) who found out that local communities' knowledge, experience and attitudes are not considered in planning, design and implementation of natural resource conservation measures. This may one of the reasons for the limited success in the conservation practices of natural resources hence at the end local communities become resisters.

Lastly 30 respondents argued for illegal forestry users like people who carryout farming and cut trees. This is also emphasized by Singh, 1996, who argued that the lack of secure land tenure or forest user rights is a key reason why local people do not commit themselves to participatory forest conservation and therefore people without such rights face an uncertain future and are less willing to invest their labour in conserving forests. Once local people gain land or user rights, however, they often become interested in forest conservation. Granting such rights, however, can be a highly controversial move. This is partly because user rights themselves provide no guarantee that 'new' private or communal land owners will manage forest resources in more sustainable and socially accountable ways than governments.

#### 4.4 Solutions to proper conservation of natural resources in Buikwe district

*Table 10 shows the solutions to proper conservation of natural resources in Buikwe district*

Response	Frequency	Percentages
Community involvement	55	27.5
Increase funding	65	32.5
Sensitization of the community to value natural resources	35	17.5
Strict laws to those who practice deforestation	45	22.5
<b>Total</b>	<b>200</b>	<b>100</b>

*Primary Data, August 2016*

The table above expressed respondent's views like 55 respondents argued that community involvement can help solve issues related to deforestation and this view is supported by Daniel, 2010 who argued that conserving forest resources requires that stakeholders trust one another and commit themselves to sustainable forest use. Legal or administrative procedures may have to be reformed or power redistributed to build relations of trust hence mutual trust often takes time to develop, especially if stakeholders have no previous experience of sharing decision-making or management responsibilities.

Further 65 respondents argued that increase in funding projects related to conservation of natural resources especially in places which are secure as supported by Abera, 2003 who argued that

more support should be extended to local areas in form of decentralization since in already practicing areas like Nepal it has had promising results in terms of both forest protection and local people's willingness to participate in communal forest management and develop their management capacities.

From study results on table 10, 35 respondents argued for sensitization of the community to value natural resources and this according to Gibson, 2009 can only be achieved through Network building to promote sustainable management of natural resource can be implemented at various levels with various objectives and that at the community level, it should follow the ecological approach of natural resource management whereby community resided in the same ecological area meet to share information, experiences and knowledge in natural resource management. They can collectively work out possible solutions to address problems and conflicts present in their areas and 45 respondents argued for Strict laws to those who practice deforestation which according to scholars like Lindenmayer and Franklin can be achieved through strict monitoring and evaluation to create an effective management of conservation areas by indicating which conservation strategies succeed and which fail. Several researchers assert that monitoring is the foundation for “adaptive management,” by which new knowledge about managing resources and ecosystems will be developed and systematically incorporated into management plans.

## **CHAPTER FIVE**

### **CONCLUSIONS AND RECOMMENDATIONS**

#### **5.0 Introduction**

This chapter presented the conclusion of the results derived from the data presented and discussed in Chapter four and a number of recommendations were subsequently derived.

#### **5.1 Conclusions**

From the study results, a number of conclusions were made which included the following;

The major role played by communities in conservation of Mabira forest is the reporting illegal users.

It can be concluded that to a larger extent poor altitude to conservation impedes community involvement in conservation of natural resources.

Generally there is low appreciation of conservation from communities since people think that it is just torture from the government if it prevents them from carrying out the practice.

## **5.2 Recommendations**

From the study, the recommendations below were made;

The study generally revealed that all the above issues of deforestation expressed in the findings arise due to Poverty in most cases; hence the Ugandan government should try to provide incentives to growth and development like good infrastructures, market base for agricultural products which can be achieved if there is a strong relationship between the community and the government.

The study also revealed that in protection of natural resources, challenges are always met; hence the study recommends local community to always be appreciative of some development activities brought up by the government since at times they are targeted towards the benefit of the whole country in other wards they should stop resistance.

Lastly due to expected long run effects from exploitation of natural resources, it is recommended that the Ugandan government, community members and NGOs should join hands and work together to create a basis for environmental protection for instance besides increasing funds for protection, government can put a compulsory policy of every family planting trees and individuals should put in their minds that cutting trees is a present benefit but a future disastrous.

### **5.3 Areas for future research**

The following areas were recommended for future researchers.

#### **i) Role of NGOs in conservation of natural resources.**

With emphasis on provision and strengthen on social service delivery, more attention needs to be put on how NGOs can equally contribute to conservation of natural resources.

#### **ii) Contribution of local community to conservation of natural resources**

The areas for future research may be showing how the local community can help conserve natural resources.

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## LIST OF APPENDICES

### APPENDIX I

#### QUESTIONNAIRE

#### COMMUNITY INVOLVEMENT ON CONSERVATION OF NATURAL RESOURCES IN MABIRA FOREST, BUIKWE DISTRICT-UGANDA

Dear sir/Madam

I am **NABUKWASI FATUMA** a student of Kampala International University pursuing a degree of bachelors in development studies. In our final year we are required to carry out research on a topic of our choice therefore my topic is about “community involvement on conservation of natural resources in Mabira forest Buikwe district. Thus the questionnaire below will help me gather the data required for my topic of research, therefore you are requested to respond to the following questions appropriately for the purposes of my academic research and I declare that the information given shall be treated with maximum confidentiality it deserves for academic purpose.

Tick one or write the relevant information in the space provided.

#### SECTION A: BIODATA OF RESPONDENTS

1. Sex of the respondent

a. Male ☐                      b. Female ☐

2. Age bracket

a. Below 20 years ☐  
b. 20 – 30 years ☐  
c. 31 – 40 years ☐  
d. 41 years and above ☐

3. Level of education

a. A level

b. O level

c. Primary

d. Others spesify .....

4. Marital Status of Respondents

Married

Single

Separated

Widow

5. Number of people per house hold

2-5

6-10

11-12

**SECTION B:**

**Role played by the community in conservation of natural resources in Buikwe district**

6. What do you understand by the term conservation of natural resources?

.....  
.....

7. What is the role played by community in conservation of natural resources in Buikwe District?

.....  
.....

**SECTION C:**

**Factors which impede community involvement in conservation of natural resources**

8. What are the factors that impede community involvement in conservation of natural resources?

.....

.....

9. What are the issues behind Deforestation of Mabira Forest?

.....

.....

**SECTION D: CHALLENGES**

10. What are the challenges to conservation of natural resources in Buikwe district?

.....

.....

**SECTION E: SOLUTIONS**

**Solutions for proper conservation of natural resources in Buikwe district**

11. What are the solutions for proper conservation of natural resources in Buikwe District?

.....

.....

12. Give recommendations for improvement in conservation of natural resources in Uganda

.....

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