

THE ROLE OF TANGANYIKA CATCHMENT REFORESTATION AND
EDUCATION IN NATURAL RESOURCES MANAGEMENT
IN KIGOMA DISTRICT, TANZANIA

BY



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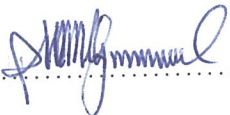
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DECLARATION

I, Felix Eliadory Kavejuru, declare that this work has never been submitted to any University for the award of any degree and that all this work is a result of original research carried out by myself, except where the few references quoted to which acknowledgement has been made.

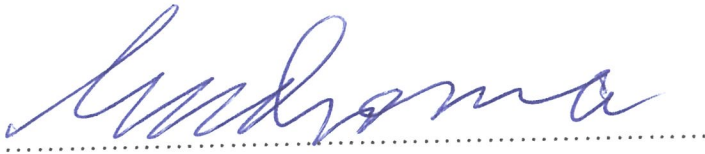
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Signed. 

Date. 23rd October /2008.

APPROVAL

This is to certify that this dissertation has been supervised by me and submitted with my approval.

A handwritten signature in blue ink, appearing to read 'Edroma', written over a dotted line.

Prof. Eric L. Edroma, BSc, MSc, PhD, FLS

Date. 23rd October 2008

DEDICATION

I dedicate this work to my young brother Fidel Makililo who sacrificed a lot for my education. It is also dedicated to my lovely wife, my dear children and all my friends who have passionately supported my struggle to accomplish my Postgraduate studies. My struggle should inspire you to explore greater heights in academics and other endeavors in life.

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LIST OF ACRONYMS

CBD:	Convention on Biological Diversity
CBO:	Community Based Organization
CCM:	Chama Cha Mapinduzi
CSO:	Civil Society Organisation
DANIDA:	Danish International Development Agency
DRC:	Democratic of the Republic of Congo.
EIA:	Environment Impact Assessment
FAO:	Food and Agricultural Organisation
FINNIDA:	Finnish International Development Agency
GEF:	Global Environmental Facility
HDC:	Highly Developed Countries
IUCN:	International Union for Conservation of Nature and Natural Resources: The World Conservation Union
IMF:	International Monetary Fund
JGI-US:	Jane Goodall Institute United State
KINGONET:	Kigoma NGOs Networks
LDC:	Least Developed Countries
LTBP:	Lake Tanganyika Biodiversity Project
MKUKUTA:	Mkakati wa Kukuza Uchumi na Kuondoa Umaskini Tanzania (Kiswahili Acronym-National strategy for growth and reduction of poverty)
MNR&T:	Ministry of Natural Resources and Tourism
NEMC:	National Environment Management Council
NGO:	Non Government Organization
NORAD:	Norwegian Association for International Development
NRM:	Natural Resources Management

PMO: Prime Minister's Office

SAPS: Structural Adjustment Programme

SEMA: Sustainable Environmental Management Action

TACARE: Tanganyika Catchment Reforestation and Education

TAFIRI: Tanzania Fisheries Research Institute

TAFORI: Tanzania Forest Research Institute

TANGO: Tanzania NGOs Network

UNCCD: United Nations Convention on Combating Desertification and Drought

UNDP: United Nations Development Programme.

UNEP: United Nations Environmental Programme.

UNFCCC: United Nations Framework Convention on Climatic Change

UNFF: United Nations Forum on Forest

UNICEF: United Nations Children's Emergency Fund

USA: United States of America

USAID: United States Agency for International Development

VPO: Vice President's Office

WB: World Bank

WCS: World Conservation Strategy

WWF: World Wild Fund for Nature

DEFINITION OF TERMS

Biodiversity:	The genetic, species, and ecological diversity of the organisms in a given area.
Community:	The lowest unit of social organization, where individuals can speak for themselves within individuals may give up some of their individuality to behave as a single entity to accomplish common goals.
Conservation:	Efforts to save the environment and resources
Ecosystem:	A system of living organisms interacting with physical, chemical, biological and social environment to produce a stable state.
Management:	Regulated and controlled used of natural resources, and can range from total protection of wildlife for aesthetic and future use.
Natural resources:	Goods and services supplied by the environment
Stakeholders:	All natural resources users such as: <ul style="list-style-type: none">• Local resources users- farmers, fishermen, rangers, hunters, hunter-gatherers, pastoralists, local artisans and others.• Non governmental conservation groups• Non governmental development groups.• Commercial/ industrial business people, especially from industries such as forestry, fishing, mining, bush meat harvesting.
Sustainable Development:	Development that meets the needs of current generation without compromising the ability of future generation to Meet their own needs.

ABSTRACT

The study explored the role of NGOs in natural resources management, a case of Tanganyika catchment reforestation and education (TACARE) in Kigoma District, Tanzania. This was done to find out the extent to which TACARE contributes in natural resources management. The specific objectives were: to evaluate the activities of the NGOs in the study area, to find out strategies used and problems encountered by NGOs when implementing the strategies of conserving natural resources.

The study was conducted in four divisions in Kigoma district Tanzania. Two divisions were selected in urban and other divisions in rural areas. The study was descriptive and it employed various methods such as observation, questionnaires, interviews and group discussions. Photography, useful literature review and internet search were used as well.

The findings of the research on the activities of TACARE in natural resources management include: forestry, agriculture, community development, health and environmental education for the youth. The findings indicate that the main activity of TACARE is the forestry reserves. It reveals that TACARE is arresting the rapid degradation of the indigenous natural resources. The strategies employed by TACARE in natural resources management are: community participation, training, sectoral programming, networking and political influence. The findings reveal that community participation is the core strategy employed in the conservation of natural resources. It was concluded that TACARE offers an innovative model of community centered conservation approach, which effectively addresses human needs while promoting conservation values. Community participation and training have helped TACARE to achieve its goals in implementing activities of conserving natural resources.

In conclusion, TACARE has created an important impact on natural resources management, poverty reduction and development in the study area, despite insufficient funding.

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CHAPTER ONE

INTRODUCTION

1.1 Background to the study

The lives of all Tanzanians depend on natural resources for both the present and future generations. The country is endowed with significant natural resources, which include forests and woodlands, wild animals, rivers, lakes and wetlands. All these resources play significant roles to the economy in terms of providing social and economic goods and services. The depletion of these resources will seriously undermine the ecological sustainability of the economic activity (Environmental policy, 2005).

Tanzania is a coastal state endowed with fisheries resources. She has both marine and inland fisheries potential. The marine water covers 64,000 square kilometers, which includes the Indian Ocean and the Exclusive Economic Zone which covers 223,000 square kilometers. The fresh water includes the riparian-shared water bodies of East African great lakes namely Lake Victoria, Tanganyika and Nyasa. The country has also other small natural lakes, man made lakes, river systems and many wetlands with fish potential. All these water bodies cover 58,000 square kilometers. The country has coastline of about 800 km declared as its Exclusion Economic Zone but has not yet been exploited. The present annual fish catch is about 350,000 metric tons.

The number of fishermen who are permanently employed is 80,000 and few others obtain their livelihood from the sector by being employed in the fishing and fishery related activities. The artisanal fishermen produce about 90% of the total fish catch in the country; The remaining 10% is derived from industrial fishing. Most of the fish caught is consumed locally while Nile perch, sardines and prawns are for exports. The fisheries resources contribute about one third of the animal protein or 30% of the total intake to the Tanzanian population. The fisheries resources are source of employment, livelihood to the people, recreation, and tourism in order to generate foreign exchange. The contribution of the sector to GDP for the past five years has been staggering between 1.6 and 3.1%.

The fisheries resources are renewable resources, which are limited, and therefore they have to be conserved, managed and developed on sustainable basis. The present fisheries policy has addressed clearly the problems faced by the sector and the actions to be undertaken. The major focus is on the promotion of sustainable exploitation, utilization and marketing of fisheries resources to provide the intended national socio-economic objectives and achieve effective protection of the aquatic environment to sustain development.

The private sector, the community non-governmental organizations and other non-state actors have a useful role to play in the development, management and sustainable utilization of the fisheries resources. They have diverse experience, expertise and capacity in sector. Their support is required to achieve the sector objectives. The active involvement in the sector would enhance investment and improve business and general management in the fishing industry (Ministry of Natural Resources, 2007).

Tanzania has about 33.5 million hectares of forests and woodlands. Out of this total area, almost two thirds consists of woodlands on public lands, which lack proper management. About 13 million hectares of this total forest area have been gazetted as forest reserves, over 80,000 hectares of which is under plantation forestry and about 1.6 million hectares are under water catchments management (Ministry of Natural Resources, Forestry Division, 2007). The forests are unique natural ecosystems and genetic resources which offer habitats for wildlife and sites for beekeeping; it is the main source of fuel wood for the rural population and accounts for 92% of the total energy consumption in the country. However, it is estimated that the sector's contribution to the Gross Domestic Product is between 2.3% and 10% of the country's registered exports. This contribution is underestimated because of unrecorded consumption of wood fuels, bee products, catchment and environmental values and other forest products.

Despite all the importance and roles played by the forest resources to the economy, there are a number of problems faced which hamper the development of the sector and thus the under estimation of contribution to the economy. The various problems include among others deforestation, inadequate forestry extension services, inefficiency of wood based industries and poor infrastructural facilities. Others are outdated legislation, fragmented

administration at all levels between the centre and the local levels, lack of participation of various stakeholders in the management of the resources and poor resource databases, outdated and non existence of management plans for efficient resource use (Ministry of Natural Resources, 2007).

Tanzania has signed and has been participating in and implementing international forest management instruments, including global convention and regional agreements, resolutions and other programmes of international organizations. These include Convention on Biological Diversity (CBD), The United Nations Convention on Combating Desertification and Drought (UNCCD) and its protocol, United Nations Framework Convention on Climatic Change (UNFCCC) and the Kyoto protocol, United Nations Forum on Forest (UNFF), Convention for the protection, management and development of the marine and coastal environment of the Eastern Africa region and other related protocols.

The efforts made by international agencies, central and local governments, non-government organizations and community based organizations to promote natural resources management for the benefit of the present and future generations have lagged behind the goal.

Natural resources are used unsustainably. The human economy depends on the services offered free by the ecosystems. The ecosystem services supplied annually are worth many trillions of dollars. Economic development that destroy habitat and impairs services can create cost to humanity over the long-term that may exceed the short-term economic benefits of the development. These costs are generally hidden from traditional economic accounting, but are nonetheless real and are usually borne by society at large. Tragically, a short-term focus in land-use decision often sets in motion potentially great cost to be borne by future generations. This suggests the need for governments, NGOs, and CBOs to intervene in conservation activities and policies that achieve balance between sustaining ecosystem services and pursuing the worthy short-term goals of economic development.

1.3 Problem statement.

Economic and material wellbeing depends on natural resources. Human societies derive many essential goods and services from the natural ecosystems including seafood, game animals, fodder, fuel wood, timber, and pharmaceutical products. NGOs, the private and public sectors as well as other stakeholders have put measures in place like: public education awareness in conservation of natural resources, and a policy to promote sustainable utilization of natural resources. All these remain unachievable. In the area of study, since 1990's there has been increasing number of NGOs involved in natural resources management but their intended objectives are not achieved instead, degradation of natural resources is increasing at a high pace in the areas of: deforestation, low land productivity, famine, poaching and overstocking. The above practices are threats to human existence and it is a challenge to the people of Kigoma District. This posed a number of questions on the role of NGOs dealing with natural resources management. It was against this kind of background that the researcher chose to carry out the research on role of NGOs in natural resources management taking TACARE as a case study.

1.4 Aim of the Study

The aim of the study was to examine the extent to which TACARE have contributed in natural resources conservation in Kigoma District.

1.4.1 Specifically the Study was designed

1. To evaluate the activities of TACARE in Kigoma district.
2. To find out strategies used by TACARE in natural resources conservation in Kigoma District.
3. To identify the problems faced by TACARE when implementing the strategies of natural resources conservation in Kigoma District.

1.5 Research Questions:

1. What are the activities of TACARE in conserving natural resources?
2. What are the strategies TACARE used in conserving natural resources?
3. What are the problems TACARE faces in implementation of the strategies of natural resources conservation in Kigoma District?

1.6 The Scope of the Study

The study focused on natural resources management in Kigoma Tanzania; it covered the period between 1994 to 2008. The study concentrated on Kigoma district as a case study so as to establish the role of NGOs in natural resources management. The respondents who were used in the study were: Kigoma District officials, TACARE officials, and members of local communities in the selected divisions.

1.7 Significance of the study

The findings of this study will provide information to the government, non- governmental organizations, local institutions, community based natural resources management groups and other environmental conservation stakeholders who are involved in natural resources conservation and environmental education. The information will help organizations with similar activities like those of TACARE to cross check their activities, to develop awareness on sustainable use and conservation of biodiversity. This information will also act as a yardstick to NGOs in examining whether or not their programmes are successful, and in determining how further measures should be taken to attain their goals. The data generated and recommendations made will be used for future research by scholars and academicians.

1.8 Conceptual framework.

The research was guided by the conceptual framework (Figure 2), which was developed during the study. The framework indicates that high population growth rate and the influx of people from Burundi and Democratic Republic of Congo have led to population pressure in Kigoma. According to the national census of (2002) the district had a population of 574,000 in 2002, but in 2007 the population rose over 1.5 million with significant increase in the urban and rural areas, which made heavy demands on natural resources such as fisheries, forest, games, agricultural land, grazing land, settlements, among others. As more resources are consumed, large quantities of waste and sewerage are generated. (Hoffman, 2006). High demand for fuel wood, charcoal, timber, logs and clearance of indigenous forest for growing food and cash crops has led to deforestation and soil erosion. Likewise, high demand of protein food and other aquatic foods have led to over fishing and biodiversity depletion.

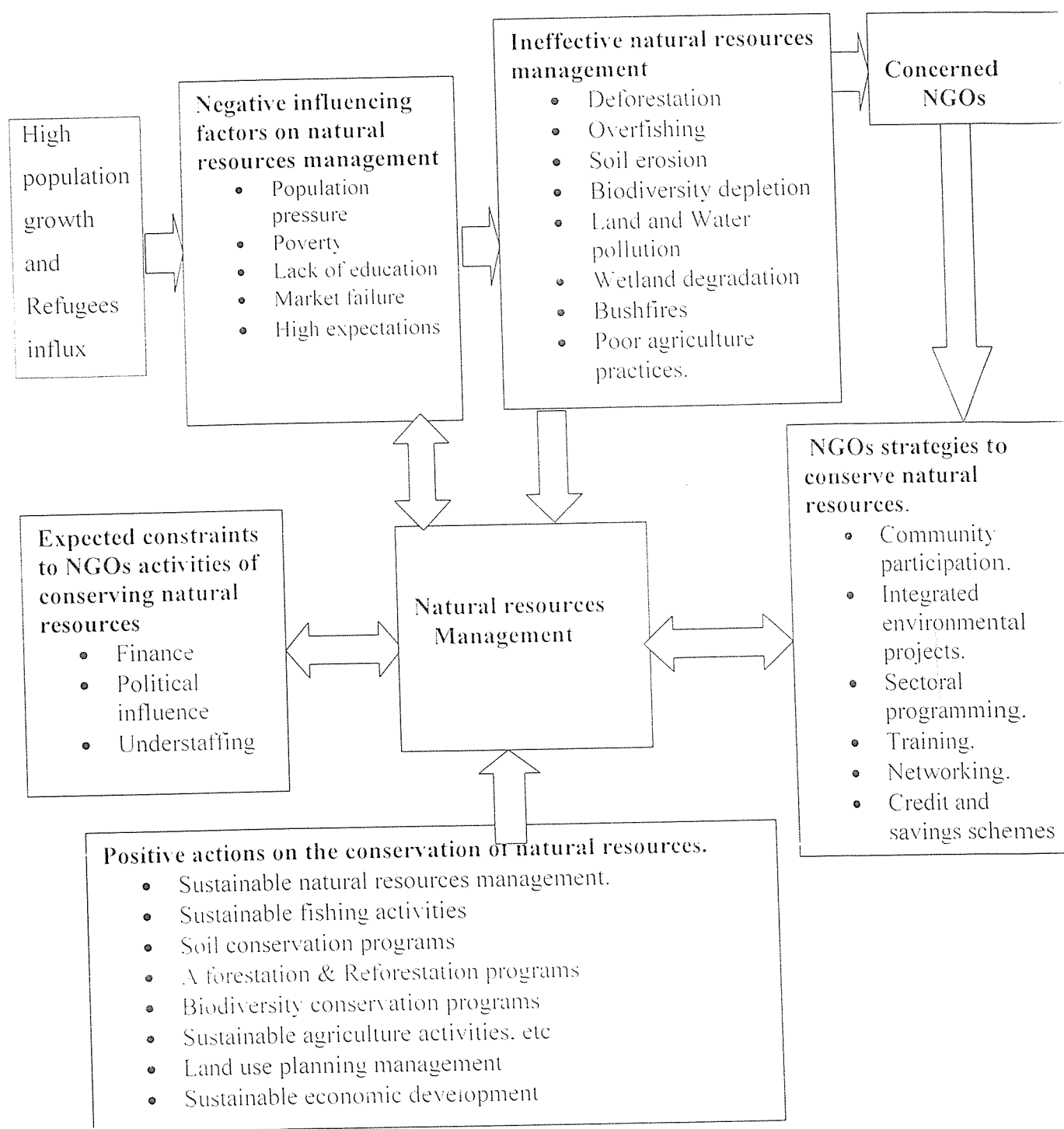


Figure 2 Conceptual Framework model

CHAPTER TWO

LITERATURE REVIEW

2.1 Natural resource management

Human economic and material wellbeing depends on the use of natural resource. Human societies derive many essential goods from natural ecosystems including seafood, game animals, fodder, fuelwood, timber and pharmaceutical products. These goods derived from natural resources represent important and familiar parts of the economy. What has been less appreciated until recently is that natural ecosystems also perform fundamental life-support services without which human civilization would cease to thrive. These include the purification of air and water, detoxification and decomposition of waters, regulation of climate, regeneration of soil fertility, and production and maintenance of biodiversity from which key ingredients of agricultural, pharmaceutical and industrial enterprises are built (Archibugi and Nijkamp, 1989).

This array of services is generated by complex interplay of natural cycles powered by solar energy and operating across a wide range of space and time scales. The process of waste disposal, for example involves the life cycles of bacteria as well as the planet – wide cycles of major chemical elements such as carbon and nitrogen. Such processes are worth many trillions of dollars annually. Yet because most of these benefits are not traded in economic markets, they carry no price tags that could alert society to changes in their supply or deterioration of underlying ecological systems that generate them. Because threats to these systems are increasing, there is a critical need for identification and monitoring of ecosystem services both locally and globally, and for the incorporation of their value into decision-making processes in natural Resources management. (Daily, 1997).

Historically the natural resources and value of earth's life support systems have largely been ignored until their importance have been realised. For example deforestation has belatedly revealed the critical role forests serve in regulating the water cycles in particular and, in mitigating floods, droughts, the erosive forces of wind and rain, and

today escalating impacts of human activities on forests, wetlands and other natural ecosystems imperil the delivery of such services. The primary threats are land use changes that cause losses in biodiversity which in turn affect the carbon, nitrogen and other biochemical cycles, human caused invasions of exotic species, releases of toxic substances, possible climate change and depletion of stratospheric ozone layer (Nicholas, 2004).

In a study published by the World Bank (2000), more than 175 scientists assessed the health of global ecosystems. They discovered a widespread decline in the ability of ecosystems to produce goods and services on which human lives depend. The findings for instance, found out that half of the world's Wetlands had been lost in the last 100 years, while logging and conversion for agricultural activities have deforested the world's forests by as much as half. Nearly three quarters of the world's marine fish stocks are over fished or are being harvested beyond a sustainable rate and soil degradation has affected two thirds of the world's agricultural lands in the last 50 years (Daily, 1995). Humanity obtains from the natural ecosystems an array of goods and their products that grow in the wild. Many of these, such as fish and animal products, are commonly traded in economic markets. The annual world fish catch, for example, amounts to about 100 million metric tons and is valued at between \$50 billion and \$100 billion; it is the leading source of animal protein, with over twenty percent of the population in Africa and Asia dependant on fish as their primary source of protein (UNFAO,1993).

The commercial harvest of freshwater fish worldwide in 1990 totaled approximately 14 million tons and was valued at about \$ 8.2 billion (UNFAO, 1994). Interestingly, the value of the fresh water sport fishery in the U.S alone greatly exceeds that of the global commercial harvest, with direct expenditures in 1991 totaling about \$ 1 billion. When this is added to the value of the employment generated by sport fishing activities, it raises the total to \$ 46 billion (Felder and Nickum, 1992, cited in Postel and Carpenter 1997). The future of these fisheries is in question, because fish harvests have approached or exceeded sustainable levels virtually everywhere. Nine of the word's major marine

fishing areas are in decline due to over fishing, pollution, and habitat destruction (UNFAO, 1993; Kaufman *et al.* 1997).

The oceans and seas cover two – thirds of the earth's surface, and most people live within 200 km of the sea. Environmental pressures on resources such as fish and minerals but also the damaging effects of pollution on marine plants and animals and on their recreational and landscape value difficult because so much of their area is outside the legislation of single country (Nicholas and Rosalind, 2004). Action by the UN has made some progress in providing controls up to 200 miles. offshore, but managing the open oceans is an important issue for the future.

Fish have always been an important source of food, creating a livelihood for communities with access to the sea. In the twentieth century, the development of highly efficient fishing methods, fishing vessels that can fish anywhere across the oceans, lakes and rivers; and the increased demand for protein to feed the growing populations has overstretched fish resources in some areas to their limit (Lawton and Lay, 1995). In 1950 World fishing catches were 20 million tones per year. By the end of the century this increased to 95 million tones per year, close to the limit of 100 million tones, which FAO (1993) believes, is the maximum yield that can be taken without causing permanent damage or loss of species.

Turning our attention to the land, grasslands are an important source of marketable goods, including animals used for labor (horses, mules, asses, camels, bullocks, etc) and those whose products are consumed (meat, milk, wood and leather). Grassland were also important as the original resource habitat for most domestic animals such as cattle, goats, sheep and horses, as well as many crops, such as wheat, barley, oats, and other grasses (Sala and Paruelo 1997) In a wide variety of terrestrial habitats, people hunt wild animals such as waterfowl, moose, elk, fox, boar and other mild pigs, rabbits and even snakes and monkeys. In many countries, wildlife meat forms an important part of local diets and in many places, hunting is an economically and culturally important sport.



Natural ecosystems also produce vegetation used directly by humans as food, timber, fuel wood, pharmaceuticals and industrial products. Fruits, nuts, mushrooms, honey foods and spices are extracted from many forest species. Wood and other plant materials are used in the construction of homes and other buildings, as well as for the manufacture of furniture, farming implements, paper, cloth, thatching, ropes and so on. About 15 percent of the world's energy consumption is supplied by firewood and other plant material: in developing countries, Biomass supplies nearly 40 percent of energy consumption (Lubchenco, 2002), although the portion of this derived from natural rather than human dominated ecosystems is undocumented. In addition, natural products extracted from many hundreds of species contribute diverse inputs to industry: gums and exudates, essential oils and flavourings, resins and oleoresins, dyes, tannins, vegetable fats and waxes, insecticides and multitudes of other compounds (Lunge and Foster, 1996). The ability of most of these natural products is in decline due to ongoing habitat conversion.

2.2 Activities done by NGOs

Environmental NGOs are assumed to be those non-governmental organizations that are supportive of environmental protection policies. These include environmental groups such as the Sierra club, Natural Resources Defense Council, Environmental Defense and the National Wildlife Federation as well as many public health groups such as the American Lung Association. There are other NGOs such as the Wise Use Movement (largely in the West) property rights groups and some state and local governments, that typically oppose such policies or seek to limit their impact. Industry and trade associations also tend to be skeptical of government intervention (Vaughn, 2006).

African NGOs were born in the womb of the neo-liberal offensive, which began to open space for freedom of association. The anti-state stance of the so-called donor-community was the real push behind the upsurge in NGOs activity. NGOs are led by largely educated elite, located mostly in urban areas and well versed in the language and idiom of modernization (Shivji, 2006). An overwhelming number of NGOs are donor funded through the usual procedures set by the funding agencies. By far the greatest numbers of

NGOs are advocacy, which focus on particular areas of activity such as human rights, gender, development, environment, governance among others.

NGOs have played a major role in pushing for sustainable development at the international, regional and local levels (Mullet and Yaffee, 2007). NGOs have been key drivers of inter-governmental negotiations ranging from the regulation of hazardous wastes to a global ban on land mines and common shared natural resources. NGOs aided by advances in information and communications technology, have helped to focus attention on the social and environmental externalities of business activity.

Since 1970s, there has been an increase of NGOs as the prime collective actors in development activities. Between 1980 and 1992 about 304 NGOs were registered in Tanzania. By the mid 2004, the number of NGOs registered rose to 6428. NGOs collaborate in making government programmes more effective, encourages government to adopt innovation from the voluntary sectors, educate and sensitize the public about their rights and opportunities, attune programmes to public needs, strengthen local institutions and make them more accountable and act as a conduit for citizens consultations and advocacy. The NGOs therefore appeared to have well developed technical experts in gathering reliable data on natural resources management and issues and on government over stressed efforts in addressing the needs of the people especially those reached by official development programmes. Such situations were due to a sharp decline in public natural resources.

Non-Governmental Organizations play a significant role in the development of any nation. Thus they are key partners in national development as they focus on crucial activities of national concern such as the welfare of children, the disabled and the aged, as well as helping disadvantaged communities to access basic needs such as health and education among others.

The NGOs' closeness to grass roots organizations in the south, their emphasis on help for self-help and their independence from the foreign policy and economic interests of the

North, allow them to orient their cooperation activities on the basic needs of the people in developing countries and that enables the NGOs to make a credible and effective contribution to social change. But this self-made claim leads the public to expect big things of the organizations, which perhaps cannot be fulfilled.

The NGOs have largely failed to address this point, thereby missing the opportunity to take a self-critical look at them. Only such stocktaking, however, would permit answers to the question of what the NGOs will stand for in the 21st century.

Focus on core tasks

NGOs are increasingly assuming tasks, which earlier were the domain of government actors. For example, the organizations support among other things, the expansion of infrastructure in urban as well as rural areas and public health and education systems. Various factors are helping to drive this development.

First, the neo-liberal concepts of many structural adjustment programs have made developing country governments pull out of political areas, which in most industrialized nations are controlled by governments, if not implemented by them.

Second, donor governments are happy to give up cooperating with inefficient and sometimes intractable official partner structures if NGOs offer themselves as competent intermediaries or implementing organizations.

Third, the industrialized nations' development cooperation agencies score a double coup by such switching of responsibility for a project. They gain vicarious from the NGOs' positive image and can be pretty sure that the NGOs will not criticize the measures.

Finally, in line with the liberal ethos on democracy, the NGOs are regarded as the champions of democratization and the foundation of a civil society.

This leads to the NGOs running the risk of allowing themselves to be instrumentalised as they fill-in for the cutbacks and failures of official development cooperation and become the victims of their own claims. To date, nothing has indicated that, measured against developmental benchmarks such as effectiveness, efficiency and significance, the quality of NGO inputs in such sectors as infrastructure and advisory services for parastatals is better than that of government implementation organizations.

An undisputed strength of the NGOs in the north is that they have good contacts with their local counterparts or self-help initiatives and many years' experience in this sector. But being close to the grass roots reduces the financial volume of potential interventions because that depends to a great degree on the limited capacity of the partner on site to absorb large sums of money. Moreover, North NGOs are as a rule too small and too diversified to achieve the degree of specialization necessary for professional assessment and supervision of promotional measures. Not least, the NGOs' target groups want mostly a package of measures more akin to community development approaches than to single sector projects.

These strengths and weaknesses present guidelines for defining the NGOs' core tasks. They should focus on their strengths to give their profile sharper edges. That includes pointing out to the industrialized nations' development cooperation agencies own core missions. Instead of performing in non-government sectors, to which its instruments are not suited, official development cooperation should, rather, ensure that developing country governments and their administrative bodies can competently fulfill their tasks.

NGOs are often engaged in litigation to help monitor and enforce environmental laws, which some see as a way to keep government honest and responsive to public concerns. They also participate in the often-complex administrative processes of executive agencies such as standard setting, rulemaking and other implementation actions. A smaller number of groups have engaged in electioneering or use of campaign contributions, political endorsements and support for officials during election campaigns, to achieve their goals. The logic here is to help ensure that policy makers sympathetic to environmental

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concerns are elected to office. Many other environmental NGOs, such as Resources for the Future, the Union of Concerned Scientists, the World watch Institute and the World Resources Institute have focused more on education, policy analysis and scientific research rather than policy advocacy.

They are infact a highly desperate set of individuals and organizations with widely varying purposes and strategies. Some of the characteristics of environmental NGOs during the decade of the 1970s were distinctive to that time period and other attributes continue to the present day. Among the former was an understandable tendency among advocacy groups to play an "outsider" role that often became confrontational and adversarial. Environmental groups frequently challenge corporate decision-making and labeled polluters as callous and unthinking. They press government at all levels to enact and enforce tough new regulatory laws on clean air, clean water, toxic chemicals, endangered species and a host of other issues (Mullet and Yaffee, 2007). The assumption was that only such "command-and-control" policies, particularly at the federal level of government, could change corporate behaviour (and actions by state and local governments) and thereby control pollution and abuse of natural resources.

These groups were also adept at translating and promoting new scientific research. For many reasons, scientists themselves are often reluctant to get involved in public controversies and the policymaking process, leaving the public and policymakers to deal as best they can with complex technical issues. Environmental NGOs helped to fill this void by bringing scientific discoveries to public and policymaker attention and by clarifying both the technical and policy issues. They did so in part through release of their own reports that summarized scientific studies and often gained significant and positive media coverage. Sometime those studies were used to challenge government positions based on conflicting data and interpretations (Kraft, 2004). At least, they highlighted important issues that might otherwise have been ignored. Survey data from the period indicated a rising level of public concern about environmental and health groups in their quest for policy action thus building public knowledge and support for governmental

action which was one of the most important ways in which environmental groups successfully pursued their goals.

Despite the efforts of NGOs, Central and Local Governments efforts to promote sustainable development, remain unachievable. According to Prabkar, (2000), today the cry of environmental degradation is heard from all the nooks and corners of the world and it has become a major threat to the existence of humanity on challenge of our times. The academic focus on degradation of environment has concentrated mostly on the potential cause of environment problems such as deforestation, over fishing, pollution, hunting, land degradation, high population growth and poverty.

The Brundtland Commission report argued that, poverty is a major cause and effect of global environmental problems (World Bank, 1998). It further argued that, any attempt to deal with environmental problems without a broad perspective that encompasses the factors underlying world poverty and international inequality is rather futile. Nevertheless, the casual linkage between poverty and environment are rather complex and thus still subject to contention.

The economists notion is that it's impossible for the world economy to grow it's way out of poverty and environmental degradation. This means sustainable development is impossible. More than one billion people live in absolute poverty. African continent is much more affected than others. Every year, millions of children die from malnutrition and preventable diseases. Increasing of human population had risen consumption of natural resources which has been rampant on the African continent, leading to resource depletion

Poverty is related to environmental quality and people's quality of life because more people often deplete and degrade local forests, soil, grass lands, wildlife and water supplies for short term survival. They do not have the luxury of worrying about long term supplies of natural resources when their daily life is focused on getting enough food and water to survive. According to World Bank (1998) report, nearly half of humanity suffer from poverty and are trying to survive on less than \$ 1 - 3 (Us) a day. About 70 percent

of these people are women and children such poverty has a number of harmful health and environmental effects.

High rate of population growth is the major cause of the natural resources degradation. however with modern methods of family planning and contraception uses, the technology exists to slow down population growth in most parts of the world. Most Governments and many family planning programmes that seek to encourage the use of contraception for the having a small family (Nicholas, 2004). the key factor for change is to attain high level of education in particularly for women. The high rate of girls in education is evidence that the women will have children at later age and have fewer children in number.

Many NGOs and Governments working on developing family planning policies now focus their attention on providing primary school education for girls as a priority (Shivji, 2006). The world has been experiencing rapid population growth since agricultural and industrial revolution. The trend show that there were 1 billion people in 1804, 2 billion in 1927 (123 years later), 3 billion people in 1960 (33 years later), 4 billion people in 1974 (14 years later), 5 billion people in 1987 (13 years later), 6 billion people in 1999 (12 years later). The World population may reach 7 billion in 2013 (14 – year later), 8 billion in 2025 (15 years later) and 9 billion in 2050 (22 years later).

The main reason for rapid growth of the human population over the past 100 years has been a much greater drop in death rates. Because of increased population growth and pre capital resource use, some of the natural resources that support life are being used unsustainably. This includes premature extinction of a growing number of the world's plant and animal species at a rate of 100 – 1000 times faster than humans arrived on earth. Degradation or destruction of coral reefs and forests in some parts of the world, gradual depletion of the underground water supplies in some areas, biodiversity and habitat destruction etc. are result of the high demand for food to feed the growing population currently standing at 887,964,000 for Africa.

The delicate balance between population number and food supply highlighted between 1970 and 1980s was a well-documented famine in the horn of Africa and Sahel. The population in Africa has already exceeded the carrying capacity of the natural resources despite the declined by 5% of the fertility between 1970 and 2000. The natural resources will be degraded at rate of 4.55% per year into 2010 and 12% per year in 2040 (Grifo and Rosenthal 1997). The problems posed by a rapid growing world population have historically been discussed in the context of food: that is how to produce sufficient food and distribute it effectively to prevent the starvation of millions in over crowded countries or in the countries with minimum agriculture development.

Yet even considering the most factors such as food, projections about the adequacy of food production, for example, require for more information than just the number of people to be fed and the amount of available land. The total arable land (land suitable for agriculture) in the world has been estimated at 7.9 million acres; or about 1.5 acres per person of the present population. The major limitation of this figure is availability of water, as rainfall or through irrigation (Carla, 2006).

There is also the question of what crops can or should be grown. The world populations are not being fed with most of the resources in efficient ways. To produce one ton of corn requires about 250,000 gallons of water, a ton of wheat requires 375,000 gallons, a ton of rice, 1,000,000 gallons, a ton of beef requires 7,500,000 gallons of water. Some new high yield of crops varieties may require irrigation whereas native varieties may not. The total irrigated acreage in the world has more than doubled in three decades. However, water resources are dwindling in many places and in time. The water costs for food production need to be taken into greater account (Nicholas and Rosalind 2004) as population continues to grow. Consumption of minerals and energy resources has grown faster.

2.3 Strategies used by NGOs in natural resources management.

NGOs are organizations that are established outside government hierarchy to supplement the government efforts with regard to specific development initiatives (Bergsen, *et al.* 1992). Recognizing that every grouping of NGOs is arbitrary, it is used to think of NGOs

in three general categories; those that are basically alliance of other groups, and those that engage in direction; and those whose primary activities are educational and informational in nature.

The most important alliances of environmental groups are the African NGOs environmental network, which consists of over 530 member NGOs in 45 African countries. Its primary purpose is to facilitate communication and cooperation between and among its member NGOs. It also provides advice, information and training in the areas of its primary policy interests, water management, renewable energy, deforestation, sustainable agriculture and wildlife resources.

NGOs are engaged in direct actions: they sponsor projects, engage directly in environmental activities, and mobilize individuals to engage in such activities. Good example of these NGOs are: Earth watch, Friends of the Earth International, Green peace, the Green Belt Movement, the Sierra Club International, and the Worldwide Fund for nature (Donald, 1996).

NGOs consist of organizations whose purposes are primarily focused in the areas of various development initiatives. They sponsor conferences public materials, establish communication networks and encourage educational activities for young people. The purposes of primarily educational and informational activities are to teach young people about environmental problems. The local communities are educated on the environmental problems, how to solve them and how to develop environmental policies. In additional activities, the societies support research and publications on sustainable development and alternative development strategies. Lacey, (2003) found that NGOs contribute to the International policy-making process in four ways.

First they enhance legitimacy of the decision-making process. In essence, NGOs provide the mechanism through which people are affected by the pending decisions. They are the source of facts and perspectives that would not be available otherwise they help balance access to decision makers. NGOs participation helps to foster public education. Since

they are involved in many decision situations. NGOs are able to report to their members, information that would not be reported in the press. They serve as “watch dogs” for national delegates. In this way NGOs have emerged as major actors in the environmental policy process.

The Tanzania government has created various institutions to deal with environment management council (NEMC), Ministry of Natural Resources and Tourism (MNR&T), NGOs and several programmes. Several sectoral and/ or field specific environmental conservation activities have been undertaken at different levels (zonal/regional/district-based conservation programmes) either by government or Non-Governmental Organizations.

2.4 Problems faced by NGOs in their efforts for conserving natural resources.

NGOs are among groups of stakeholders or actors, which play roles in natural resources management. They are concerned with influence or control of policies and actions of government of the policies and actions of government of local, national and International community. They help to prevent the degradation of the commonly owned or shared resources such as air, water, wildlife and public land. They are also concerned with setting policies on environmental and resources uses and help the government to make sure that the policies are implemented (Ministry of Agriculture and food security, 2001).

NGOs face many problems, including lack of highly professionals. A few are highly professional while many other NGOs lack highly qualified personnel, financial and human resources, materials and cause political interferences. These are problems facing NGOs in their efforts to conserve natural resources. Some NGOs are located primarily in the more highly developed countries on the North and work only in local issues. Other are NGOs with headquarters in the Northern Hemisphere but focus their attention in the North but focus their attention on the problems of developing countries in the south. Others are at the fringe of society sometimes literally crying in the wilderness (William, 2001).

2.4.1 General problems facing natural resources management

Some people in the third world countries destroy natural resources not because of ignorance but in an effort to survive. In many cases the poor are forced to opt for short-term benefits in order to satisfy the urgent needs and thus unable to protect the natural resources on which they depend (Cormick, 2005). On the other hand, the poor people are just the victims rather than perpetrators of environmental degradation because population growth is one problem, which apparently cannot be blamed on the industrialized countries (Timberlake, 1991). However, other scholars suggest that, the major concern for the cause of natural resources degradation is not population growth but the causes are instead embedded in the economic impoverishment.

Higgins (2002) suggests that the recommendation of the Club of Rome in 1972, which called for an end to exponential growth as means of recovering the equilibrium between population and resources, is somewhat unrealistic. There are some reasons that he suggests in support of his argument that, international trade has become distorted in ways that have led the poor to actively “feed” the rich. This is evident during the period between 1981 and 1984, when profit remittances from Least Developed Countries (LDCs) were US\$14 billion on average annually (Riddell *et al.* 1998). Annual interest payments on foreign debts increased ten fold from US\$ 2.5 billion in 1970 to US \$51 billion in 1981. Food consumption levels worldwide actually declined and as such, per capita food production in Africa declined by 10% since 1970. This short fall was precipitated by increased imports.

Again, since 1979, both the world economy and the population growth grew at an average rate of 1.7% per annum (Andrew, 1998). The same period also saw the rise of oil prices from US \$2 a barrel in 1972 to an average of US \$ 12 a barrel between 1972 and 1979. This multiplied to US \$ 31 a barrel between 1979 and 1983 (World Bank, 1997). Such trend as illustrated above, have a big influence on the economies of Africa.

The deteriorating terms of trade for the developing countries have therefore led to a wide clearance of equatorial rain forests, tropical forests and grassland to give way for exports

led to stock rising. In addition, poor balance payments and the debt crisis have ushered in over dependence of such countries on fuel wood as petroleum based energy costs are high. Such problems are not likely to be solved by only environmental conservation or sustainable development advocated for by the international monetary fund or World Bank. These problems can only be dealt away with in systematic ways that lead developing countries out of poverty (Timberlake, 1991).

According to Omara-Ojunga (1992), absolute poverty in developing countries is characterized by the inadequate provision of food, shelter, clothing, drinking water, sanitation, health services, education facilities and opportunities for employment. (Deng, 1996) names categories which facilitate identification of Africa's poor as: income, access to basic services, female headed households, retrenched and the unemployed, refugees and marginalized ethnic minorities. This situation is worse when the same populace lacks the opportunity and freedom to participate in the decision making process and does not enjoy human rights. This state is further aggravated by a weakened physical and mental well – being, resulting in a large section of the population that is de-motivated in initiative in both themselves and community affairs. The individual become isolated, powerless and destitute. Environmental degradation currently heightens local, regional and international tensions as people are forced to abandon their degraded land and encroach on other already populated lands. Thus conflicts and violence are becoming commonplace. The combined impact of poverty and the environmental degradation on local areas is matter of increasing populations and alienation. Indeed, as far back as 1982, Timberlake (1992) – observed that, “traditionally, African populations have reacted to political pressure and land pressure by moving on. But African's open places are closing up, due to population growth and mismanagement of the land, two other phenomena which are causes and effects.

In a recent study on structural adjustment and sustainable development, Bagachwa, et al. (1995), demonstrated that SAPs have numerous negative implications on the environment and if there are no sustainable strategies that address, poverty of environmental degradation is likely to accelerate. These appears to be a parallel between this point and situation under study in that as people are being further marginalized, they tend to exploit

whatever resources, in whatever manner possible regardless of the consequences. Job insecurity and absolute lack of social security, increasing food insecurity, falling real income and a despicably poor level of retirement security of urban and rural people combine to portray a gloom and hopeless situation. Combination of these factors has led to the mushrooming of jobs and income generating activities outside the formal sector (Baganchwa et al. 1995) some of the information sector activities have a bearing on local resource exploitation as in the case of summoning, quarrying and lime – making which are closely linked to construction.

Historically, development and conservation of natural resources have been in conflict: because, conservation viewed as the wise use of natural resources, and development viewed as the exploitation of natural resources to promote high standard of living. For planet earth to continue support living organisms, the earth summit 1992 in Rio de Janeiro Brazil developed the concept of sustainable development as the development that delivers basic environmental, social and economic services to all without threatening the ability of the natural built and social systems upon these services depend; in other words it is development that services current needs without imposing on the ability of future generation to support themselves. It's that development where the natural capital does not decrease overtime the capital stock includes all the environmental and natural resources assets such as fossil oil and natural gas in ground, surface and underground water, the land and its capability, forest, fisheries resources, grasslands wetlands etc. Sustainable development aims at promoting, improving and maintaining the wellbeing of 60th the people and ecosystems (World Bank, 1998).

2.5 Measures to enhance NGOs roles in natural resources management.

In the past the government relied on the command and control (top-down) approaches to protect the natural resources. These approaches proved to be ineffective. Now it is increasingly acknowledged that successful management of natural resources can be attained through increased participation of stakeholders. At present a number of strategies have been introduced in order to conserve the environment (IUCN, 1994). recent years there has been increased awareness of global environmental issues and appreciation that

action on the worldwide scale is needed if threat posed by the green house effect the loss of biodiversity and the depletion of ozone layer, have to be overcome care and protection of the environment are among the most important challenges of the world today. Successful management of the environmental resources can only be achieved by involving the people themselves. Participatory approaches rather than the top down approaches should be encouraged in deciding conservation of environmental resources. NGOs are given freedom to work and involve local lead people in their activities. NGOs must be provided with environmental education to enable them to participate in decision-making process. The government and NGOs should make sure that the local communities should be empowered to participate in resource management through access to the information and technology. A successful natural resources management programs can only be attained if the stakeholders of natural resources are taken into consideration. A sustainable natural resource management program will be attained if there is a guaranteed for supply of livelihood support systems and give technical and financial support to NGOs (National Environmental Policy, 1997).

The government adopted sector policies related with forest: mineral, wildlife: fisheries: agriculture and livestock and land which put priority on conservation and management of resources and environment, raising public awareness and understanding of the linkages between environment and livelihood, and promoting international co-operation on environmental agenda. Current intervention are directed in implementing the National Action Programme to Combat Desertification, Biodiversity Conservation, environmental friendly production practice sand abatement of pollution and strengthening both human resources and institution (Bagachwa et al, 1995).

It is clear that current global, regional and national environmental conservation and management are aiming towards overcoming poverty-related problems, diseases, food insecurity and insufficiency, filth shelter, unsafe water, inadequate energy supply and unemployment.

Growing awareness of the general public and individuals advantages of sound environmental conservation and management forms the basis for sustaining the resources

and environment. This goes together with implementation of sound strategies on poverty eradication as poverty is highly tied with unsustainable resources utilisation and environmental degradation and promotes joint gender efforts. Furthermore, the government has committed itself in environment conservation and management and poverty eradication with full support of individuals, CBO, NGOs and Donor Agencies.

Scientific NGOs are likely to play a central role for years to come as citizen groups themselves begin to develop. Such a role would be enhanced to the extent that scientists are willing and able to assist the public and policymakers in understanding environmental problems, their causes and possible solutions. Many prominent scientists have underscored such a role in recent years. Yet science alone is almost never sufficient to design, adopt and implement environmental policy. Policy decisions inevitably involve social, economic and political judgments about levels of acceptable risk, which policy strategies will work best, political feasibility and administrative feasibility. Hence the role of science is to inform those judgments, not necessarily to make them. At the same time, public officials must be receptive to concerns voiced by the public and scientists. If the experience of the United States is pertinent, the concept of sustainable development may provide a vehicle for bringing policy makers, scientists and citizens together to discuss environmental problems of concern and their relationship to social and economic issues (Mullet & Yaffee 2007).

Moving toward sustainable development, it requires new mechanisms and institutions that can assist in balancing human and ecosystem needs. There is a need to develop new policy strategies and tools. These tools include use of market incentives, public-private partnerships and extensive public involvement in environmental discussion making, these new policy approaches and tools highlight a special role to be played by environmental NGOs.

CHAPTER THREE

METHODS

3.1 Research design

The study adopted mainly descriptive research design in establishing the roles of NGOs in natural resource conservation. The findings were tabulated with the aid of frequencies and percentages and later interpreted on charts and graphs.

3.2 Study Area

The study was carried out in Kigoma District in Western Tanzania. It lies on the rift valley of Lake Tanganyika at an altitude of 772.67m above sea level within terrain consisting of a series of hills rising to 1000 m above sea level. The study was conducted in four divisions namely Mwanga North, Mwanga South, Mahembe and Kalinzi and because of their richness in wildlife endowment, in terms of habitats, and diversities of animal and plant species. Nearly 25% of Kigoma district is protected, under forest reserves, game reserves, fresh water reserves, and Mahale and Gombe National Parks. The district harbours a great number of biological diversity, which contributes to the national heritage and also significantly to the social and academic development. These protected areas have attracted many NGOs, TACARE inclusive to operate in the area.

3.3 Sample size

The sample constituted three categories of the respondents namely: the local community, local council officials and TACARE extension officers. The first group comprised of 220 local people from four divisions namely: Kalinzi, Mahembe, Mwanga North and Mwanga South selected by randomly sampling.

The second group of 20 people included 20 members of local council officials and decision makers. The third group included TACARE extension officers; these were 15 respondents who coordinated with the researcher.

The method used to select the sample was stratified sampling in which calculations were made based on each portion or strata. Total from each sample was obtained and there after, combined them to get the required stratified sample as indicated in Appendix IV by using Slovene's formula.

3.4 Sample selection

To select the village for study, random sampling technique was used. The list of Divisions and villages were obtained from the office of the Kigoma District Director.

To select respondents from the village, the systematic list sampling technique was used. The names of 10 village respondents got from the village secretaries, obtained after taking member from the village (Appendix IV)

The purposive sampling method was used to select the representatives of local council and TACARE officials, who the researcher believed possessed valuable information.

3.5 Research instruments

A variety of data collection instruments were used including Interviews, questionnaires, and group discussions, observations, photography, literature reviews and Internet search.

3.5.1 Questionnaires

A logical set of questionnaires were developed determining for the activities and strategies TACARE employed in conserving the natural resources and participation of local people in conserving the natural resources. Closed and open-ended questions were used. Self administered questionnaires were read to those the researcher recorded down who could not read and write, and their responses. The literate respondents filled the questionnaires themselves. Questionnaires were used because they save time and therefore we easy to administer.

3.5.2 Interviews

The researcher used both open ended and closed interview schedules. Some structured questions were used as a guide when interviewing the respondents. This method involved face to face discussions between the researcher and the respondents this method was used because of its advantages over alternatives methods. The method allowed for the questions to be rephrased whenever the respondents could not understand. The method also provided adequate sampling of population from whom the data were collected specifically for the respondents from urban, local council leaders and TACARE technical officers.

3.5.3 Focus group discussion

This was conducted to get in-depth information on the study topic. The NGOs and Extension technical and Kigoma district council officials were involved.

3.5.4 Observation

Observation is a purposeful and systematic way of watching and listening to an interaction or phenomenon as it takes place. It was used to get first hand information in order to prove whether the information given by the respondents were right or wrong. This helped in getting information that related to the activities of TACARE and how they contribute in natural resource conservation in Kigoma district. Site survey helped in the literature review to what happened in the field. The overall aim of the observation was to establish the relationship between the activities and strategies of TACARE used in conservation of natural resources.

3.5.5 Photography

Several photographs of different activities leading to the degradation of natural resources were taken in the field. This was used to reveal the situation the ground.

3.5.6 Validity and Reliability

According to Frankel and Wallen (2001) testing for validity and reliability in the research is very important. The research questions were first tested before distributed to the final respondents. This aimed to test the appropriateness and consistency of the instruments. A

pre-test was done among colleagues, which helped to modify the questions. The supervisor also was consulted for expert knowledge on the questionnaires construction. After the assessment of the questionnaire, necessary adjustments were made bearing in mind the aim and objectives of the study. The questionnaires were finally administered to the selected respondents.

3.6 Data Analysis

Descriptive methods were used to describe the basic characteristics of the data in the study. Data obtained from the field were edited and assigned answer codes to allow verification of responses. The descriptive statistics approach simply described what the data were and what they showed both quantitative and qualitative data analyses were used. Descriptive methods, frequency tables, photographs and pie charts were used to present the findings from the questionnaires, observations, and interview schedules. Quantitative and qualitative data obtained were statistically analyzed using Statistical Programme for Social Sciences to generate charts, graphs and frequency tables. The statistics were presented using charts, tables and percentages. The photographs were used to show a general picture of the information presented. The conclusions made were based on frequencies and percentages from the calculated results. This technique summarizes large numbers and makes easy interpretation and understanding of the data collected from the field.

3.7 Limitations of the study

This section presents problems faced during the data collection process.

- i. Some respondents were not willing to respond to questions and sometimes misinterpreted the intentions of the study
- ii. Developing and implementing the questionnaires also created some problems, since the questionnaires was developed in English which language was neither spoken nor understood by the majority of the respondents. In order to make and put question to the respondents more clearly it was necessary to translate the questionnaires from English to Kiswahili, which was believed to be widely understood and spoken in the study area.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Results

4.1.1 Characteristics of the respondents

A total of 255 respondents were used in the study that included local council leaders, TACARE extension technical officers, Kigoma district council officials and local community in the area under study. Out of 255 only 140 respondents returned the filled questionnaires and 35 were interviewed making a total of 175 respondents.

Table 1: Characteristics of the respondents.

Characteristics	Mwanga South (%)	Mwanga North (%)	Mahembe (%)	Kalinzi (%)
1. Sex: Male	62	54	41	45
Female	38	46	59	55
2. Age: Below 18 years	14	7	11	4
18 -30 years	28	42	30	38
Above 30 years	58	51	59	58
3. Marital status: Single	20	27	19	13
Married	73	61	76	83
Widowed	7	12	5	4
4. Education: Primary	56	44	33	51
Secondary	30	41	25	37
Tertiary	13	10	8	11
Others (specify)	1	5	34	1
5. Occupation: Farming	12	17	84	87
Fishing	63	58	7	5
Business	14	13	3	4
Employed	11	12	6	4

Source: Primary data

The information about gender of the respondents, the average of 50.5% of the respondents were males and 49.5% were females. The age of the respondents shows that most of them were above 30 years old, and the majority were married. Concerning the education backgrounds, 46% of the respondents attended primary school, 33.25% went up to secondary, 10.5% to tertiary level, and 10.25% had never gone to school. On occupation, 50% of the respondents were farmers, 33.25 % were fishermen, 8.5% were businessmen and 8.25% were employed persons.

Table 1 shows that most of the respondents left school at primary school level, indicating that the majority of the people in the study area were not educated. The major of the respondents were farming and fishing. This indicates that in the area under the study, there is great dependency on the natural resources that have led to environmental problems such as deforestation, soil erosion and biodiversity depletion.

4.1.2 Activities of TACARE in natural resources management.

TACARE's activities are divided into five primary areas: Community development, forestry, agriculture, health, roots and shoots (Education programs for youth).

Table 2: Activities of TACARE in natural resources management

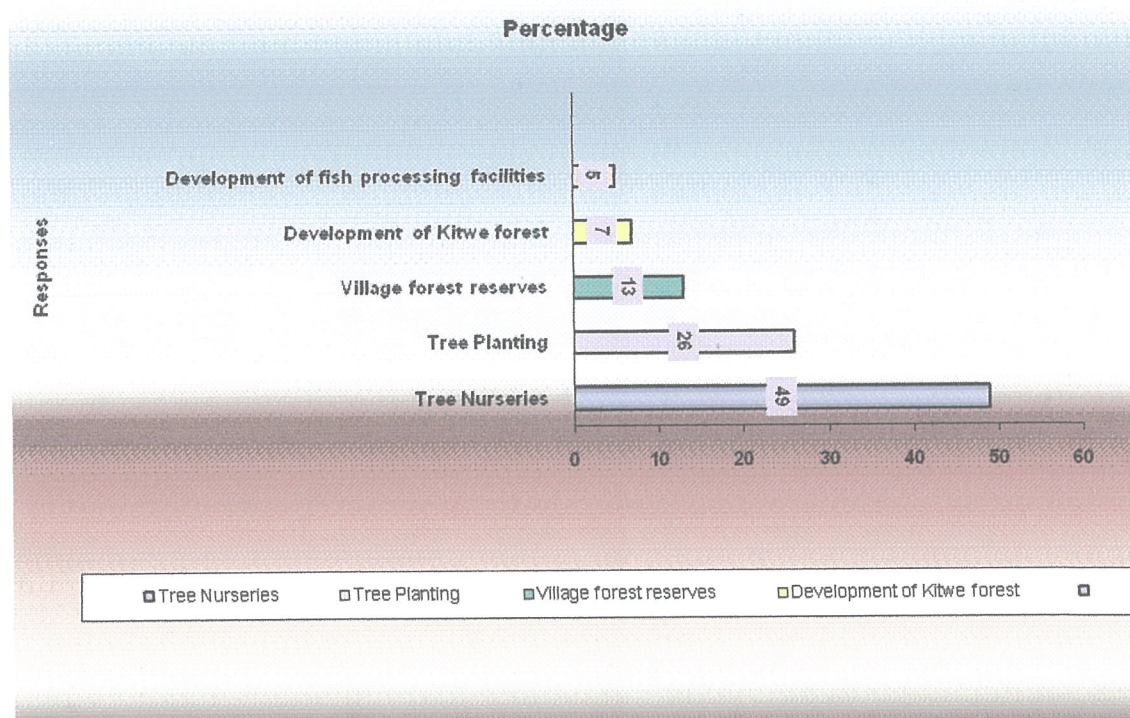
Activities	Frequency	Percentage
Forestry and Fisheries	60	34.2
Agriculture	41	23.4
Community development	35	20
Health	25	14.2
Roots and shoots	14	8

Source: Primary data

Table 2 indicates that the main activities of TACARE are in forestry and fisheries as revealed by 34.2% of the respondents. Their core task is therefore to conserve terrestrial and aquatic resources in the study area.

4.1.3 Forestry and Fisheries

Figure 3 indicates that tree nursery (49%) is the major activity while development of fish processing facilities is the least activity (5%). TACARE's forestry initiatives are multi-faceted. Tree nurseries support reforestation efforts and provide economic opportunity. Tree planting in and around villages promotes a conservation ethic as well as reforestation. Village-managed forest reserves provide a regulated long-term means of conserving forest.



Source: Primary data

Figure 3: Forestry and Fisheries

Tree Nurseries:

The findings from the respondents indicate that 49% of TACARE activity in forestry and fisheries sectors is the preparation of tree nurseries. Village Nursery Attendants (VINAS) are selected by the community to raise seedlings for use by the community in close cooperation with the TACARE project. To date, 80 village nurseries have raised more than 2.4 million tree seedlings and TACARE has trained 51 project staff members and 2,321 villagers in sustainable resource management.

Figure 2 shows that TACARE works together with villagers to plant trees. A total of some 750,000 trees were planted in 32 villages, some in 37 acres (15 ha) of demonstration plots, and 163 acres (66 ha) of communal woodlots. TACARE also offers technical services to NGOs and private companies wishing to start reforestation and conservation projects. TACARE also established village forest reserves which is protected by the community bylaws. These reserves allow secondary growth within indigenous forests. Clear-cutting is prohibited, although sustainable harvest of some products is permitted. Village forest management plans guide the utilization of the reserves. The project also supports government efforts to curb uncontrolled fires in the forest reserves by establishing and training environment committees in each village and promoting non-timber forest activities such as beekeeping and herbal medicine. It was also revealed that 32 villages had established 65 reserves that cover many hillsides throughout the region.

Figure 2, further shows development of Kitwe forest (7%) as another activity carried by TACARE. Twelve-acre (five-hectare) of hard wood plantation have been established in the buffer zone surrounding this forest.

Local people have learned the importance of allowing indigenous plants to grow along the river banks instead of ploughing and planting crops right up to the water edges. In addition people have learnt to encourage biodiversity conservation by planting several different types of plants together.

According to 5% of the respondents, TACARE has provided fish drying racks to Katonga, Kibirizi and Mwamugongo fish landing site station so as to improve the quality of the fish products.

In urban and rural areas the highest percentage of people use the fuel wood and charcoal as the main source of both home and industrial use. Facilitating are developed for fish smoking, brick making and baking bread of all which use firewood. Indoor animal keeping and poultry farming in the urban areas and villages were many and made out of timber. All these activities are cause of the high rate of deforestation.



Plate1: Katonga landing site station Kigoma District indicating the dependence of Forest timber for the construction of fishing boats and fish smoking processing



Plate 2: The piles of timber and charcoal at Mwanga market in Kigoma/Ujiji Municipal Council, indicating the impact of over dependence on biomass energy

4.1.4 Agriculture

TACARE has been involved in various agriculture activities such as agro forestry (64%), cash crop production (21%) and oil palm hybridization (15%) (Figure 4). To maintain the

natural resource base for future generations and enable today's farmers to use the land. agricultural practices must follow sustainability principles. TACARE agriculture programmes focuses on demonstration plots, training farmers and peer educators in on-farm agro-forestry and soil erosion control measures. TACARE provides information on land-use planning, contour farming with vetivaria grasses, and the use of organic manure and pesticides.

TACARE also promotes farming of perennial cash crops as well as vegetable and mushroom. TACARE provides inputs (i.e. seeds and fertilizers) at cost.

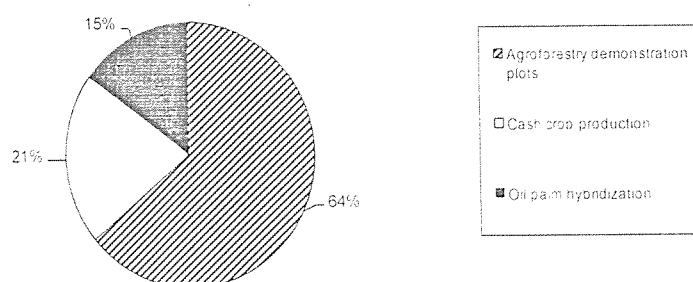


Figure 4: Agriculture activities done by TACARE

Oil palm hybridization:

According to key informants (15%) TACARE operates a pioneer program in Tanzania that raises hybrid oil palms from local germplasm. TACARE provides improved seeds and seedlings to farmers, who grow the high-yield oil palm as a cash crop. Currently 16 village nurseries raise improved oil palm seedlings.

Cash crop promotion.

Through hands-on training and demonstration plots, TACARE helps villagers to grow cash crops including oil palm, coffee, and coconut. Many local people have begun to adopt the techniques of TACARE from the trained farmers. This was reported by 21% of the key informants (Fig 4)

Agro-forestry demonstration plots:

Some 64% of agricultural activity done by TACARE is agro-forestry. To re-introduce nutrients to the soil surface and to reduce soil erosion, villagers are trained to plant trees and grasses along contour lines. Thirty-one demonstrations have been established on fields of key farmers and on communal land.

TACARE imparted local people with agro forestry technologies. Training activities that have been undertaken include baseline surveys (before project intervention) on levels of understanding and practice of agro forestry technologies, selection of target farmers based on willingness to cooperate and manage trials, training of target farmers on agro forestry technologies, training of farmers who assist peers in laying out agro forestry plots and disseminating of agro-forestry technology (Kiswahili is termed as KILIMO MSETO).

Despite the fact that, local people have been involved in natural resources conservation, there are still considerable incidences of the natural resources degradation. Of great concern is the rate at which deforestation is occurring in the area. Deforestation is the permanent destruction of indigenous forests and woodlands. Deforestation in Lake Tanganyika catchments is brought about by the conversion of forests and woodland to agriculture so as to feed the growing number of people, the felling of trees for firewood and building materials, development of cash crops and ranching and the harvesting of fuel wood for fish processing and boat building, to mention few among others.

In addition, there are so many charcoal-selling places and piles of wood heaped along the urban streets ready for sale.

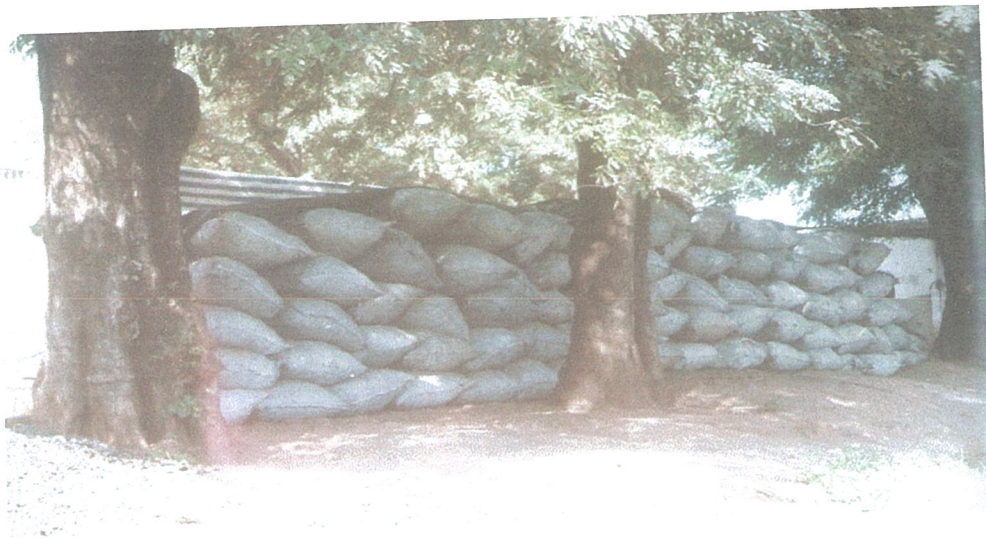


Plate 3: Charcoal bags for sale at Mwanga center in Kigoma Municipal

Plate 3 depicts the impact of dependence on Biomass Energy. There are so many charcoal selling places and piles of wood heaped along the municipal streets ready for sale.

4.1.5 Community Development

Community development aspect of TACARE focuses on improving the standard of living in the region of Lake Tanganyika while promoting reforestation, curbing soil erosion and delivering conservation education to the local population. TACARE especially focuses on women's development and encourages and assists in the development of women's networks that support small-scale businesses and individual goals.

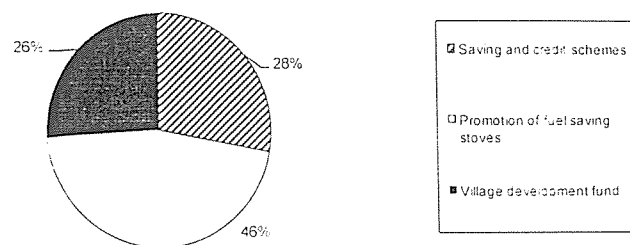


Figure 5: The main community development activities carried out by TACARE in the study area.

The respondents revealed three activities that contribute to successful community development. These indicated in fig.5, include: saving and credit schemes, promotion of use of fuel saving stoves, and village development fund.

Saving and credit schemes:

TACARE has developed a savings and credit scheme to facilitate the creation of micro-enterprise finance institutions in the Kigoma region as reported by 28% of the respondents. TACARE monitors the savings process on a regular basis. If a group makes sustained contributions, a two-week training course is initiated in the village. The training provides skills in-group management, basic business operations, record-keeping and general administration. It seeks to develop among members a strong sense of ownership, responsibility, teamwork, leadership, strategic planning and a methodological approach to the organizational management of a financial institution.

Promotion of fuel-saving stoves:

Figure 5 reveals that TACARE as confirmed by 46% of the respondents, promotes the use of fuel-efficient stoves that reduce firewood consumption by 60 percent. TACARE has trained more than 400 women in the use and construction of these stoves. The time saved by using these stores, women can engage in other economic activities and ultimately elevate their status in the community and their self-esteem. Women in Africa spend the majority of their time collecting firewood. Every two to three days they walk

for perhaps eight hours looking for firewood. This agrees with (Prakbar, 2000) that, the problems facing many people in Tanzania relates to the availability of firewood. As more time is spent for collecting firewood less time is available for food production and other activities, including leisure time. In contrary, food and fuel wood are taken care of simultaneously through efforts of TACARE making life comfortable. It has been appreciated that all activities of conserving natural resources are vital for ecological value. Healthy ecosystems, genetic diversity, and aesthetic value among others for the benefit of present and future generations. Training helps the beneficiaries to manage activities on their own; this helps the beneficiaries to adopt the conservation measures.

Village Developing

In Figure 5, 26% of the respondents indicate that a number of community development projects have been initiated under the efforts of TACARE. These include infrastructure support, the rehabilitation of water systems, awarding scholarships for women, teaching of counseling and provision of education on gender related matters.

4.1.6 Health:

TACARE has been involving itself in health projects with a focus on improving access to family planning and reproductive education and supplies (Table 3).

Table 3: Health services promoted by TACARE

Activity	Frequency	Percentage
Voluntary counseling services and family planning methods	112	64
Community based distribution agents	63	36

Source: Primary data

Voluntary counseling services and family planning methods as indicated by 64% of the respondents are provided to both men and women in conjunction with distribution of family planning methods that include condoms, oral contraceptives, voluntary sterilization, IUCD, Depo-Provera, and natural methods. Currently 57% of the villages in

the project areas receive reproductive health education and materials. It was also reported that TACARE trains community members selected by peers to disseminate family planning information and resources reported by 36% of the respondents (Table 3). These activities are aimed at controlling population growth that is among of the causes of degradation of natural resources.

4.1.7 Roots and Shoots (Global Environment and Humanitarian Initiative for Youth).

TACARE conducts environmental education in secondary schools and children's centers in 20 villages. Children take an active role in developing and implementing projects relating to animals, the environment, and their communities.

Table 4: Community evaluation of TACARE activities on natural resources management.

Types of measurements and perceptions	frequency	Percentage
High standard of living by providing employment	42	24
Conservation of natural resources	39	22.2
Poverty alleviation	34	19.4
Awareness on environmental protection	18	10.2
Coordinating with local government on environmental issues	16	9.1
Initiation of saving and credit schemes	14	8.3
Counseling families about family planning methods	12	6.8
Total	175	100

Source: Primary data

Table 4 indicates that of the local community evaluation on the activities done by TACARE, 24% of the respondents realized that TACARE has created employment opportunities that has improved peoples' standard of living. In addition, 6.8% of the respondents revealed that TACARE has also assisted the community in the field of guidance and counseling on family planning methods.

4.2.1 Strategies TACARE uses to conserve the natural resources.

This section is intended to determine the strategies that facilitate TACARE activities of conserving the natural resources. The findings obtained revealed such strategies employed include; sectoral programming, community participation, training, political influence and networking with other NGOs. (Table 5)

Table 5: Strategies used by TACARE in implementing activities of conserving natural resources

Strategy	Frequency	Percentage
Sectoral programming	3	20
Community participation	6	40
Training	4	27
Political influence	1	6.5
NGOs Networking	1	6.6

Source: Primary data.

Community participation in natural resources management

Community participation is the main strategy used by TACARE in the conservation of the natural resources as revealed by 40% of the respondents. The magnitude of the effectiveness of people's participation on TACARES capacity to conserve the natural resources was measured in terms of the role played by rural people in natural resources conservation. The findings presented in Table 6 with corresponding frequencies and percentages revealed a number of contributions that the local community perform in natural resources management. Nearly 35.4% of the respondents revealed that the local community generates ideas whereas 15.4% of the respondents argued that collective efforts are maintained by both the organization and the beneficiaries in their respective roles. Some 23.4% of the respondents indicated that, community participation brings about easy implementation of the organizational programmes and ensures continuity because people attain skills concerning the conservation of natural resources as well as

developing a sense of belonging to the project. 10.4% of the respondents revealed that local community helps in solving natural resources degradation problems.

Still concerning the issue of community participation it has been put forward by the extension officers of TACARE that local people work hand in hand with the other NGOs efforts of conserving natural resources. The findings revealed that the community participates in conserving natural resources.

Table 6: Role of local community in natural resources management

Responses	Frequency	Percentage
Local people generates ideas	62	35.4
Collective efforts maintained	27	15.4
Easy implementation	41	23.4
Solving natural resources problems	18	10.4
Conservation strategies	27	15.4
Total	175	100

Source: Primary data

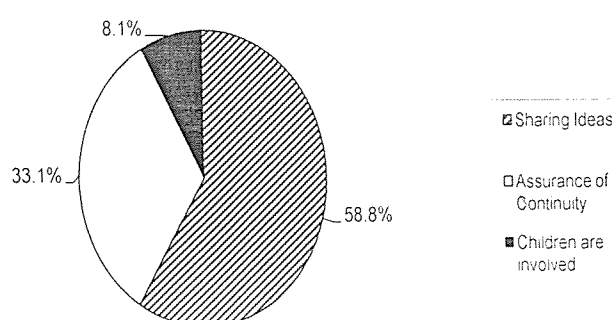


Figure 6: Community participation in project implementation.

Figure 6 shows that community participation is great in the natural resources management. The highest (58.8%) number of the respondents argued that, when rural people are involved they share ideas that are adopted by the whole community. Fore example learning new farming techniques that led to natural resources management such

as agro forestry, a forestation, reforestation and use of organic manures. Furthermore, 33.1% of the respondents emphasized that community participation in natural resources management assures the sustainability of the natural resources stocks. It empowers local people to take full participation in natural resources management. it gives them full recognition and power in participation in planning, decision making and taking positive action led to mismanagement of natural resources. Some 8.1% of the respondents reveal that community participation has helped to involve all groups of people including children. However, it is evidenced that sustainability of the NGOs programmes is not only dependant on efforts of its workers but also on the community acceptability. This is because people want to see that they implement the ideas they put forward and sometimes competition is created among them. This implies that community participation is very crucial for TACARE's efforts in conserving the natural resources.

Further more, the respondents indicated that, there is no more imposition of conservation measures on the people hence both the organization and beneficiaries in their respective places maintained a collective effort. Other respondents argued that people's participation brings about easy implementation of the organization programmes and ensure continuity because people attain skills of the conserving the natural resources as well as developing the sense of ownership. On the other hand, some respondents revealed that, where people are involved in natural resources conservation activities, the sustainability of the project is assured.

However, it was also reported that it is costly to involve people. It takes a lot of time and money especially when training them the various ways of conserving the natural resources such as agro forestry, sustainable fishing, sustainable farming methods, etc.

4.3.2 Training of local community.

Table 7 reveals the various strategies TACARE uses in her efforts to conserve the natural resources which included sensitization (53.3%), holding Seminars (26.7%), workshops (13.3%) and conducting study tours (6.7%).

Table 7: Training of local community on the conservation of natural resources by TACARE

Training	Frequency	Percentage
Sensitization	8	53.3
Seminars	4	26.7
Workshop	2	13.3
Study tours	1	6.7

Source: Primary Data

Responding to the training strategies used by TACARE, the key informants and the field research assistants of TACARE agreed that, they carry out training programmes to attain their objective of natural resources management effectively. Training has helped the organization to extend its services nearer to the people through capacity building. This is done to ensure continuity of their activities in the area, since they are operating in various parts of the district, sometimes, their field research assistants usually go to the field to work with trained local people.

The programme coordinator of TACARE acknowledged that training helps beneficiaries to attain skills and manage activities on their own. This helps the beneficiaries to adopt the conservation measures even if the organization leaves the area. Conservation education has focused on raising awareness of the importance of wildlife preservation which is based on the principle that local communities will be encouraged to practice conservation if they understand the importance of doing so. Environmental education activities have also been introduced to reduce local opposition to the strict management of wildlife and protected areas and to improve relations between local people and conservation authorities. Conservation educators have not always realized that communities are generally aware of the negative impacts of deforestation and environmental degradation, since they are dependent on natural resources for their livelihood security, and as a result any depletion affects them directly.

These approaches attempt to establish equitable partnerships so that all stakeholders have an equal opportunity to control, manage and benefit from natural resources in their environment. Stakeholders are given the chance to take part in joint analysis, development of action plans and implementation. As a result, the stakeholders' priorities are incorporated into management strategies. The aim is to propagate a sense of ownership and a strong internal motivation to contribute to sustainable use natural resources. Local people are treated with respect, as equal partners, not as target of conservation education projects. Decision making power is shared. The role of the outsiders, project staff, officials and consultants is not primarily to take decisions but to act as catalysts and intermediaries. The role of local institutions both formal and informal is emphasized, and the formation of local groups or strengthening of existing ones is encouraged.

Training has had significant impact on TACARE's efforts of conserving natural resources, and it has led to various changes in the ways people conserve the environment which comprise of abiotic and biotic natural resources. Positive results have hence been attained that training has helped them to learn how to control soil erosion by using terraces, planting cover crops, carrying aforestation and reforestation programmes.

Table 8: Impact of training on conservation of natural resources

Courses	Frequency (respondents)	Percentage
Soil erosion control	40	24.0
Tree planting	43	25.0
Natural resources harvest	10	6.0
Biodiversity and fragile areas conservation	8	4.5
Use organic manures	14	8.0
Agro – forestry	55	29.0
Eradicating poverty	5	3.0

Table 8 indicates that 25% of the respondents argued that they have learnt how to raise tree seedlings and planting trees which are sources of wood fuel, among others. Some 6% of the respondents argued that TACARE has trained them how to harvest resources in sustainable manner while 5% of the respondents argued that training have provided them with the knowledge of caring for the environment, which provides diversities of living organisms. Some 8% of the respondents argued that, they managed to reduce environmental problems such as salinity and loss of soil fertility by using organic manures hence increasing food security. Some 3% added that reducing environment problems leads to poverty eradication. They have known the value of forests and people are practicing agro – forestry that enables them to maintain soil fertility and reduce soil erosion. In addition 4.5% of the respondents, said that, through training, they have learnt the importance of conserving biodiversity and fragile areas like wetlands, (swamps, oasis, beaches, etc).

Therefore training has had a positive impact on natural resources management and curbing environmental degradation. However, the observation made by the research also agrees with what the findings revealed but there is still a need to train people more with the problems relating to the depletion of natural resources.

4.3.3 Sectoral programming used by TACARE in conserving natural resources.

Table 9: Sectors covered by TACARE in conserving natural resources.

Sectors	Frequency	Percentages
Forestry	5	33.3
Agriculture	3	20
Fisheries	2	13.3
Biodiversity	1	6.7
Advocacy	3	20
Poverty alleviation	1	6.7
Total	15	100

Source: TACARE'S office.

Table 9 indicates areas covered by TACARE in conserving the natural resources. They include forestry, agriculture, fisheries, biodiversity, advocacy and poverty alleviation (credit schemes to special groups). This organization covers six sectors directed towards natural resources management. The highest (33.3% of the respondents) respond towards forestry, 20% to advocacy, 20% to agriculture, 13.3% to fisheries, 6.7% to biodiversity and 6.7% to poverty alleviation.

The key informants also supported that TACARE involves in forestry, agriculture, fisheries, and biodiversity, but some of the activity they did earlier were phased out and they are basically on advocacy and poverty alleviation.

However, when asked why they are involved in few sectors considering how broad the concept of natural resource management is, TACARE revealed that it is manageable in terms of finance (less costly) and labour force required to implement the activity. It is not time consuming and something could be implemented in a short period of time and becomes effective due to the collective efforts geared towards the few sectors covered.

Extension field assistants of TACARE acknowledged that covering such sectors like forests, agriculture, fisheries, biodiversity, advocacy and poverty alleviation are very effective because more efforts are directed toward the small load, to bring desirable results or for them to effectively achieve their objectives.

4.3.4 NGO's Networking

The director of TACARE acknowledged that networking with other organizations has helped it reach a bigger target population in the area. They work hand in hand or in network with CARE International, KINGONET, and CBOs among others. The form of partnership varies from funds, to sharing knowledge, experience and information.

The findings indicate that, net working reduces cost incurred by the organization and helps the organization to overcome difficulties through sharing information. TACARE also networks to attain a response to political pressures. TACARE carries out training programmes with other organizations such as CARE – INTERNATIONAL and KDPA in carrying out programmes of reforestation and modernizing agriculture. USAID in

training farmers on proper management practices required on how to grow cash crops like coffee, oil palm and cereal food crops.

4.3.5 Political factor

Table 10: Political factor strategy used by TACARE

Responses	Frequency In Number	Percentage
Favourable environment	8	53
Mobilization	3	20
Political backing	4	27
Total	15	100

The results in Table 10 indicate that political influence has affected TACARE's activities of conserving the natural resources. Some 53% of the respondents argued that, political influence has helped to create a favourable atmosphere in which NGOs operate. Then 27% of the respondents said that political influence creates joint action where by political and local leaders mobilize people and come up with collective efforts towards natural resources conservation.

Some 27% of the respondents also revealed that, political backing is also ensured especially when dealing with other international NGOs, since there is understanding between the government and NGO. They easily obtain loans and grants from abroad which is their main source of income. From the findings, political influence has had an impact on the TACARE's activities of conserving natural resources.

4.4 Problems encountered by TACARE in implementation of strategies of conserving natural resources.

The finding revealed that TACARE encountered several problems in implementing strategies of conserving natural resources. Majority of the respondents (40%) acknowledged that TACARE faces a problem of self-sustainability. (fig.7)

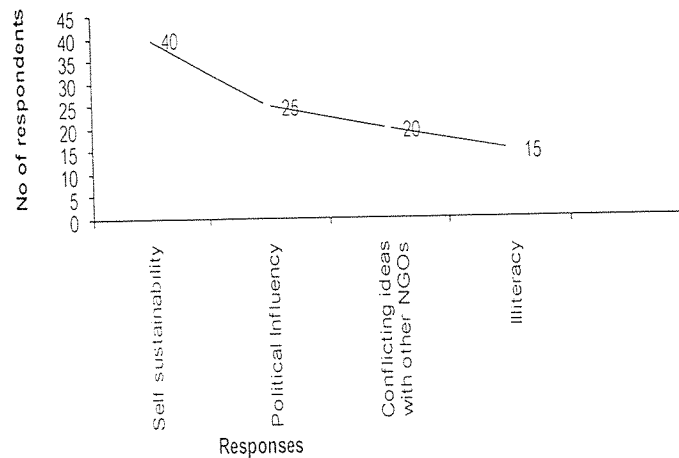


Figure 7: General problems facing TACARE in an attempt to carry out the strategies of conserving natural resources.

TACARE faces a problem of conflicting ideas with other NGOs because its programmes cur across sectors. This was indicated by 20% of the respondents. But 15% argued that there is a problem of technical capacity that could have been used to facilitate the smooth running of the organization because of illiteracy of the beneficiaries and extension field assistants. 25% of the respondents revealed that political influence has a problem on their activities since the government and politicians are threat because they are on the ground hence challenged and attack them in fear of loosing votes.

4.4.1 Inadequate resources and skilled manpower

TACARE is among the NGOs lacking skilled labour and capacity, including the capacity to articulate their mission and vision. The resources available for TACARE do not meet with the real needs of the organization. For example, according to the key informants TACARE receives 68% of its budget.

This agrees with the Brundtland report “Our Common Future” (1987) on the Sustainable Development as the development that meets the needs of the present without compromising the ability of the future generations to meet their own needs. TACARE is

trying to put in place strategies that maintain the regenerative capacity by ensuring that the harvesting rate does not exceed the regeneration rates and by avoiding excessive pollution. TACARE programmes have reduced threats to species by re-introduction and rehabilitation; emphasizing gender balance in all activities and adopting participatory approach to policy formulation, decision-making and implementation of development activities.

4.4.2 Political factors.

Table 11 shows that political factors influence TACARE's activities of conserving the natural resources. The first group of the respondents (75%) said that political factors interfere with TACARE's activities of conserving the natural resources while 25% argued that political factors do not interfere with its efforts of conservation.

Table 11: Political interferences on TACARE's activities

Responses	Frequency in number	Percentage
Yes	15	75
No	5	25
Total	20	100

Inadequate funding

TACARE obtains funds from USAID, JGI-US and UNICEF for running its activities of natural resource management. The directing manager for TACARE's argued that 100% of its funds are from external donors.

Table 12. Financial problems of donors that affects TACARE's activities.

Problems	Frequency in number (responses)	Percentage
Donors want to fulfill their own interests	7	35
Un expected withdrawal of donors	8	40
Competition for funds	5	25
Total	20	100

Funding by donors is associated with numerous problems (Table 12). Donors aim at fulfilling their own interests as revealed by 35% of the respondents. Failure of donor to achieve what they expect can easily lead to their unexpected withdrawal as stated by 40% of the respondents. Since NGOs are many, there is competition for the external funding from donors. This is a problem projects often face. Despite all these problems, TACARE tries to ensure that its activities are implemented as per schedules. Natural resources management has received attention from many donor agencies than any other sectors in Tanzania due to its importance to the rest of the economy. Donor agencies contributing financial and technical resources are: DFID; IUCN, GEF; WWF; FAO; WB; USAID; UNDP; UNEP, CARE, as well as Governments of Finland, Norway, Denmark, the Netherlands and Sweden. Since NGOs are many, and they are many sources of income being external or foreign assistance, with various governments and non – governmental organizations inclusive, others argued there are competitions for funds. However, donor assistance is associated with such problems. The donor assistance has enabled TACARE to sustain their activities directed towards natural resources conservation.

DISCUSSIONS

Activities done by TACARE in natural resource management

TACARE's activities are divided into five primary project areas: (i) Forestry and fisheries: tree nurseries, planting trees around villages, establishment of forest reserves protected by village bylaws and development of fish processing facilities; (ii) Agriculture: development and distribution of improved oil palm seedlings, cash crop promotion and training in agro forestry; (iii) Community development: Community run savings and credit programmes, village development funds and promotion of fuel saving stoves, (iv) Health: family planning, water and environmental sanitation and education of HIV/AIDS; and (v) Roots and Shoots: environmental and humanitarian education programme for the youth.

Natural resource conservation is one of the major poverty project activities, which tries to enhance local capacity and ability to protect their natural resources. These resources

include forests, land and water which are rich areas from which the local people gather foods, fuelwood and medicinal resources.

The aim of the activity is to supply the needs of the poor villagers, to upgrade their knowledge and to raise awareness of the villagers on sources of their livelihoods by to improving the conservation and management of the natural resources and their products improving their economy and income generation of the people in villages. This goes in line with Leach and Meams (1998) who argued that, the degradation of ecosystem is an environmental problem that diminishes the capacity of species to survive. This degradation occurs in different ways and its impact is manifested in reduction of the ecosystem richness, their biological biodiversity and of the goods and services they offer.

The degradation of ecosystems due to the exploitation of their resources, for short-term economic goals, has direct negative effects on social and economic welfare in the medium and longer terms. As long as ecosystem is not degraded it represents the source of wealth for society, hence the importance of keeping its integrity. One of the main causes contributing to the degradation of the ecosystems is deforestation for improper agricultural practices and inappropriate forest exploitation.

The World Bank (1998) asserts that, rampant poverty is both a cause and a result of environmental degradation. There is a significant relationship between poverty and environmental crisis particularly in Africa, where people mostly survive on natural resources (Myers, 1997). Over exploitation of such natural resources by the poor reduces productivity which results into economic and civil unrest. He reveals that poverty accelerates natural resources over exploitation because the poor with very limited time horizons and often less secure access to natural resources are not able, and often not willing, to invest in natural resource management.

The research data also revealed that TACARE's activities focus on community socio-economic development, including saving and credit schemes, promotion of use of fuel saving stores and credit schemes, and village development fund. This implies that

TACARE is mobilizing communities to build capital for economic generating activity so as to increase their income and develop simple technology which saves fuelwood. This agrees with Bawa and Gadgil (2003) who stated that an environmentally sustainable economy is one that satisfies current needs without jeopardizing the prospects of future generations.

The principles of sustainability are straight forward over the long term that soil erosion cannot exceed soil formation. Forest destruction cannot exceed forest regeneration, species extinction cannot exceed species evolution, fish catches cannot exceed the regenerative capacity of fisheries, and pollutants cannot exceed the capacity of the system to absorb them. The fact is that academicians focus more on the activities taken by NGOs to conserve the environment as well as the problems these organizations face in terms of their strategies. The attempts by scholars to isolate the role played by NGOs in environmental conservation have basically focused on the problems and possible solutions to natural resources depletion.

The findings indicate that TACARE's health activities focus on improving access to family planning, reproductive education and supplies. TACARE carries voluntary counseling services and family planning methods, aimed to control the population in the study area, due to the fact that with increasing population the demand for natural resource products also increase. This goes in line with the suggestion that the depletion of natural resources is caused by population pressure and growth, agricultural activities, unsustainable fishing practices and poverty. (IMF 1984).

In the Sub Saharan Africa, people depend more on environmental natural resources base for their survival, where two-thirds of the population is rural and their main source of income is obtained through agriculture. This also justifies why African states are ever experiencing land degradation, inaccessibility to safe water, deforestation and loss of biodiversity compounded by climatic variability as the cause of environmental crisis (World Bank, 1998).

The findings from the questionnaires indicate that TACARE's Shoots and Roots activities basically provide environmental education for the youth. Degradation of natural resources in developing countries is caused by poverty, population pressure and lack of environmental education (Andrew, 1998). The role of environmental education in natural resource management should be emphasized by the Government which is the pillar to bring strategic development to the community. Environmental education is very important to sustainable natural resource development. It builds a philosophy of caring for the environment, creates awareness on the proper/ wise utilization of the natural resources, develops skills and appreciation of our life that depends on the goods and services provided by the environment, and enhances social, economic, and environment as pillars of sustainable development.

The findings revealed that the activities done by TACARE are designed to address poverty, support attainment of sustainable livelihood in the villages around Lake Tanganyika and to arrest the rapid degradation of aquatic and terrestrial natural resources.

Strategies used by TACARE to conserve natural resources

The findings indicate that community participation, training and sectoral programming are the main strategies used by TACARE in conserving natural resources; the least strategies are political influence and NGOs networking.

The findings revealed that community participation is the main strategy used by TACARE. It has successfully achieved its goals of conserving natural resources through community participation. Involving the community in the implementation of project activities is good and effective. The findings agree with those stated by the World Bank (1998) that management seems to be conceived almost whole in the context of donor funded projects with a surprising lack of the consideration of community-led activities who planning and execution of natural resources management is driven by the community. There is historical evidence that rural communities had sophisticated systems of natural resources management which maintained biodiversity over thousands of years. In some areas such system still operate; the element of these system include strong linkages amongst members of the community; equitable patterns of resources access;

means of negotiating and controlling natural resources between and among groups; clearly defined territories, low-cost mechanism for lower cost resolution, support for community management institution wider social political and economic structures and the assignment of ownership for resources concerned.

This management systems have weakened gradually, first under colonial government and then as a result of population growth, nationalization of resources and commercialization of economy (Egutu, 1995). With declining government-administration capacity and ability to provide effective management of natural resources use, local management systems are currently beginning to re-assert in some areas.

The Vice-President's office in the government of Tanzania through economic development report (2005) acknowledges that public participation in natural resources management enhances the generation use and application of knowledge skills for environmental problem solving. It further recommended that, involving community in their constraints, opportunities and development of possible solutions to overcome such constraints makes head way in ensuring sustainable environmental conservation.

The study indicates that NGOs networking is a strategy used by TACARE in conserving natural resources. The NGOs networking helps the organization to overcome difficulties through sharing of information. This is in line with DENIVA (1999) a net work of NGOs enables members to remain autonomous and offers them opportunities for increased learning through member's exchange of information, views, and opinions in workshops, radio programs, newsletters and exchange visits. Over the past years such opportunities have increased hence, increasing member solidarity, confidence and friendship.

They have also enhanced members to understand why NGOs exist, what values they cherish and what they offer, that other social development actors cannot, through networking, they have sharpened understanding of how to engage governments through complementary, consultation and confrontation. Net working therefore, brought in desirable results and it is so significant in influencing TACARE activities of natural

resources management. However the network, does not fully involve openness due to competition among NGOs. The research therefore analyzed that, most NGOs net work to share information, plan activities and attain a sound response to political pressures and some for selfish reasons hence lack openness (Timberlake, 1991).

The finding indicate that NGOs networking is not strong, this concurs with Mullet and Yaffee (2007) that, integration of NGO efforts on natural resources conservation cannot be achieved by centralizing their efforts under an umbrella organization or through parliamentary designed cooperation but through networking and lobbying with the government, public and media.

Problems encountered by TACARE in implementation of strategies of conserving natural resources.

The study indicates that financial constraints are the main problem facing TACARE; other problems are inadequate resource and skilled manpower, political factors, conflicting ideas with other NGOs and illiteracy. The findings indicate that TACARE suffer from insufficient financial resources. This is inline with Bosco (2005) that among many NGOs, the major problem is not only insufficient funds but also lack of skills to plan and manage projects and present their activities to the public. Most NGOs have weak organizational structures, a characteristic that marks both individual NGOs and the entire environmental movement as a whole.

The study also showed that TACARE acknowledged donors such as USAID, JGI-US, UNICEF among others, that their major source of fund, which are vital in organizing workshops& some respondents particularly the field research assistants also acknowledged that, such funds are useful in the facilitation of training programs especially when training the extension research assistants and the beneficiaries or the local people. They also use money to buy vehicle and motorcycles so as to promote effectiveness and working atmosphere of the employees and others stakeholders.

Therefore, this agrees with Vaughn (2006) that, getting financial dependence is both more visible and more direct and immediate concern or both the growth of national NGO sector has been profoundly influenced by link. (Shivji, 2006) argued that, the perception of NGOs on their relationship with the government, recommended that government is beginning to understand NGOs on their contributions in natural resource management through community used natural resources management, taking more interest in our work, seeing where we can be beneficial to them, what our strengths and weaknesses are out and others fear us more some value our input, some exclude us however the government should provide funding and/or resources to NGOs including training, technical assistance and capacity building.

On the other hand, some revealed the problems associated with over depending on foreign sources of funds. The findings indicate that, donors sometimes want to fulfill their own interests, failure of donors to achieve what they expected, forces them to withdraw the support unexpectedly.

Since NGOs are many and their major sources of income are external, they sometimes face a problem of competition for funds and such problems affect their activities. This is inline with Mazmanian and Kraft (1997) argument that, NGO sector being profoundly influenced by external or donor funding link. The local government should opt formally or informally to help provide core services to the people.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

The study explored the role of NGOs in natural resources management, a case of Tanganyika Catchments Reforestation and Education in Kigoma District, Tanzania. The study examined activities, found out strategies and problems encountered by NGOs in conserving natural resources.

The study was conducted in four divisions in Kigoma district Tanzania. Two divisions were selected in urban and the other two divisions in rural areas. The study was descriptive and employed various methods such as observation, use of questionnaires, interviews and the secondary data collection to obtain the required information. The data were obtained from a sample of 220 local people and 35 key informants from local council and TACARE officials.

In order to find out activities carried out by TACARE, the study found that forestry, agriculture, community development, health and education for youths, are the sectors where activities are centered. Forestry activities ranked highest (Table 2) that included tree nurseries, planting trees and establishment of forest reserves. Agriculture activities included training in agro-forestry, cash crop promotion and distribution of improved seeds. Community development includes promotion of fuel saving stoves, financial savings and credit programmes and village development funds. Activities on health include family planning, water and environmental sanitation and education in HIV/AIDS, and conducting environmental and humanitarian education for the youth. TACARE offers innovative model which is community centre for natural resource management in the study area

Community Participation (Table 4) was the main strategy put in place to conserve natural resources. When the communities are involved in the implementation of the project activities they share ideas and get full recognition in and of ownership of the project. The

other strategies employed by TACARE are training, sectoral programming, networking, and adopting political agenda. The study found that TACARE have contributed effectively in natural resources management through their strategies, community participation ranking the highest. Since NGO effectively participate in environmental policy development and the environment decision making process, some of the issues should include promoting NGOs activities, drafting legislation on access to information, lobbying, institutionalizing relations with the government, training in the legal aspect of environmental protection, communicating with the government through the public and the media, delegating NGO representatives, solving conflicts, organizing joint NGO programmes for Environmental Day, building an environmental NGO network, among others.

Problems facing TACARE in conserving natural resources include conflicting ideas with other NGOs because their problems cut across sectors. They also face a problem of self-sustainability and dependence on foreign assistance to obtain money to run their activities.

There is a problem of technical capacity to facilitate the smooth running of the organization. The illiteracy especially of the beneficiaries and extension assistants is being overcome by carrying out training programmes. Political interference is also a problem that affects their effective operation on ground. They fear to challenge, this due to fear of losing votes.

5.2 Conclusions

Basing on the findings, the study concluded that TACARE's forestry activities are multifaceted that supported tree nursery and reforestation efforts to provide economic opportunity. Tree planting in and around village promotes conservation ethic as well as reforestation. Village managed forest reserves provide regulated long term means of conserving forest. The community aspects of TACARE focus on improving the standard of living of the people in the region of Lake Tanganyika, while promoting reforestation, curbing soil erosion and delivering conservation education to the community. The study

further concluded that TACARE offers innovative model which is community centered for natural resources management.

TACARE employed various strategies on conserving natural resources. That include community participation, training, sectoral programming, NGOs networking and political agenda. Community participation and training have helped TACARE to achieve its goals in implementing activities of conserving the natural resources. However, NGOs networking is not strengthened, though it offers NGOs opportunities for increased learning through members exchange information, views, opinions and experience. TACARE has therefore played an important role in natural resources management, poverty reduction and development in the study area.

There are several problems facing TACARE including financial constraints, inadequate resources such as skilled manpower, political interference, conflicting ideas with other NGOs, insufficient funding and lacking other resources such as skilled manpower.

5.3 Recommendations

There is urgent need to conserve natural resources for the benefits of the present and future generations. In the struggle to solve the problem of degrading natural resources, the following recommendations are proposed.

1. The major cause of degradation of natural resources is poverty, population pressure and inadequate environmental education. TACARE's activities have tried to touch in the above areas but with little success. Therefore, this study recommends that NGOs would be more active in the areas of research and technological design.
2. Considering strategies employed by TACARE when implementing the activities of conserving natural resources, the study recommends that NGOs orient their cooperation activities on the basic needs of the people, socially, economically and environmentally.

3. NGOs should try to work together on the most important common issues, that are crucial if NGOs are to effectively participate in environmental policy development and the environmental decision making process. These issues include promoting NGO activities, drafting legislation, channeling information on public participation, between the NGOs/ Local people and other stakeholderslobbying, institutionalizing relations with the government, training in the legal aspects of environmental protection, and communicating with the government.
4. Among many NGOs, the major problem is not only insufficient funding but also lack of skills to plan and manage their activities in a coordinated manner. There is therefore need on the part of government to provide resources to NGOs including training of technical assistance and funds since NGOs are agents of government work.
5. NGOs should not only heavily depend on external financial support but should devise means of getting money locally.

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APPENDICES

Appendix 1: Questionnaire

The questionnaire intends to examine the role of NGOs in natural resources in Kigoma district. The set of questions will have two parts. Section A will be research assistants of TACARE and Section B will be administered to the local council members of Kigoma district.

You are requested to answer all the questions as honestly as possible. It is not a test, your name is not required. All the information will be treated with the highest confidentiality and used only for the purpose of this study.

Please, read the instructions and answer accordingly.

Background information

Tick the appropriate Box.

- | | |
|--------------------|---------------------|
| 1. Sex | Male |
| | Female |
| 2. Age | Below 15 years |
| | 15 - 30 years |
| | Above 30 years |
| 3. Marital Status | Single |
| | Married |
| | Widowed |
| | Orphans |
| 4. Education | Primary |
| | Secondary |
| | Tertiary |
| | Other(specify)..... |
| 5. Occupation..... | |

Section A:

1. What strategies do you use in your effort of conserving natural resources?

2. What are the areas you cover in an attempt to conserve natural resources?

- 3 a) Do you involve local people in the conservation of natural resources? (Tick one)

Yes

No

- b) If yes, why do you encourage people to participate in natural resources conservation or what is the effectiveness of rural participation in natural resource conservation?

- 4 a) Do you train people in your efforts to conserve the natural resources? (Tick one)

Yes

No

- b) If yes, why do you train people to conserve natural resources?

- 5 a) Do political factors have influence on your capacity to conserve the natural Resources? (Tick one)

Yes

No

b) What is the impact of political influence on your capacity to conserve the environment?

6. Where do you obtain funds for running TACARE's programmes?

7. What are the central problems you face in attempting to conserve natural resources?

Section B:

1 a) Do you work hand in hand with TACARE in the conservation of natural resources? (tick one)

Yes

No

b) If yes, why do you participate in conservation of natural resources?

2 a) How does the organization (TACARE) help the local people to conserve natural resources in the area?

b) Why do you think TACARE train local people to conserve the natural resources?

Appendix ii: Interview guide

Section A

1. Title of the Officer
2. Name of the organization
3. Activities done by the organization
4. Name of the Officer

Section B

1. When did you join this NGO/Organisation?
2. What activities are done by NGOs?
3. What do you think are the importance of these activities?
4. Do you agree that there is degradation of natural resources?
5. What do you think could be the factors for the degradation of natural resources?
6. Do you agree that the refugees' influx have impact on the natural resources?
7. Discuss the historical trends of population and natural resources management?
8. To what extent do you think TACARE have contributed effectively to natural resources management?
9. What strategies NGOs/Organizations put in place to implement the activities of TACARE?
10. Which one do you practice and why?
11. Give any other information which you know about natural resources management.

Appendix III: Sample selection

Calculation for sample size

This was obtained by use of Sloven's formula as illustrated below:-

$n = N/[1 + Ne^2]$ where; n = sample size. N = population

1 = constant (95%), e = confidence interval and 2 = square.

Key informants

$$n = 15 / (1 + 15 * 95\%^2)$$

$$n = 15 / (1 + 15 * 0.05^2)$$

$$n = 15 / (1 + 15 * 0.0025)$$

$$n = 15 / (1 + 0.0375)$$

$$n = 15 / 1.0375$$

$$n = 14$$

Extension field staffs.

$$n = 20 / (1 + 20 * 95\%^2)$$

$$n = 20 / (1 + 20 * 0.05^2)$$

$$n = 20 / (1 + 20 * 0.0025)$$

$$n = 20 / (1 + 0.05)$$

$$n = 20 / 1.05$$

$$n = 19$$

Local community of Kigoma District

$$n = 220 / (1 + 220 * 95\%^2)$$

$$n = 220 / (1 + 220 * 0.05^2)$$

$$n = 220 / (1 + 220 * 0.0025)$$

$$n = 220 / (1 + 0.55)$$

$$n = 220 / 1.55$$

$$n = 141.93$$

$$n = 142$$

The stratified sample size therefore was obtained by adding together the totals as below:
 $14+19+142=175$ as the whole sample size.

However the youth below 18 years old they were also chosen because they normally take part in degradation of natural resources. The age above 30 were selected for historical information and indigenous knowledge in relation to NGOs roles in natural resources management.

Using the systematic list of sampling in selection of respondents.

For Kalinzi Division the population was 124 local people: sample needed 45:

$$n = \frac{124}{50} = 2.3$$

Therefore the sample was got by taking every 2nd case from the list

For Mahembe division the population was 248: sample needed was 54:

$$n = \frac{248}{54} = 4.3$$

The sample was got by taking every 4th member on list.

For Mwanga North. local people were 361. sample needed was 54

$$n = \frac{361}{54} = 6.6 - 7$$

Therefore the sample was got by taking every 7th case from the list

For Mwanga South the population of local people was 283

$$n = \frac{283}{54} = 5.1$$

Therefore the sample was got by taking every 5th case from the list.

Appendix IV: The list of Divisions in Kigoma District

No.	Name of Division	Selected	No. of villages in Division	Selected villages/Mitaa for study
1.	Ilagara		10	
2.	Kalinzi		7	5
3.	Mahembe		9	5
4.	Mugambo		11	
5.	Mwanga North		89	6
6.	Mwanga South		106	6
7.	Nguruka		13	
8.	Uvinza		7	
9.	Mwandiga		9	
	Total	4		22

GE300
K219
2008

