

**SUSTAINABLE DEVELOPMENT AND ENVIRONMENT:
AN INVESTIGATION ON THE ROLE OF THE ROMAN CATHOLIC CHURCH AND
INTER AID KENYA IN KIAMBOGO AREA, NAKURU DISTRICT**

BY:

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REQUIREMENTS FOR THE AWARD OF A DEGREE OF MASTER OF ARTS OF
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Declaration

This research project is my original work and has not been presented in any other University for academic purposes or any other research.

Signature.......... Date.....14/10/2006.....
(Mwathi Ernest . Ngigi)

This research project has been submitted for examination with our approval as the university's supervisors.

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Dedications

This research project is dedicated to my mother Esther Wangari who had been both the mother and the father in our family. She struggled hard as a peasant farmer to provide us with basic needs in the midst of environmental degradation in Kiambogo region.

Acknowledgements

The completion of this research project has been through efforts and contributions of various persons and institutions.

First I would like to acknowledge with great appreciation the University of Nairobi for awarding me scholarship that facilitated the completion of this research. I would also wish to acknowledge my supervisors; Dr. S.K Gitau and Dr. C. M Mwikamba for their valuable advice, constructive criticism and encouragement that made this research a reality.

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I would also wish to thank my mother Esther Wangari and my best friend Ann Wambui for their patience, love and encouragement expressed throughout the study.

Lastly, to all those who have assisted me in one way or another in realizing this research and whom this medium may not be sufficient to mention them by names.

To all I say thank you and God bless.

Abstract

The aim of this study is to highlight the relationship between the environment and sustainable development in Kiambogo area. This was meant to bridge the academic gap created by the previous studies in the same field that have inclined much to the causes and effects of environmental degradation, with little emphasis on the linkages between environment and sustainable development, especially where the church and NGOs are involved.

Findings for this study have been collected from both primary as well as secondary sources. Primary sources included questionnaires, interviews and observation methods. Secondary sources that form part of the bibliography were collected from library materials such as books, journals, Internet, reports, archives and periodicals.

This study explores the role played by the Roman Catholic Church and Inter Aid Kenya (NGO) in environmental rehabilitation in Kiambogo area. Their participation in development activities in this area has been seen to reflect and bring out the relationship between environment and sustainable development. It was also the objective of this study to investigate the causes and impact of environmental degradation in Kiambogo area and the role of Kiambogo community in conserving their immediate environment.

This study has shown that, environmental degradation in Kiambogo area is caused by human settlement, wild fires, lack of proper forest management, poor farming methods, laxity by law enforcers, over population and above all poverty. The effects of this degradation have been poor agricultural harvest, lack of water, adverse climatical changes and gross abject poverty.

These causes and effects of environmental degradation in Kiambogo area have revealed that, there is dialectical relationship between sustainable development and environment. Environment degradation increases poverty and poverty prevalence is the main cause of environmental degradation especially to the communities that heavily depend on their immediate environment for survival. 'Creative awareness' environmental education and agriculture have also been seen as part of this dialectical relationship.

The study suggests a number of ways that would facilitate sustainable development in communities whose way of life directly depend on environment.

First, the study has revealed that it is very difficult to establish a sustained environmental programme in poor communities who depend on their immediate environment for survival. Therefore, there is need to explore alternative sources of income and sources of energy to these communities so as to reduce the pressure exacted by these communities on their immediate environment in their effort to salvage a living. This includes possibilities of entrepreneurship, poultry farming, agro forestry, eco and cultural tourism. There is also need to explore use solar energy and biogas.

Secondly, churches and religious groups in the region should embark on what Obeng call 'creative awareness' environmental campaign. This will demand theologians in the area to sensitise the locals on the religious duties of mankind towards God created world. This would include emphasising that Kiambogo residents have a moral responsibility to care and protect their immediate environment. The campaign should be action oriented. It should bring on board, Government agencies, NGOs and CBOs, through a comprehensive environmental programmes that would put more stress on reforestation, aforestation, agro forestry and land reclamation. This way, communities will be able to salvage their destroyed environment as well as conserve the existing one.

Thirdly, Government agencies, NGOs and other environment stakeholders should apply community participatory methods in their development and environmental initiatives. This means incorporating community based organizations that are constituted by the local members and have first hand information on the problem affecting them. Bringing the community intended to be the beneficiary of the project on board would be very effective since the community would feel as being part and parcel of the solution to the problems affecting them. This project has identified the Small Christian community as a very viable target for this venture. They are

religious based and constituted by local residents with a mission to empower members spiritually, physically and socially.

Fourth, the government should set aside a percentage of C.D.F (Constituency Development Fund), in every constituency for environmental conservation programme. This can be achieved by making this fund available to C.B.O.s and women groups on the ground for tree planting and other environmental rehabilitation programmes.

In nutshell, the study showed that, poverty prevalence cannot be fought effectively without a sustained environment. On the other hand, effective environmental programme can only be achieved where poverty prevalence is low. Therefore, poverty and environmental degradation are intertwined.

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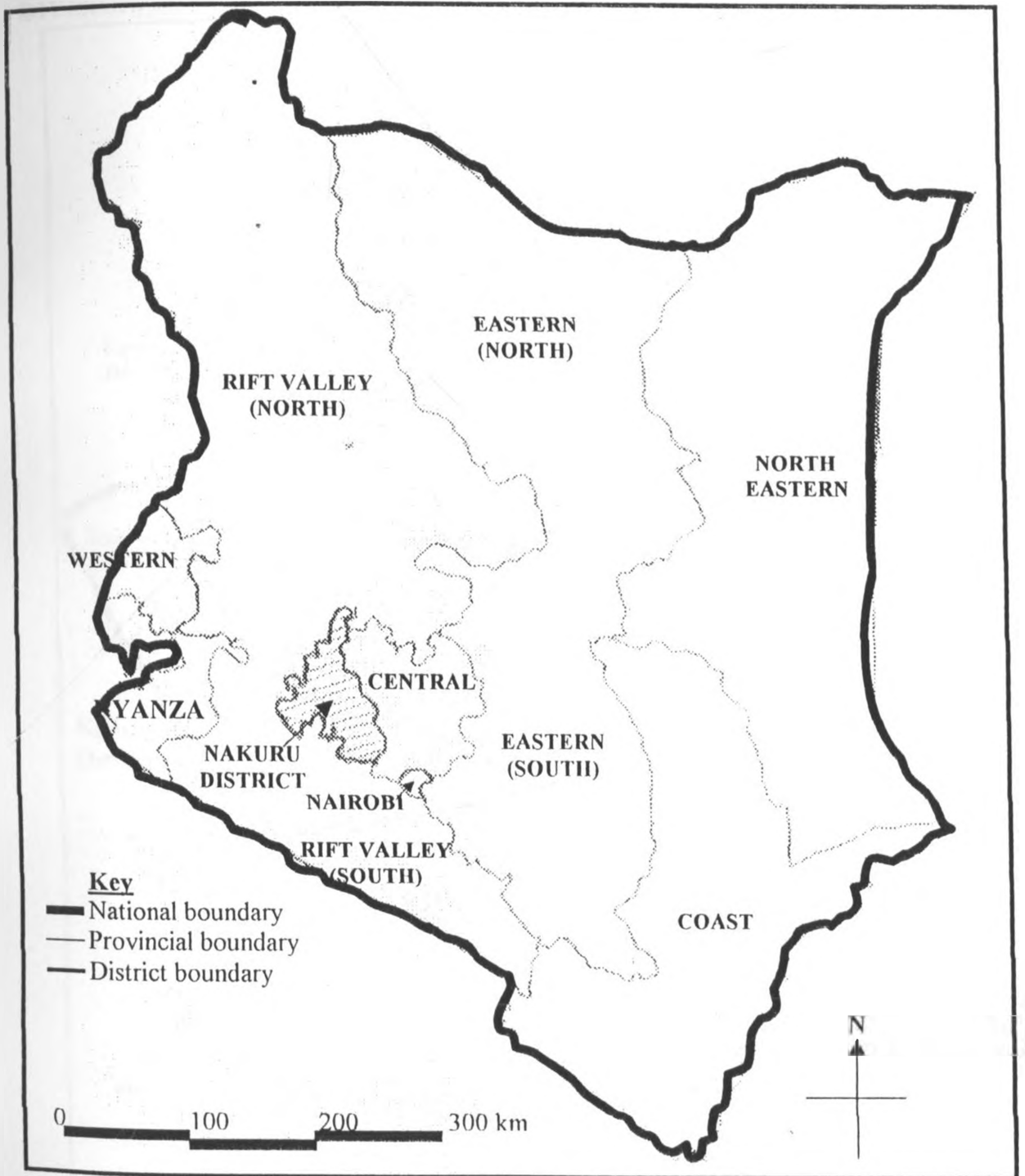
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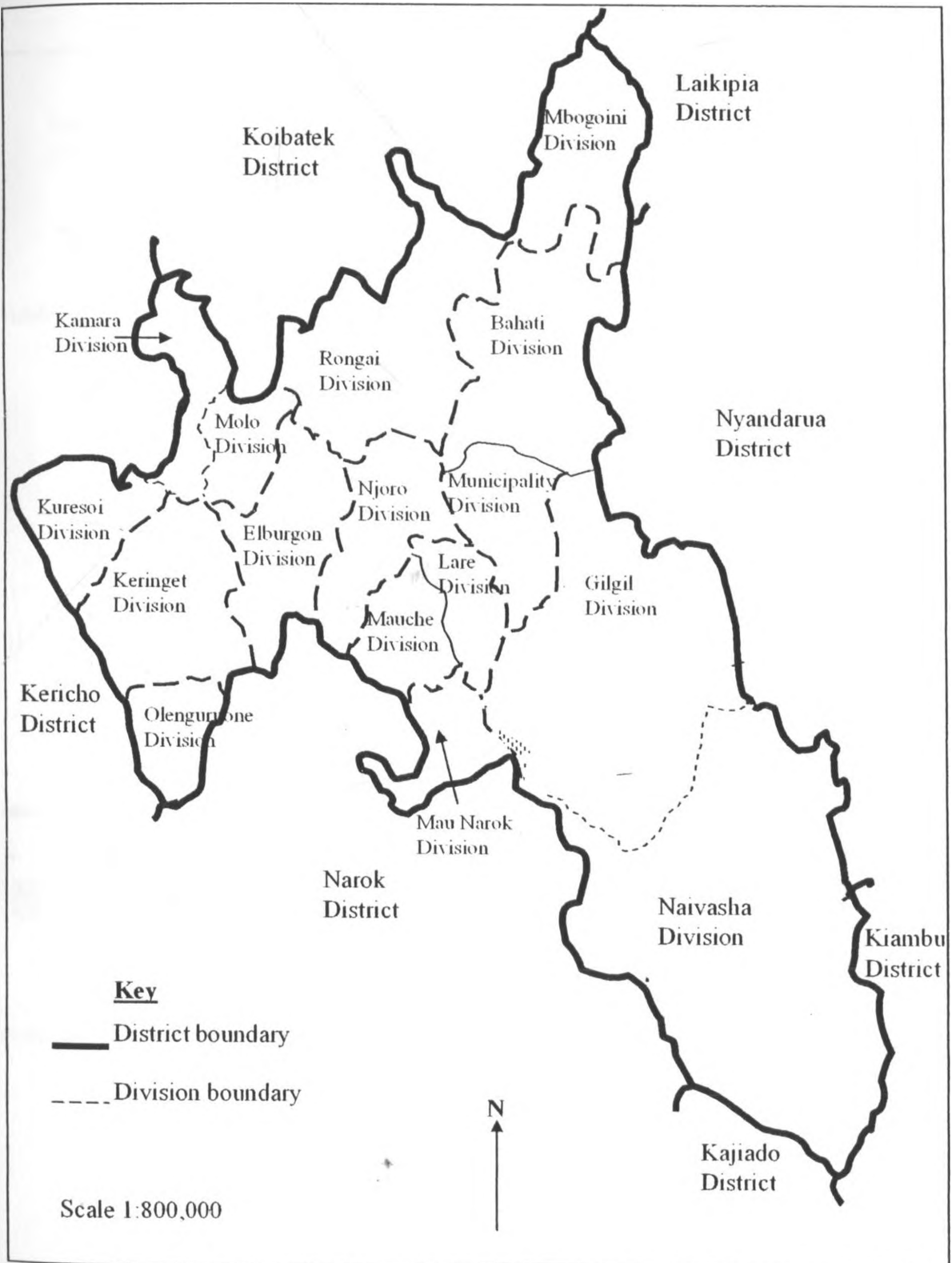
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MAP OF KENYA SHOWING THE POSITION AND LOCATION OF NAKURU DISTRICT.



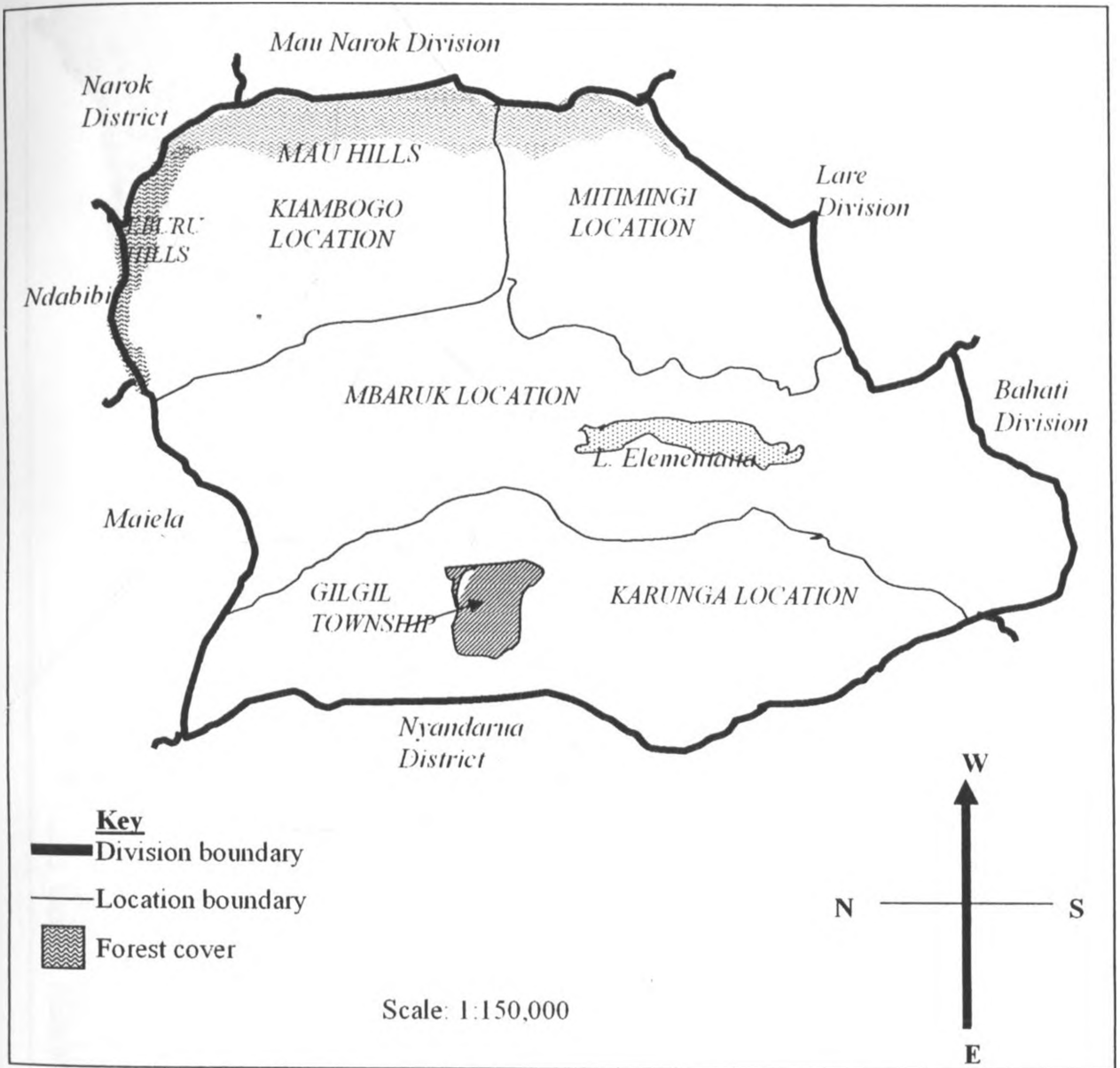
Source: Kenya Bureau of Statistics (2005)

MAP OF NAKURU DISTRICT SHOWING LOCATION AND POSITION OF GILGIL DIVISION.



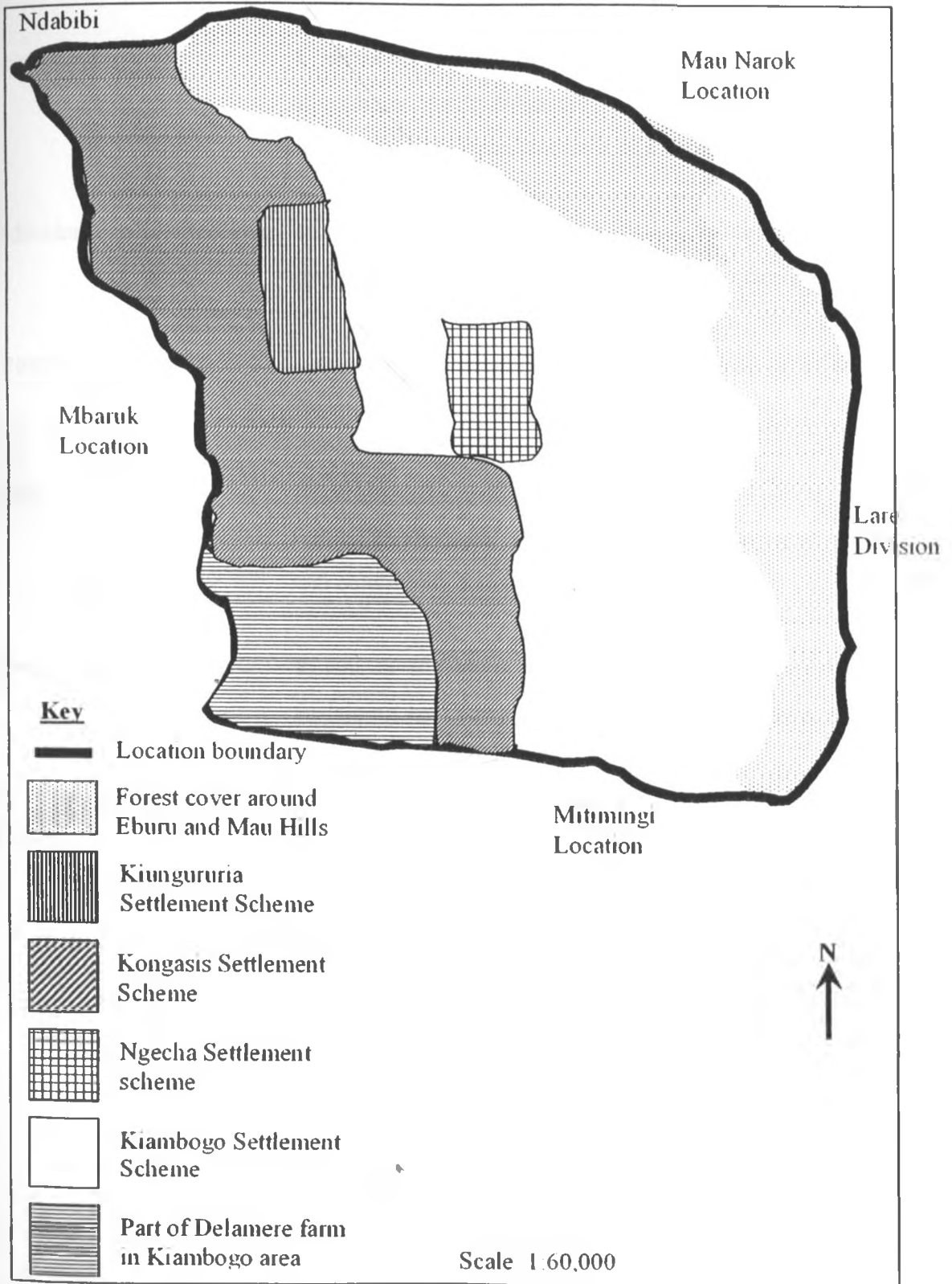
Source: Electoral Commission of Kenya Cartography Department (2002)

MAP OF GILGIL DIVISION SHOWING LOCATION AND POSITION OF KIAMBOGO REGION



Source: Education officer's office, Gilgil division

MAP OF KIAMBOGO REGION SHOWING VARIOUS SETTLEMENT SCHEMES



Source: Zonal Education Office Kiambogo region

Definition of Terms

- Environment:** A series of interlocking systems, the atmosphere, the pedo-lithosphere, the hydrosphere and biosphere which are all inter-related and interdependent parts of a complex whole.
- Individual capacity building:** This is the aspect of equipping a human being with favourable skills and techniques for survival in order to face challenges of life.
- Ecosystem:** This is a natural habitat whereby organisms exist together in a dependent and interdependent relationship.
- Religious Groups:** These are social groups and organizations that profess some kind of religious beliefs and they use it as point of reference in their social and community endeavours.
- Sustainable Development:** Refers to a pattern of economic development, which is self-sustaining by taking into account cultural, social, economic and environmental aspects.
- Poverty:** The state of destitution where by an individual survive with less than one U.S dollar per day

Abbreviations

A.D.C:	Agricultural Development Corporation
C.B.O:	Community Based Organisation
C.D.F	Constituency Development Fund
G.D.P:	Gross Domestic Product
G.N.P:	Gross National Product.
K.C.C:	Kenya Cooperative Creameries
K.G.G.C.U:	Kenya Grain Growers Cooperative Union
M.D.G:	Millennium Development Goal
N.G.O:	Non-Governmental Organization
P.R.S:	Poverty Reduction Strategy
P.B.K:	Pyrethrum Board of Kenya
U.N.E.P:	United Nations Environmental Programme
U.N.D.P:	United Nations Development Programme
U.N:	United Nations

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background to the problem

The world at present is faced with the danger of extinction of various fauna and flora species and historically some have already been lost.¹ All over the world, people have engaging in plundering the environmental resources in search of food and for satisfaction of human needs. Trees have been cut down to clear way for settlement, fuel supply, building materials and in some localities for production of natural paper. In all these human endeavours, mankind exploits the environment but fails to assess the impact of their activities towards the environment.

Human beings depend on the environment for their survival: environment provides human beings with medium for self-identification, food, source of social-economic development and habitat. However, the paradox of this revelation is that, human beings are endangering their life and entire nature by continued plunder of environmental resources². This realization, made the Stockholm declaration put human beings as the caretaker of their environment. In this convention, it was agreed that safeguarding the natural resources is protecting human basic rights³.

World charter for nature passed that, human beings are part and parcel of nature and their life depends on uninterrupted functioning of natural system⁴. In this line of argument,

protecting nature is protecting human rights; the right to life, food and freedom, thus “nature’s right are human rights”.

During the United Nations Conference on Environment and Development, which has become to be known as Earth Summit held in Rio de Janeiro, Brazil on June 1992, it dawned to the world that no matter what immediate gain human beings get from the use of environment, there are future implications in terms of economic and social cost and these gains should be weighed against these costs⁵. The truth is that, when environment is destroyed, human beings become incapacitated and unable to sustain themselves in any way.

Johannesburg Summit on Sustainable development (2002) discovered that, failure to incorporate the environmental management in development agenda cripples the very essence of development. Economic development initiatives cannot be sustainable without sustained environment.

The Johannesburg Summit agreed that, sustainable development is made up of three pillars – economic, social and environment. These pillars are implicitly the Millennium Development Goals-7 (MDGs) agendas. The ability to sustain environment is vital key to reaching the other MDGs goals on poverty, health and gender equality. The concept of sustainable development must be understood in terms of human needs, rights and responsibility towards the environment.⁶ The climatic changes in Africa and the rest of

the world is a clear reminder of the fact that environmental degradation cannot be ignored in the global agenda of achieving MDGs.

The most disturbing aspect is that the poor people who tend to be most dependent on environment are also the most vulnerable to environmental degradation. Paradoxically, they are the greatest destroyers of environment in their effort to survive. It should be noted that, majority of these poor people are found in the least and developing countries. A true and real sustainable development therefore, can only occur where the poverty level is reduced and environment is sustained.

Kenya attained its independence on the platform of agricultural prosperity, by then there was general belief that our country could only succeed through agriculture. This was so because we inherited a country endowed with vast natural resources, ranging from fertile land and soil, vast indigenous forests cover that acted as water catchment areas and a hard working population.

The first president of Kenya, Mzee Jomo Kenyatta coined the famous slogan '*Uhuru na Kazi*' (Freedom and Work). The idea was to encourage people to go back in the rural areas and occupy themselves with farming activities, which the then political elites believed was the only way to eradicate poverty, diseases and ignorance. Agriculture was considered as the backbone of our Kenyan economy.* Government directed much funds in agricultural sector, farmers association were formed and farm inputs such as fertilizer

* Today tourism is largest foreign earner followed by foreign remittance by Kenyans living abroad and agriculture occupying the third place.

and seeds were made available by the government. Moreover government sponsored agricultural training and induction courses for farmers. Many people went to their respective rural areas and were given land in the virgin forest for settlement and started farming. Initially things were very good as coffee, tea, cotton, sugar, pyrethrum continued to feature prominently in the country's Gross Domestic Product (G.D.P) analysis contributing over 40% of Gross Net Product (G.N.P).

Kenya now witnesses the deterioration of climate and decline in agricultural production. The once vibrant agricultural sector is now faced with dormant institutions, the likes of Kenya Grain Growers Cooperative Union (K.G.G.C.U), Kenya Cooperative Creameries (K.C.C) and Pyrethrum Board of Kenya (P.B.K). Their role had become inactive in many parts of our country due to lack of agricultural produce. This lack of produce is attributed to lack of enough rains and exhausted soil. Agricultural malpractices that interfere with ecosystem, like cultivating along the riverbanks, water catchment areas, use of chemicals, which affect the productive capacity of the soil and indiscriminate clearing of forests had been blamed for drastic drop of agricultural output in Kenya. This change of fortune impacted negatively on the local farmers who depended on the agricultural activities for their livelihood. The prevalence of abject poverty is what faces the majority of rural Kenyans condemning them into a life of misery and suffering.

In 1980 the government of Kenya commissioned a team of experts, to look at the relationship between environment and economic development. The group came up with findings that indicated that economic development is directly linked with environmental

condition in a given area. This is more pronounced where the local community directly depends on the environmental resources for their survival⁷. Since then, the war against environmental degradation has never ceased. In the year 2004, a Kenyan, politician, an activist and a Professor, Wangari Maathai was recognized by the Norwegian Nobel Peace Foundation for her efforts in environmental conservation against the unfavourable political environment⁸.

To show its commitment in environmental conservation, the Kenyan government draft constitution that was rejected in November 2005 referendum had a whole chapter dedicated to environmental management. The move to include this chapter was well received by all Kenyans. It showed that, the government is geared towards taking full responsibility in the fight against environmental degradation⁹.

1.2 Statement of the problem

The massive clearing of forest cover in Kiambogo location for the past two decades had led to adverse climatical conditions of scanty rainfall and rising temperatures. This has had negative effects on agricultural production in the area reaching critical levels of complete crop failure and constant drought.

Continued deforestation has condemned Kiambogo residents to a life of misery and abject poverty. The recent poverty survey carried by Ministry of Planning and National Development, ranked Naivasha constituency where Kiambogo is situated, as number thirty two (32) out of the two hundred and ten constituencies (210). The survey also

showed that there is over 39% of population living below poverty line.¹⁰ However, Kiambogo residents believe that there is much poverty than indicated by the survey. The government of Kenya at times has been forced to step in to provide relief food to the starving residents of Kiambogo.

Why is it that Kiambogo once a fertile region is presently experiencing droughts and constant food shortages? Why is it that Kiambogo residents who were previously harvesting more food crops than they needed are presently relying on relief food? Why is it that there so much poverty in the region? What went wrong? The answer to these questions is what this study was set to investigate.

1.3. Objectives of the study

This study set out to investigate the following objectives: -

1. The relationship between environment and sustainable development.
2. The causes and the impacts of environmental degradation in Kiambogo area.
3. The role of religious based initiatives particularly that of Roman Catholic Church and Inter Aid Kenya in environmental conservation awareness in Kiambogo area.
4. The role of Kiambogo community in conserving their immediate environment.

1.4. Justification for the study

Much study has not been done to relate Church and Non-Governmental Organisation's (NGO) efforts in the field of sustainable development and environmental conservation. Therefore, this study targeted the relationships between economic development initiatives

of churches and NGOs and environmental conservation. This will help along way in redefining the efforts of concerned groups in Kiambogo area for effective developmental initiatives.

In addition, this study intended to create awareness to the Kiambogo residents on the importance of environment by highlighting the role of religious groups in environmental conservation advocacy. It will investigate the possibility of turning religious centres such as shrines and churches to ‘creation awareness centres’ where residents will be enlightened on their moral responsibility towards environment.

Moreover, the findings from this study were to be made available to relevant civil groups fighting poverty in Kiambogo area so as to effectively implement their economic programs by bringing to the light the environmental dimension of poverty.

Lastly, the study was set out as a challenge to the residents, organizations and groups who are fighting poverty in Kiambogo region to use environmental rehabilitation as the primary steps towards improving economic conditions of Kiambogo residents.

1.5. Literature review

The literature reviewed in this study emanated from various studies and works of scholars committed to environmental conservation and its relationship to social life of communities.

According to Obeng, Churches must become 'creation awareness centres'. He sees Clergies as being in a prime position to influence millions of people who go to church on Sundays to acquire knowledge on how to preserve and protect their immediate environment¹¹.

Obeng propositions are valid. However, what is needed in Kiambogo area is more than preservation of environment. Environment in Kiambogo area have been degraded through clearance of forest. Therefore, there is a need to educate the Kiambogo residents on how to rehabilitate their already destroyed environment through religious based advocacy.

Gitau observes that, environmental conservation is not a reserve of certain discipline. Rather it is a multi pronged issue that needs a multifaceted approach. To him, there is religious dimension in environmental conservation. African religiosity and Christianity have almost the same religious principles which if explored can be very useful in environmental conservation. The concept of sacredness played a major role in conserving environment among Maasai and Kikuyu communities in Kenya. If extended to other communities, this can be very useful as a tool to fight the ongoing environmental degradation¹².

Gitau talks of multifaceted approach in addressing environmental crisis. However he only limit his expositions on Kikuyu and Maasai cultural traditional values and their

relationship with Christian's faith as far as environment is concerned. He does not explore other disciplines such as economics and sustainable development, which forms the core subject of this project.

Beisner presents poverty as a natural condition of mankind and the issue is not how one becomes poor but how one becomes rich. He presents the developed countries characteristic of prosperity as a result of working harder and smarter. In his exposition, working smarter is a situation of using the natural resources with the principal of stewardship. The principal of stewardship puts human beings accountable to their actions on the world, which belong to God alone. Are Kiambogo people working smarter and harder? Are they using natural resources responsibly? The answer to these questions is what this study want to explore.

Beisner, sees poverty and suffering currently experienced in the world as self-caused. Many people lack the knowledge of how best to utilize the God given resources thus engaging on destructive use of resources thus inviting poverty and suffering. For him, people can overcome their poverty but they must first overcome what is causing this poverty.¹³

It is true that third world countries need to work hard and smarter as Beiner argues. However, he fails to highlights the way forward in which the third world countries ought to take in order to overcome poverty and other sufferings.

According to Profesor Wangari Maathai, destruction of environment and particularly forests had caused a lot of suffering to the poor communities in Kenya especially women. These sufferings include lack of fuel, building materials, pasture/fodder and water. This, she argued incapacitate communities' ability to meet their daily basic needs. In her efforts that won her the Nobel peace prize, she organised women into groups in which she helped them to plant trees. By the year 2005, the women groups had planted thirty (30) million trees that provided them with food (avocado, mango), building materials (pine, cypress, and eucalyptus), income to support their families in paying school fees and other needs. Tree planting also created employment and helped improve the local soils and watersheds and above all, the trees were a source of fuel.¹⁴

Tabitha Kanogo, places women and environment in African history. According to her, women, through history have been closely linked with environment. This is because of her role as an African woman, which included fetching water, firewood, wild berries, cultivating fields, and hunting for small wild animals¹⁵ These roles put her directly in contact with the environment. She argues that women in pre-colonial era possessed intricate sound knowledge to manage their environment competently. Within their defined rights of access and utilization of resources particularly that of land, they managed to maintain a workable balance between sustenance from the land and allowing for its regeneration, neither grazing nor cultivation was haphazard. Soil types, crops

suitability and climate regions were carefully balanced for maximum production. They never forced their soil to produce anything unsuitable on it¹⁶.

The colonial period brought drastic social changes when women were confined to native reserves and boundaries were introduced on their land. Increase in population, haphazard cultivation of slopes and imposition of foreign cash crops considered as man's crop continued to devastate the environment. This has been attributed as the root cause of persistent poverty and food insecurity among rural women and their families in many countries.

Empowering women has been seen as the key in enhancing the status of rural women in achieving food security, poverty alleviation and sustainable development. This involves availing information and awareness to women on how to effectively manage the environment¹⁷.

Kabugumila concurs that; the hardest hit segment of the population by environmental degradation is women. This is because they are directly linked to environment as life-givers¹⁸. Their roles as housewives in African societies directly depend on the condition of their immediate environment. Women are responsible for production of food, collecting firewood and fetching water. As a result of these responsibilities, African women are more active in rehabilitating environment than men. Women engagement in environmental conservation measures among them; rain water harvesting, tree planting, use of energy-saving stoves and modern housing clearly explain this fact¹⁹.

Professor Wangari Maathai, Kanogo and Kabugumila raise important issues as far as environmental management is concerned. The hardest hit segment of population in Africa are women. However, we cannot ignore the role of men in environmental conservation initiatives. They are part and parcel of the problems being experience in our society. Therefore, there is need to bring everyone on board in order to positively manage our environment.

A United Nations (UN) report identified conversion of forest into cropland and pasture as a major cause of environmental degradation. Forest encroachments for settlement and meeting needs of subsistence farmers have caused major deforestation. The report found out that the growing demand for food as a result of increase in population pressure, directly conflict with international resolution to conserve environment. The report found out that, human beings resort to the usage of resources to meet their urgent needs. Approximately 70% of the forests in Africa have been cleared for this purpose alone, 30% in Latin America and 50% in Asia²⁰.

The effects of the above human activities on the environment have been; imbalance of ecosystem thus loss of biodiversity, watershed degradation and climate changes²¹ These have long-term effects in the retardation of the economic development and general effects on the social fabric of a community. This is so especially when a community depend on the environment to survive. Famlnes and drought experienced in parts of the world today have been attributed to human interference with the environment.

According to United Nations Environmental Programme's (UNEP) report on world resources, the world population is projected to increase reaching the eight (8) billion mark by the year 2025²². This increase in population will definitely put a lot of pressure on the environment, as there will be increased need for settlement, food and the related increase in pollution. There is no doubt that these increases in population will imply further stretching of the environmental resources. The world governments are therefore faced with a big challenge in formulating policies that will provide a framework of production and protection of environment for sustainability. In order to achieve this, the implementation of population growth rate control programmes will be inevitable²³.

The causes, impacts and suggestions on how to arrest environmental degradation highlighted by the above reports are worthwhile. However, the reports fail to suggest specific solution to environmental degradation that is applicable to local communities especially in Kiambogo area.

Government of Kenya, United Nations Environmental Programme and United Nations Development programme commissioned a number of researches in areas of environment and sustainable development. The findings from these researches showed that there is a dialectical relationship between environment and economic development.

A report by GOK/UNEP/UNDP identified that; there are considerably negative consequences that might otherwise arise if the environmental dimension is ignored in

economic planning. This calls for putting in place a mechanism of measuring the cost value of environmental impact²⁴. The economic policy should include the reduction of pollution, soil erosion and depletion of resources. This is a big challenge since it requires big cost in resource allocation.

Depletion of the forest, mining, soil erosion and destruction of wildlife for short-term private gains would have negative productive consequences not for some remote generation but to the immediate future²⁵. Environmental degradation have devastating effects to low-income earners such as; pastoralists, small-scale farmers, and landless rural folks. The paradox is that, the same groups that benefit directly from the environment is the same ones busy destroying the environment. Therefore urgent policy initiatives need to be undertaken to curb the activities involved by these groups, which give rise to a number of environmental problems. The aim should be to help these vulnerable groups on the issues like overgrazing, overstocking, over use of land, over cultivation and encroachment in forest²⁶.

Steele, argues that, characteristics of many economic development policies in Africa are not formulated to benefit the poor. Growth is pro-poor as long as the poor benefit from the growth. A growth strategy deliberately targeting the poor is needed. Therefore, low-income growth is greater than overall growth. Majority of the poor depend directly or indirectly on natural resources that provide a safety net that prevents them from becoming poorer - but this is not the same as durably raising the poor above the poverty line. Indeed it has been argued that in the long run this type of dependence can leave the

poor in a particularly dangerous poverty trap. The economic agenda that take into consideration the environmental dimension is sufficient for an economic growth that can sustain itself and lift the poor above the poverty line²⁷.

A study carried out by Istenheuer in Ghana on the Poverty Reduction Strategy (PRS), recommended the development of specific policies that will help subsistence farmers improve soil quality and reduce exposure to hazards. According to this report, the overall objectives of the medium-term macro-economic framework should include increased government expenditure on natural resource conservation, sustainable development initiatives and enhancement of degraded environment to support agricultural production. Small-scale business development proposals that should provide incentives for community-based initiatives to manage natural resources, such as agro-forestry, wetland conservation and eco-tourism should be encouraged²⁸.

Comin, concurs that the success of poverty reduction policy depends on the proper management of the ecosystem. Poor people and the ecosystems where they live should be seen as part of the solution and not as part of the problem. The environmental policy that targets the sustainability of economic growth should aim at what people are actually able to be and to do (ends) rather than simply what resources (means) they have available to promote their well-being.²⁹

Moreover, Cheche and Howlett emphasis the need to integrate environmental factor in the national economic agenda in order to sustain poverty reduction and economic growth

in Africa. This is because majority of Africans especially in East Africa depend on the environment and its natural resources for their livelihood. The use of the environment and natural resources accounts for 66% of GDP in Africa. They also noted the effect of environmental degradation to health. Global warming would alter epidemiological patterns resulting in increase in vector borne diseases and emergency of more virulent tropical diseases. The link between environment and health shows that addressing the challenges in both areas, call for global partnership where everyone becomes part of the solution rather than part of the problem³⁰.

These reports highlight the need to develop valid economic as well as social programmes that will target the poor. However, they only present this in theoretical terms. There is need to turn theories suggested by these reports into action. Linking theory and practice in environmental management programmes, have been a constant elusive ingredients in most of developmental initiatives in developing counties.

The thrust of this project is therefore to analyse the link between environment and sustainable development in Kiambogo area. It intends to link theory and practice by looking at the situational analysis of this links in developmental trends of Kiambogo area. Consequently, the study intends to highlight the importance of environmental conservation as a tool of fighting poverty particularly in Kiambogo area.

1.6. Conceptual framework

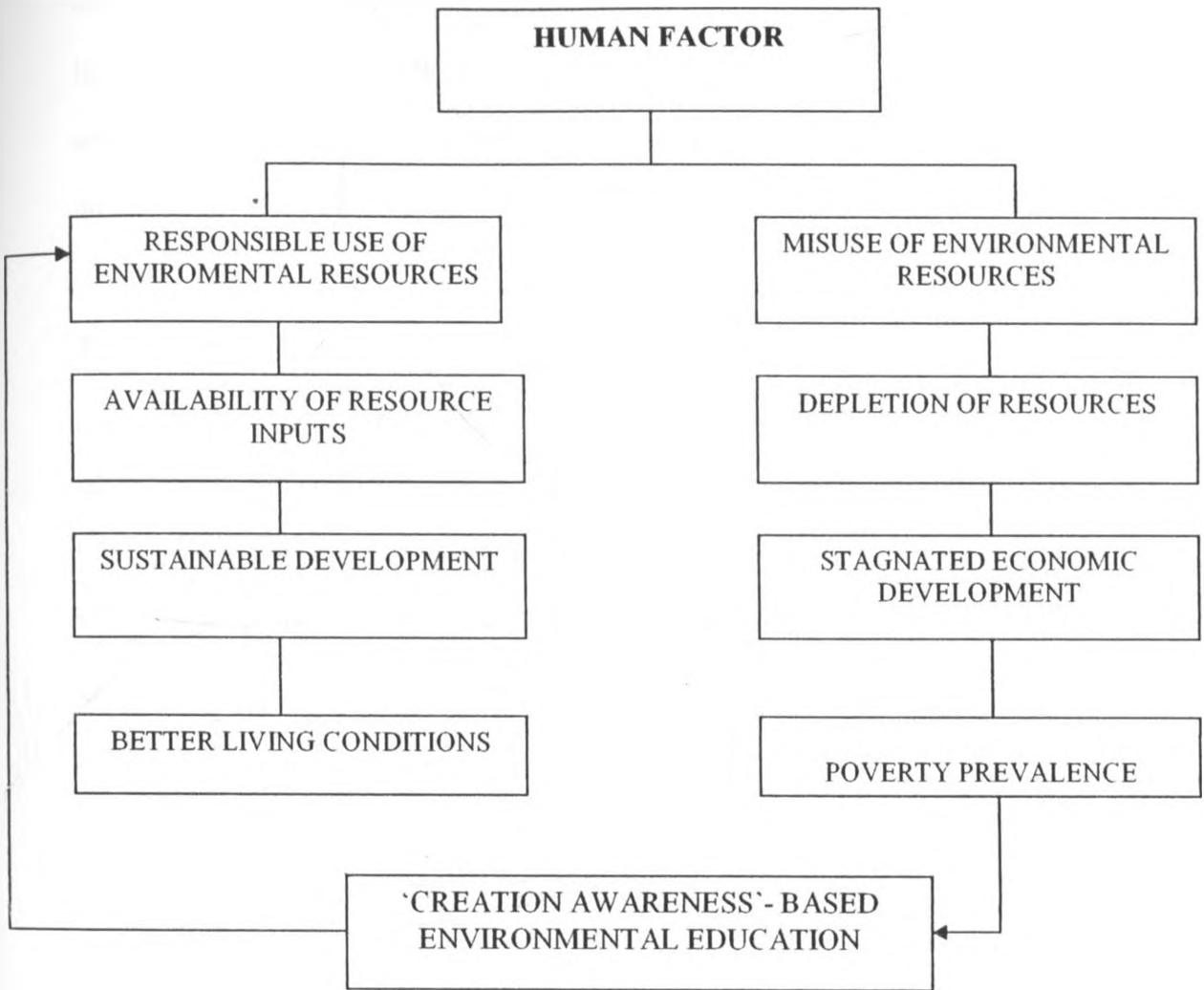


Fig 1: The study conceptual framework

This study revolves around the relationship between environment and sustainable economic development. It argues that environmental resources play a major role in economic development of a community as they act as inputs of economic development.

Needless to say, human beings play a critical role in ensuring the availability or extinction of these resources. Misuse and plunder of environmental resources means that less and less is available. This in turn would stagnate economic development. On the other hand, if they use resources responsibly, then there will be sustained existence of these natural resources for sustained economic development.

There is need to instil moral and ethical values to the people concerned. This is only possible if, Christians and African traditional religious leaders take the initiative to educate their followers on the importance of conserving their immediate environment through what Qbeng calls “creation awareness” environmental education. This awareness will involve among other things enlightening the residents on the role of human beings in God’s created world.

Instilling moral responsibility to the Kiambogo residents, will lead to a change of attitude. The local residents will stop viewing nature as an object of exploitation instead; they will treat it with respect and kindness. This will turn around the environmental situation in Kiambogo area from the current state of destruction to a prosperous region with well-managed environment.

1.7. Research methodology

1.7.1. Design and locale of the study

1.7.1.1. Design

This study is a field investigation on the role played by The Roman Catholic Church and Inter Aid Kenya in sustainable development and environmental rehabilitation in Kiambogo region. It is a field study since it has made a situational social analysis to the role of The Roman Catholic Church and Inter Aid Kenya in sustainable development and environmental rehabilitation in Kiambogo area.

1.7.1.2. Locale of the Study

The study was carried out in Kiambogo region, which is a location in administrative terms that incorporate four main settlement schemes namely; Ngecha, Kiambogo, Kongasis, and Kiungururia. Kiambogo is located in Gilgil division, Nakuru district in Rift Valley province.

This area was selected because it reflects the social inquiry this study intended to carry out. The area was once a forest later on various settlement schemes were introduced. The first was Ngecha settlement scheme, followed by Kiambogo, Kiungururia, and Kongasis. Each settlement scheme was allocated virgin forest, which they cleared for settlement and continued to plunder the non-allocated parts for food, fuel, and building materials. This trend led to low agricultural production in the area, subjecting Kiambogo residents to

abject poverty. Therefore, this area was a prime study locale to investigate the impact of environmental degradation to economic development.

1.7.2. Target population and sample selection

1.7.2.1. Population Description

The study targeted the people in Kiambogo location. The Kiambogo population is made up of Kalenjin, Kikuyu, Maasai, Kamba, and very few Luhya ethnic groups. It is composed of Christians and very few Muslims. The majority are farmers with few professionals comprising of teachers, administrators, agriculture officers, politicians and social workers that also engage in farming.

1.7.2.2. Sample Strategy

This section presents the various sampling techniques that were employed during the actual research.

Random sampling

A stratified sampling technique was employed. The identified clusters consisted of those residents living near the remaining forest and those living far away from the forest. A sample of fifty (50) respondents was picked, twenty five (25) drawn from each of two clustered research locales. Out of the twenty five (25) selected from each locale, five (5) were in teaching profession, ten (10) were farmers; the rest were religious adherents.

Fifty (50) respondents was an ideal sample population since the area is not very large, it is approximately 136km². The stratified sampling was used to ensure that the study area and population was thoroughly covered for an accurate representation of the situation in Kiambogo area.

1.7.3. Data collection instruments and procedures

A number of data collection instruments were employed, which was tested to affirm their validity before actual use and the effective instruments were selected and eventually used.

The instruments used by the study included: -

a) Questionnaire

The questionnaire was selected to be used to gather information from the respondents who were able to read and write. A set of questions that were easy to understand were formulated about the study.

Fifty (50) questionnaires were dispatched. Due to the size of the area, three-errand assistants were employed to randomly dispatch the questionnaires to respondents. Later, their services were recalled to collect the questionnaires. Every effort was made to make sure that there was stratification in the distribution of questionnaires.

b) Questionnaire - Interview method

At some instances, the study combined both interview and questionnaire methods to gather information from respondents. Specifically, this method was used to guide key - informants through interviews in order to collect in-depth information from government officers, councillors and professionals in the area. A set of questions were prepared and used to interview respondents. The method was used in young respondents as well as those who could not read and write to fill their questionnaires in order to get uniform and rapport across the population.

The responses received through these methods were assessed and summarized; the irrelevant answers were discarded and the relevant ones picked for analysis.

c) Observation method

Another key instrument of data collection was observation. The researcher participated in various social activities and in some instances could retreat to record his observations. Observation was employed especially to gather information about the factors that made Kiambogo residents destroy environment. It was also used to identify the extent of destruction of forests and subsequent effects on residents such as poverty and non-verbal data.

1.7.4. Data analysis

Data analysis involved both descriptive and social analysis. Data was analysed using both quantitative and qualitative analysis. The data collected was organised into tables with respect to the study objectives before tallying. The tallied figures were added before being converted to percentages using Microsoft Excel office program.

1.7.5. Presentation

The analysed data is presented using simple tables and charts. The tables and charts were interpreted so as to relate the information they depict and what it means to the human society and Kiambogo community in particular.

1.7.6 Scope and Limitations of the Study.

This study was an inquiry into the relationship between sustainable development and environment and the role of Roman Catholic Church and Inter Aid Kenya in Kiambogo region, Nakuru District.

A number of challenges were encountered during this study;-

First, there time of 15 weeks allocated to carry out this study was too short thus limiting the study area to Kiambogo region only which is a location in administrative terms in Nakuru district. Allocation of enough time would ensure larger area is covered which means more inferences would have been made about the topic.

Secondly, there was problem of insufficient fund and the researcher had to supplement additional finance to accomplish the project. Therefore, this study recommend an increase in the research fund in order to ease the burden of researchers who would wish to undertake this kind of research in future.

Another problem encountered was non-responsiveness from some of the questionnaire respondents during data collection. To counter this problem, the study issued excess questionnaires so as to make sure that the required sample size is achieved.

Lastly, the study involved touring forest area, interacting with charcoal burners and visiting Delamere farms. During these activities, the researcher had to cope with imminent danger of wild animals, suspicion from charcoal burners and corrupt law enforcers. At times arrest and reality of being hurt was imminent. To overcome these hurdles the researcher had to use high interpersonal skills in dealing with these segment of respondents in order to solicit needed information for the study.

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CHAPTER TWO

2.0 HISTORICAL BACKGROUND OF KIAMBOGO AREA

2.1 Introduction

This chapter is an attempt to put Kiambogo region in historical perspective. It looks at the location, size and demographical characteristic of Kiambogo region. It intends to show how the human activities in Kiambogo region have caused environmental degradation. It also intends to show the various challenges Kiambogo residents are experiencing in the face of environmental degradation. It depicts their despair, fears and hope as they struggle to live another day. The continued wanton destruction of the immediate environment has negatively affected agricultural production, subjecting Kiambogo residents to a life of misery and suffering.

2.2. Location, size and demography of Kiambogo area

Kiambogo region lies on a 136km² piece of land with a population of 23,016 according to 1999 National population census. It is located in Gilgil Division, Nakuru District, Rift Valley Province and form part of Mau complex, Southern part of Nakuru District.

The name Kiambogo is derived from Kikuyu vernacular meaning the area inhabited with many buffaloes. Initially the area was full of forest and thicket of bushes inhabited with thousands and thousands of wild animals. The majority of these animals were buffaloes, which used to roam freely in the area and gave the residents a hard time by invading farms destroying crops and sometimes killing human beings.



Plate 1. Part of Eburu Hills forest showing how Kiambogo area used to look like before destruction of forest cover. Note the evergreen thicket of bushes.
(*Source: Author*)

However this is no longer the case today, there is hardly any buffalo in Kiambogo area after large scale settlement and cultivation of forest land, buffaloes have retreated to the remaining Delamere farm and Lake Nakuru National Park.

2.3 Patterns of settlements in Kiambogo area

Kiambogo region was once in 1960s and 70s divided between Agricultural Development Corporation (ADC) farm and few colonial settlers. They included Lord Delamere with 10.2 km², Mr. Block with 25.6km² and Mr. Kanyinya occupying 100.21km². They were practicing large scale farming mostly dealing with cattle rearing and low wheat production in the grassland. These large-scale farmers protected the existing forest as well as wildlife in this area. At times one would confuse gazelles, zebras and other animals with livestock as they were grazing side by side.

In 1975, Ngecha settlement scheme comprising mostly of Kenyans who were displaced during struggle for independence bought 2.21 km² of Mr. Kanyinya Ranch. They settled two hundred and fifteen (215) people each of them getting one hectare. Apart from the clearance of the area allocated to them for cultivation, Ngecha people invaded the existing forest for building materials, firewood and timber for sale. However, they spared areas in the forest selected by their elders as shrines for traditional offerings and sacrifices. Incidentally, these areas were the areas around springs, water catchment areas, Mirangi forest and some sacred trees called "*Migumo*".

In 1977, first Kenyan President Mzee Jomo Kenyatta settled two thousand and nine hundred (2,900) members of Nyakinyua choir who used to entertain him in 58km² of Mr. Kanyinya ranch through the Kiambogo settlement scheme.* The remaining 40km² land of Mr. Kanyinya ranch was left as no-mans land up to date and served as the forest area. This made it even harder for the large-scale settlers to control the invasion of the natural environment they had conserved for decades. After negotiations with the local chiefs, Delamere, Kanyinya and Block reached an agreement to allow local residents to fetch firewood from the fallen trees and pay a fee for any building material one needs from the forest. To be safe, the settlers requested for game warders from the Forestry department under the Ministry of Environment and Natural resources. Delamere and ADC on their part were to provide the warders with housing to reinforce the agreement. They also employed their own men to supplement the few game warders provided by the government.

* Pro-democracy in Africa and Kenya in particular would refer to this as abuse of power that characterised era of one party rule in Kenya.

The year 1990 saw the settlement of two hundred and forty (240) more people in 2.4 km² piece of land sliced from the ADC farm called Kiungururia settlement scheme. This was followed in 1993 by settlement of another nine hundred and ten (910) people brought from Burmt forest and Londiani who occupied 18.2 km² of ADC farm leaving Eburu hills as the only forest area.

2.4 Prosperous period in Kiambogo region (1980s)

Maize, beans, groceries and pyrethrum are some of the main agricultural products of Kiambogo. P.B.K. and K.G.G.C.U. realized the potential of Kiambogo area and assisted in opening depots in Kiambogo to bring their produce. The depots besides assisting the farmers in storage and market point, it slowly grew to become a trading centre and headquarter of Kiambogo location. Therefore Kiambogo trading centre is a product of agricultural production. Apart from farmers, Kiambogo region has civil servants, teachers and businessmen.

Today, Kiambogo residents do recall with nostalgia the 1980s', when Kiambogo was an evergreen area where human beings lived with animals in harmony, interacting with one another freely. The forest cover was approximately 80% and 20% was for human settlement, and this catered for all their needs. Today Eburu Hills have only 5% of forest coverage for the entire region. This cannot satisfy the fuel wood and building needs of Kiambogo residents. Furthermore, this 5% demonstrates how severely the environment has been devastated.

Then, the harvest was bumper an acre produced eighteen (18) bags of maize, 90kg each and five (5) bags of beans, 90kg each due to heavy and predictable rainy season. It was also as a result of fertile land preserved by the forest they cleared for cultivation. There were no financial problems since they could sell their bumper produce and buy whatever they wanted and pay school fees.

Another scenario is where boys and girls used to be assigned duties of collecting wild vegetables from the forest and common fields as supplements for the “ugali” meal. Boys could rather prefer to go hunting than collecting these wild vegetables, due to large number of roaming wild animals. They would bring home a hare, an antelope or a gazelle within no time.

Kiambogo residents used to fetch water from taps, which they found already networked by ADC and white settlers from springs in the higher regions of the forest, and from Kirimu River, which originated from the Mau Hills forest springs. During this time, Kiambogo residents had plenty of water since springs were numerous. Those with iron sheet rooftops and water tanks had no water problems at all since they drunk from their own tanks, as rain was frequent and in plenty. Mostly this water was used for livestock and domestic purposes.

2.5 Destruction of Forest in Kiambogo area

Despite all these gains, Kiambogo residents continued with wanton forest destruction without due regard to the benefits they got from the environment they found preserved.

May be; lack of necessity for basic needs such as water and food may explain why they destroyed the forests without consideration.

The best indigenous trees were harvested for sale to ready market in urban areas. Big trucks full of charcoal and cedar^{*}-the endangered timber species were frequently seen leaving Saika forest. This had been going on despite government ban on logging and charcoal burning on public forest. The unscrupulous traders are believed to collude with local chiefs and local leaders in this venture. Game animals were been killed for food and for sale.

Environmental degradation reached its climax especially in 1993[°] when the area started experiencing frequent drought and failing seasonal rain. Majority of Kiambogo residents lacked any other source of food apart from natural forest resources. They invaded forest area for charcoal burning, logging of cedar for commercial purposes to earn a living to support their families. This led to drying up of springs and wells in the forest. Consequently, wild animals wandered in the region freely, weak and dehydrated in search of water. The locals did not spare them and during this time, wild animals were killed in large numbers including buffaloes, as they were very weak to run.

In the year 2001, a severe drought hit the area after the April-June rain season failed. The entire community was affected and had no means of livelihood. Almost the entire community invaded the Saika, Mau and Sururu forest in search of livelihood. To

^{*} One Truck could carry about 70 bags of charcoal each costing ksh. 150.00 making a total of ksh. 10500.00 or Cedar timber worth over ksh. 100,000.

[°] See fig 2. Average annual rainfall distribution on Nakuru region on page 36

Subsidize their living, they burnt charcoal and cleared the forest and in the process deforested the area. The environmental consequences are still felt today. The drought lasted up to May 2003 when the residents were able to salvage harvest of potatoes, which usually grow faster than maize and beans from 2003 April-June rain season.



Plate 2. Kiambogo area after settlement and wanton destruction of forest cover. Note the patches of bare ground and scattered trees. This is great contrast with plate 1, which shows thicket of bushes covering the ground.

(Source: Author)

2.6 Challenges being faced by Kiambogo residents today

The fact that the forest area was able to sustain crop growth few miles away from the drought hit area made many reconsider their actions towards environment. However as one of them confessed, this was not to stop immediately;

I know it is really bad to clear forest, I know it is our fault that we are experiencing drought. Though I know all this I can't stand with my conviction at the moment as my family urgently need something to eat I hope after this drought is over I will think otherwise. You see we cleared and destroyed our own economical base in the name of greed for extra

income. Now everybody knows that if it was not for this preserved forest, then we could be talking of another story, as death from hunger would be inevitable.²

Kiambogo residents have now been trekking over ten miles in search of water as they have cleared all water catchment areas leaving springs bare, thus drying up. So far one major spring called *Gathigia* had dried up and another one called *Mirangi* is in imminent extinction as people are now busy clearing the *Mirangi* (Bamboo). The *Mirangi* spring can only produce half the water it used to produce ten years ago. This leaves the residents no other options than to scramble for the little water. The scene in the area as far as water is concerned is that of long queues of people waiting to fetch the dripping tap water. Daily duties have been assigned among the family members, the priority duty being the hunt for water. The hunting goes as far as Sururu forest and Mau in search of wells deep in the forest approximately twenty kilometres away.

Water shortage in the area had been attributed to destruction of forest in the area. The time spent searching for water could otherwise be used for other productive development activities like farming. This is a negative trend as far as development is concerned.

To make the matter worse, the residents in their exploitation and plunder of the environment did not invest in future environment. For instance, they neither planted more trees nor thought of harnessing rainwater harvesting.



Plate 3. Showing long queues of people converged at Inter Aid Water Tank Project waiting to fetch water from the dripping tap from Mirangi spring. Sometimes residents do not get even a drop in this water point due to forest destruction around Mirangi spring.
(Source: Author)

Consequently, the residents now are faced with starvation and lack of an economic base. Agriculture, which is their main source of income, has failed due to lack of rain and land exhaustion. No longer can one see a traditional Ghala, which used to be a feature in every household. What they have now is empty stores and desperate faces without hope of better future for their children. As Mrs. Njuguna said with pain;

I don't know what has befallen this place of ours, it used to be a paradise, we never bothered of what to eat or where to fetch water but today, I cannot even imagine my young daughters living here. I am planning to relocate since the Kiambogo I live today is not the one we used to admire and be proud of. Any way it is our own mistake, our own doing. We used God given gift as if in competition we can now see the gold medal we have ...no rain, unproductive land, and lack of water. Everything here costs money you have to buy even water just like in town but I wonder what sort of town this is without even modern buildings, tarmac road and electricity....³

The above remarks reflect a clear image of the despair and resignation of many locals. Very few know for sure what went wrong. Others gawp at things and situations with apprehension. The place needs urgent attention from all spheres of life.

The fight against environmental degradation from this reality is multiple pronged; it is a fight against all those factors that hinder individuals from developing into what God ought them to be in order to enjoy life in its fullness. It is a process aimed at providing enabling environment for individuals to develop and be self-reliant by equipping them with the necessary tools and skills for survival.

2.7 Environmental and development initiatives in Kiambogo area

The development activities in Kiambogo area dates back as early as 1975 the time this area was allocated to the local residents. The residents engaged in farming activities like growing maize, beans, pyrethrum and livestock farming.

The African Inland Church was the first to initiate structured community-based development in Kiambogo area. The A.I.C. through sponsorship of Care International fought poverty and illiteracy through child sponsorship programme as early as 1980. A.I.C. initiative had negligible impact in the area due to corruption and fund misappropriation by the project officials that led to the withdrawal of Care International after brief operations in Kiambogo area.

The Roman Catholic Church through a Small Christian Community called Wazee Group was second. In 1985, the group leased a ten acre piece of land which they planted maize and beans in order to raise fund to built iron sheet roof tops and tanks for water harvesting project. This project met a lot of challenges as crops failed in 1992 before they could accomplish all their goals of permanently eradicating water problem among its members. This project was an effort to salvage the water resources, which was going to waste since most of the resident of Kiambogo houses were grass thatched.

Inter Aid Kenya (an NGO) started its activities in Kiambogo region almost at the same time as The Roman Catholic Church. The NGO was more directly concerned with eradicating poverty in the area. However, for them to do this they realized that they had to help the residents arrest the ongoing environmental degradation that threatened to turn the region into a desert. This according to them was as a result of clearance of forest cover in the area by the local residents in search of fuel, wood, building materials and commercial logging. They introduced environmental education in schools through Pied Crow magazines entitled "cooking to conserve" series. In 1995 they helped the Kiambogo community to build a community water reservouir that tapped water from the Mirangi spring.

Inter Aid Kenya wrapped up its activities in the region after ten years of intensive activities.

Many community-based organisations came in and followed Inter Aid Kenya footsteps of advocating for environmental conservation and economic development. These CBOs are still in operation in the area, they include; Eburu Conservancy, Kiambogo Marketing organisation and Light Sacco.* There are also many other small CBOs and groups in the region engaging on social-economic initiatives in the Kiambogo area.

* See page106 for more details on the activities of these CBOs in Kiambogo area.

AVERAGE RAINFALL DISTRIBUTION IN NAKURU REGION BETWEEN 1985-2002

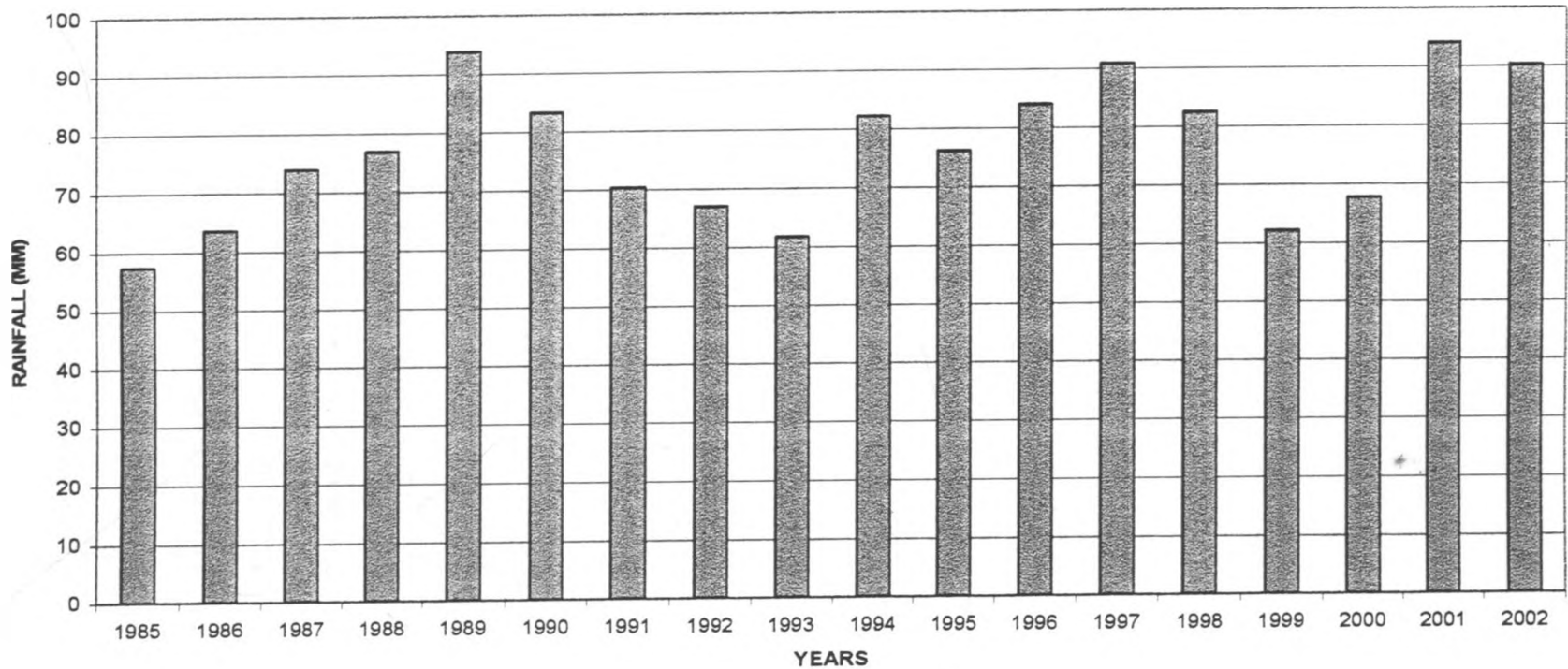


Fig.2. Shows average annual rainfall distribution in Nakuru region. The chart shows that Nakuru region received the highest rainfall during the years 1989, 1997, 2003 and lowest rainfall in the year 1985, 1993 and 1999. Nakuru region is made up of three different climatic regions: Eastern part where Kiambogo is found with dry weather conditions, Western part comprising of the most wet region where Molo, Njoro and Mau Narok is found and central region with moderate weather conditions comprising of Nakuru town, Bahati and Subukia. Therefore the average annual rainfall distribution represented in fig.2 does not reflect a true climatical situation in Kiambogo region which have experienced dry spell with scanty rainfall since 1991.

Notes

1. Interview with Mr. Macharia on 16/12/05, he was a former administration manager with ADC and currently a resident of Kiambogo Kiungururia settlement scheme at his residence in Kiungururia settlement scheme.
2. Interview with Charcoal burner in Sururu forest on 28/12/05 who wished his name to remain anonymous in Sururu forest.
3. Interview with Mrs. Njuguna on 09/12/05, She is a retired primary school teacher in Muthaiti primary school and currently secretary of Catholic women Kiptangwanyi parish at her home in Ndonyo-Eburu village.

CHAPTER THREE

3.0 CAUSES AND IMPACT OF THE ENVIRONMENTAL DEGRADATION IN KIAMBOGO AREA.

3.1 Introduction

This chapter intends to highlight the causes and impact of environmental degradation in Kiambogo region as understood by the Kiambogo residents. This would in turn help the local residents to easily draw linkages between their actions on the environment and the problems they are facing.¹

3.2 Causes of environmental degradation in Kiambogo area

The causes of environmental degradation in Kiambogo area were identified as follows:

a) Human settlement in forest area

In this study, Kiambogo residents identify human settlement and encroachment in the forest area as one of the main causes of environmental degradation in the area. Initially Kiambogo region was a virgin land inhabited by wild animals and wild indigenous trees and bushes. Lord Delamere was the first to settle in Kiambogo occupying 10.2 km² of present Kiambogo region as early as 1900s. He engaged in large-scale livestock rearing and small-scale wheat farming. He was followed by Mr. Kanyinya taking 60.21 km² and Mr Block occupied the rest of the arable land working in Franchise with the Kenyan

government under ADC parastatal. These settlers inhabited the grassland and used natural resources with little disruption to the environment.

However, in 1975, people started settling in the area through various settlement schemes. They cut down trees for building materials, cultivation and for fuel. To make the matter worse, they invaded the remaining forest for charcoal burning and commercial logging of indigenous cedar trees, which they sold to unscrupulous businessmen for quick money. This according to those interviewed led to a massive clearance of the forest, negatively affecting agricultural output in the area. It was study observed that the manner in which Kiambogo residents destroyed their environment is against the principle of stewardship as embraced by Christians and African traditional religion in Kiambogo region.

b) Over population

Another cause of environmental degradation in Kiambogo region is over population. As more people were settled in Kiambogo region through various settlement schemes such as: - Kiambogo, Ngecha, Kiungururia and Kongasis settlement schemes, the forestland was reduced day by day. The local residents agreed that, population explosion especially in 1990s made the small pieces of land allocated to them insufficient to support their big families. Having no other means of livelihood to support these big families, they invaded forestland for cultivation and engaged in commercial tree logging and charcoal burning. Due to this, ADC forest was cleared, so did Meli and Nyaturu. The study found out that most of Kiambogo residents are currently occupying Saika and Witemere forest for

cultivation since these forest areas yield more harvest than the areas they were allocated. This has led to destruction of forest cover and the environment in general.

The high population growth rate in the region is blamed largely on the existence of some religious groups who do not believe on family planning of any kind. This has led to large family sizes as few practice family planning. Therefore, there is need for clergies and religious leaders to address these archaic beliefs and educate their followers on the importance of family planning. This will in turn ease the pressure the local residents put on the environment.

Table 1. The various settlement schemes, and the area they occupied in Km² in Kiambogo area.

Settlement scheme	Number of Allotees	Area in Km ²
Kiambogo	2900	58
Ngecha	215	2.21
Kiungururia	240	2.4
Kongasis	910	18.2

(Source: Kiambogo surveyor's office)

c) Forest fires

Those interviewed by this study in the area, believe that wild fires have contributed to the current environmental degradation. These fires are often caused by charcoal burning in the forest and sometimes fires started by farmers when clearing their land for cultivation. Another widely believed cause of wild fire is honey hunters who use old method of smoking bees off the hive during harvesting of honey. During this process, the forest

catches fire and destroys large area of natural forest causing wild animals to die and water catchments areas to dry up. In 1989 there was big fire that consumed almost the entire ADC forest. The fire left the forest devastated and since then, the plants that sprout have never been able to return the forest into its original state. According to Mrs Njuguna, there is urgent need to sensitise locals on the negative effects of preparing their farm for cultivation using fire. Fire destroys the fertile topsoil, by destroying forest undergrowth, which hold water and release it slowly to the soil.

d) Poor farming methods

The study found out that, the Ministry of Agriculture assigns one agricultural officer in Kiambogo region. This agricultural officer is supposed to educate the residents on the better ways of using their land so as to maximize agricultural production. The agricultural officers deployed here have either failed to carry out their duties due to lack of supervision or apply for transfer immediately citing deplorable living conditions in the area, such as lack of housing, water problem and transport.

It had been observed that, Kiambogo residents employ farming methods that have drastic harmful effects to their environment. Residents cultivating along sloppy areas do not dig terraces across the hilly land. This leads to soil erosion during rainy season and in some instances landslides that sweeps chunks of forest area leaving it bear. Moreover, most farmers use their land continuously without leaving it fallow, thus making it exhausted and unable to produce anything. Consequently, residents had blamed the use of hybrid seeds and fertilizers as the main cause of low agricultural production in Kiambogo

area. These chemicals make the soil chemical-dependent and without them the land could hardly support any crop.

Persistence of lack of agricultural extension officers calls clergies and religious leaders to take the initiatives to educate the local residents on the better methods of farming that portrays responsible use of soil. Scriptures such as Leviticus 25:1-7 that talk of Israelites who were ordered to leave their land fallow for one year after every seven years could be very convenient to these undertakings.

e) Corruption by the law enforcers and laxity.

Kiambogo residents blame local chiefs and law enforcers for being too lenient to those destroying the remaining forest. Police attached to Kiambogo chief camp had been accused of colluding with unscrupulous businessmen in cutting cedar trees and charcoal burning. Lorries are often seen leaving Saika forest in the full knowledge of the administration. This had largely contributed to the destruction of environment in Kiambogo. The outcome had been, reduction of rain and the adverse climatic condition leading to constant drought and water shortage.

Corruption is a vice that is against the teaching of Christianity and African traditional religion. The religious leaders are therefore called to be vocal in condemning the local administration who engages in corruption at the expense of Kiambogo people well-being.

f) Lack of proper forest management

Lack of proper forest management framework in Kiambogo area is seen as another factor behind the wanton destruction of forest and environment in Kiambogo region. Kiambogo residents consider forest as a free entity for everybody and the last resort in time of troubled climatical conditions. According to the residents interviewed, the community does not consider themselves as being the owners of the forest and the government seems not to be keen to protect the existing forest.

Another reason related to lack of proper management as identified by the local residents is lack of forest warders. Those deployed come and go at will citing lack of housing facility, thus have little impact on the protection of the forest. This has made the forest area to be prone to destruction by unscrupulous people. The destruction of forest has been impacting negatively to the development of the region as agricultural output decline. This has caused a lot of suffering to the residents as their main source of income is destroyed.

Clergies and local religious leaders are therefore asked to actively participate in environmental conservation advocacy. This will fill the vacuum that is created by lack of forest warders and proper environmental management programmes. The church should take leading role in advocating for proper environmental management. This can be done through 'creation awareness' environmental campaign as proposed by Obeng².

3.3 Effects of environmental degradation in Kiambogo area

The destruction of environment has caused a lot of harm to the environment and the economical situation in Kiambogo area. The following are the effects unearthed by this study in Kiambogo area: -

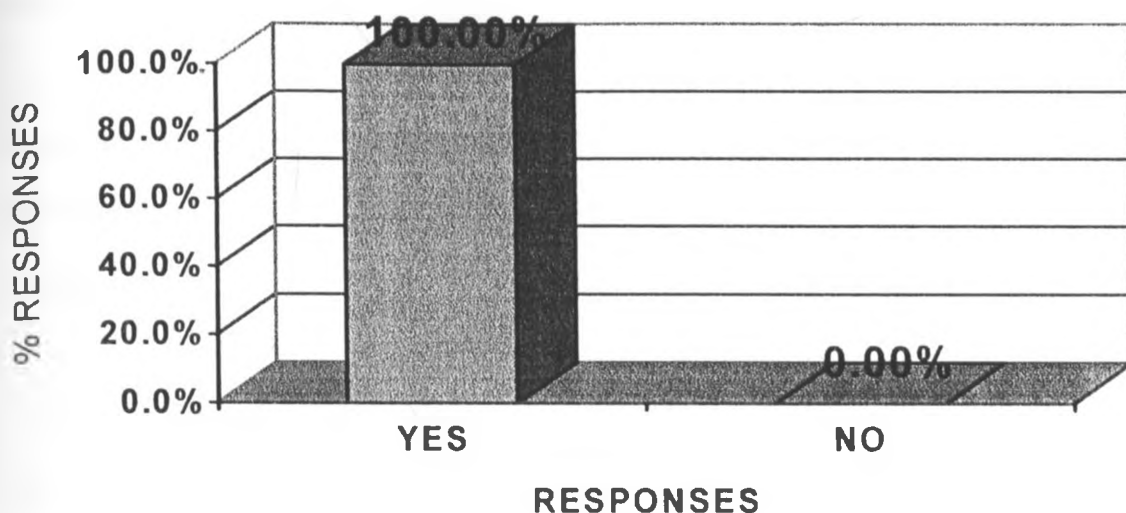
a) Poor harvest

Poor harvest has been the main devastating effect of environmental degradation. 100%-sampled respondents believe that agricultural production of farms near forest is far much higher than those farms far away from the forest. Some compared the harvest around forest to those of 1980s when Kiambogo area was covered with forest vegetation. Clearance of forest cover has led to reduction of rainfall and exhaustion of soil due to over cultivation leading to poor harvest.

Consequently, this situation hinders Kiambogo residents from achieving their development goals, as their main source of economic development is agriculture. Harvest from farms apart from being the only source of food, surplus is also sold to buy commodities that they do not produce in the area like sugar, salt, and other necessities.

Furthermore, residents rely on agricultural income for the payment of school fees for their children. Therefore lack of good harvest or failure of agricultural sector in Kiambogo area is a big blow to the residents who solely depend on it for their survival.

Fig 3: Percentage response of fifty (50) sampled respondents on whether farms near forest produce higher yield than those far away from forest.



b) Change of climate

The study observes that, Kiambogo residents grow maize, beans and pyrethrum, which rely on well-distributed rainfall throughout the year. These crops also require low temperatures of less than 20⁰C. The type of topography determines the climatical condition of a given area. In turn this determines the type of vegetation in a given area. Various types of crops require certain climatical conditions to flourish. This is why certain crops do well in certain places than others. Forest cover is believed to attract rain and cool weather. It does this by holding water and sending it back to the atmosphere. Trees act as windbreakers thus stopping the wind from carrying the rain clouds away.

Clearance of forest in Kiambogo area has drastically led to change of climate. The residents believe that, constant failure of heavy rains of April-June and September-December seasons and non-predictable rainy seasons is as a result of destruction of forest

cover in the area. Consequently, it has led to constant drought and famine coupled with water shortages.

Kiambogo residents are now desperate of the situation on the ground. However they all agree that, continued wanton destruction of forest is the main cause of this unfavourable climate.

c) Shortage of water

The adverse change of climate brought about by the environmental degradation had been observed by this study as the main reason behind drying up of water catchment areas in Kiambogo area. Kiambogo residents have invaded wetlands cutting down trees for fuel, charcoal and for commercial logging.

Consequently, River Kirimu has dried up due to lack of water upstream[♦]. Gathiginia well, which used to be a source of water for more than half the population of Kiambogo residents has dried up. As a result, Kiambogo people are now seen scrambling for the little water dripping from remaining Mirangi and Gitwe water sources. As the study revealed (see plate 4 below), the two water sources are also at the blink of drying up due to the continued forest clearance by the unscrupulous people in Witemere and Saika forest

[♦] Rivers, lakes, wells and other natural features represents vital forces of life in African traditional heritage, thus drying up of a river symbolises a dying community. This is very cirtical of Kiambogo community where Christians practice their faith laced with traditional beliefs.



Plate 4. Mirangi spring, note the little water stuck in the thick mud and the overhead pipe that taps water for Inter Aid Water project. This spring is in the blink of drying up due to clearance of bamboo trees around it. (*Source: Author*)

The residents interviewed in the study agreed that unless something urgent is done life is going to be more unbearable, which might force Kiambogo residents to migrate to other areas of the country thereby becoming environmental refugees.



Plate 5. Dead River Kirimu. This is due to lack of water upstream after many years of clearance of Mau and Sururu water catchment areas. (*Source: Author*)

d) Low output on dairy farming

Persistent drought caused by the destruction of environment in Kiambogo region has adverse effect to the dairy farming productivity. Lack of water has forced the livestock to trek for long distance in search of water. This according to Mr. Mutahi, Community Development Assistant (CDA) of Kiambogo location, made livestock exhausted and weary to produce enough milk thus reducing their milk production.

Moreover, the dry spell in the region often led to scarcity of pasture. Over population on the other hand, had led to occupation of the very available pastureland. The residents laments that, there is hardly no space in the area to graze ones livestock. This has made livestock investment unfavourable venture in Kiambogo area.

3.4 Relationships between the environment and sustainable development

a) Environmental degradation.

Looking at the above causes of environmental degradation in Kiambogo area, the residents sends a lucid message that, due to lack of alternative sources of income, fuel and building materials, residents have no choice but to engage in a lifestyle that threatens the existence of forest around them thus disrupting natural ecosystem.

Environmental degradation has negatively affected agricultural production in this area leading to low agricultural production and water shortages^{*}. As observed by the study,

^{*} According to United Nations, poverty is inability of people to meet their basic needs such as clean water, basic health facility, and balanced diet leading to malnutrition

Kiambogo residents are currently experiencing problems in accessing clean water due to drying up of water wells and River Kirimu. The river and wells are the only water sources for Kiambogo residents and is used in both livestock and domestic purposes. The residents are forced to trek long distances and queue for long hours before getting this basic necessity.

The 90% of sampled respondents believes that there is a dialectical relationship between environment and economic development. Environmental degradation that had been going on in the area has hampered development initiatives. Particularly, the Wazee Group a small Christian community from The Roman Catholic Church was unable to accomplish their water project due to the drought that hit the area in early 1990s. There is a general agreement in the area therefore that a favourable environmental condition is needed for the area to resuscitate and sustain its development programmes.

b) Poverty

Kiambogo region falls under Naivasha constituency, which is ranked number thirty two (32) in the recent poverty ranking by the Ministry of Planning and National Development. The report shows that there are 39% of people living below poverty line in Kiambogo³. However Kiambogo residents believe that the percentage of the Kiambogo population below poverty line is higher than suggested by this survey.

The residents are blaming their poverty status as the main reason that has led them to resource misuse, depletion and degradation of forest resources in the area. This is evident in time of drought where the residents young and old invade forestland for cultivation,

charcoal burning and commercial logging.⁴ Views collected on the ground during this study shows that, were it not for the lack of alternative source of income and energy, the residents could not have invaded the forest.

The availability of water in Kiambogo region had been riddled by water borne diseases such as cholera and typhoid. There had been also rapid spread of air borne diseases such as coughing and, flu due to dust from the bare ground as a result of clearance of forest cover. Many children are suffering from diseases caused by malnutrition such as kwashiorkor as majority of the residents hardly get the correct balanced diet. The little harvest, which is mostly grains, is entirely consumed without vitamins or proteins supplements, which initially were bought by the sale of surplus harvest from the region.

The above hardships and environmental conditions have generally deprived Kiambogo residents the individual capacity to develop both socially, economically and politically. The residents now cry foul that, their problems had been used by politicians to lure them into electing them to civic and parliament seats. The little assistance given to them in form of relief food, and piecemeal development programs have made the area residents develop dependency syndrome. However these assistances have done little to eradicate the main cause of these problems as the problems still persist.

Therefore poverty is seen by the residents as the main reason why they are destroying their immediate environment in search of livelihood. This in turn has impacted negatively

to the area development as the area entirely depends on agriculture production for its economic development.

c) Agriculture

Increasing subdivision of land into holdings that are hardly economically viable, landlessness and increasing pressure to bring greater land areas into arable use have made Kiambogo residents find natural resources more convenient to meet their basic needs such as source of food, shelter materials, fuel and income⁵. On the other hand, lack of good harvest and sometime total crop failure as observed in the area, has incapacitated Kiambogo residents economically as they rely on agricultural income for their basic needs. This has resulted to a situation of destitution where majority of Kiambogo residents lives below poverty line as defined by the United Nations

The residents are requesting assistance from any quarters in order to uplift their standard of living so as to make them less dependent on the environment for their survival. This will ease the pressure exalted on the environment by human activities as they struggle to meet their basic daily needs.

d) 'Creation awareness' environmental education

While Kiambogo residents blame poverty for their continued environmental degradation, it should not be forgotten that the ignorance on the impact of their activities on environment could not be justified. Kiambogo people might be poor of material but they should not be ignorant of the fact that solutions can only come from within. The residents

have the experience of how miserable life can be when environment is destroyed. Hence they need to take a second thought and look for a solution from within themselves. They should not wait for someone to come and point to them the negative effects of environmental destruction.

There is now a general feelings and awakening among Kiambogo people to look for solutions which will permanently eradicate their problems by attacking the hub of the problem. Religious groups are asked to take this favourable ground to help the Kiambogo residents in identifying themselves with God's created world. They should turn religious meeting centres into 'creation awareness centres' where religious leaders could influence the local residents on changing their attitudes towards nature. These centres should educate the locals on the significance role of human beings in God created world as stewards and caretakers of the creations. This will help in stopping the wanton destruction of environment and turn the local residents into environmental managers willing to participate in its protection and conservation.

For along time, Kiambogo people have been made to believe that they lack the skills and resources needed to solve their problems⁶. They now believe it, than ever before, that solutions can only come from within. They can be part of the solution as much as they have been part of the problem. They are the only ones who can essentially identify the real cause of these problems. The residents now know for sure that if something is not done to stop the continued environmental degradation and immediate commencement of the rehabilitation of the already destroyed environment, the situation would get out of

hand. Those respondents consulted on future prospects of agricultural production are optimistic that if proper developmental guidelines are provided and an efficient environmental programmes established things will turn around for better.

Fig 4. Percentage responses from fifty (50) sampled respondents on whether there is a link between problems faced by Kiambogo people and Environmental degradation.

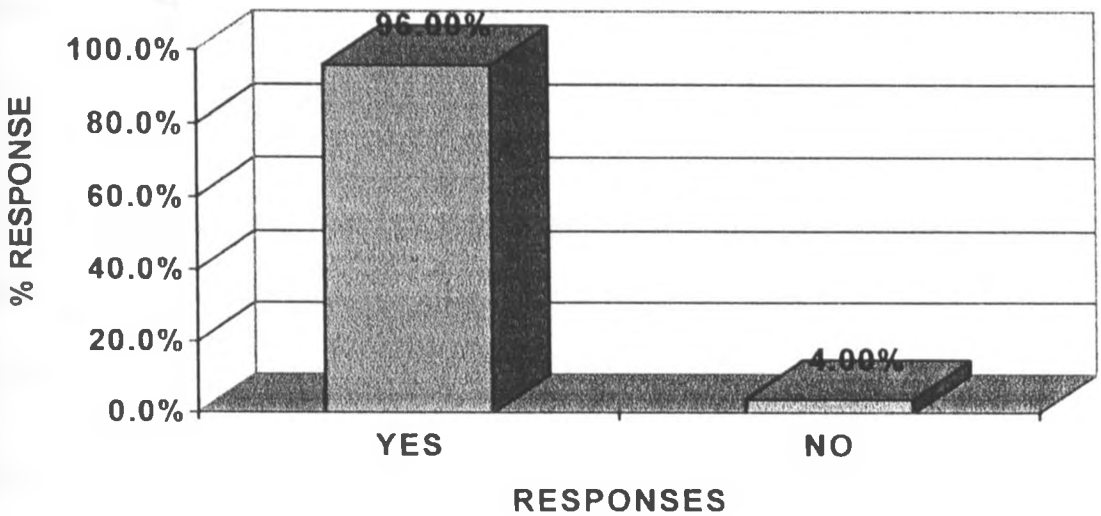


Fig 4. Shows that 96% of the people interviewed believed that there is a direct relationship between the destruction of environment and the problem they are facing. Only 4% of those interviewed believed otherwise. The current water shortage and low agricultural production just to mention a few are living proof of how miserable life can be when environment is destroyed.

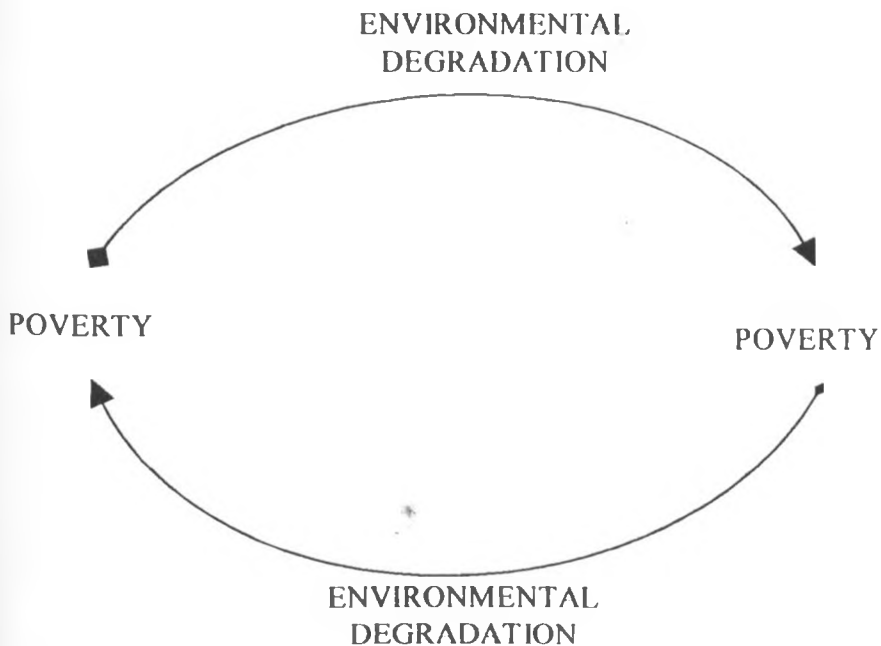
3.5 Conclusion

In a nutshell, the causes of environmental degradation and the impact they have in Kiambogo area brings out very well the relationship between sustainable development and environment.

It is clear from the above analysis that, environmental degradation had been caused by the poverty prevalence among Kiambogo residents who due to lack of enough income to sustain them, had turned to free and cheap environmental resources. In this endeavour, Kiambogo residents have destroyed their immediate environment. Environmental destruction in Kiambogo area have subjected the residents to more problems, as the land could not produce enough food, hence less income and lack of basic necessities such as water. This has led to increase in incidences of poverty.

The overall outcome therefore is a vicious cycle of poverty. So, to eradicate poverty in Kiambogo area and pave way for sustainable development there is need to preserve the environment, the main source of development through agriculture.

Fig 5: showing the vicious cycle of poverty brought about by environmental degradation, which is as a result of poverty prevalence.



Notes

1. Wangari Maathai – Nobel Lecture, Oslo, December 10, 2004, Available at <http://nobelprize.org/peace/laureates/2004/maathai-lecture-text.html>
2. Obeng, E, (1999), “*Healing the Groaning Creation in Africa*”, in Getui, M, N & Obeng E, (Eds), Theology of Reconstruction: Exploratory Essays. Acton Publishers, Nairobi. pg 21
3. Ministry of Planning and National Development, (2005), *Dimensions of Well-being in Kenya, Who and Where are the Poor? A constituency Level profile* Vol II, Central Bureau of Statistics. Pg 36.
4. GOK/UNEP/UNDP (1981); *A Report on the Project on Environment and Development* Vol. I Government Press, pg 54.
5. Ibid. Pg 54.
6. Op Cit. Wangari Maathai, Nobel lecture.

CHAPTER FOUR

4.0. THE ROMAN CATHOLIC CHURCH INITIATIVES IN AREAS OF DEVELOPMENT IN KIAMBOGO AREA.

4.1 Introduction

This chapter presents the development activities of a small Christian community in St. Francis of Assisi Catholic church in Kiambogo area. It highlights the success and failures of their initiatives in the face of environmental degradation. This chapter is an effort to show the link between sustainable development and environmental condition in an area. The chapter will show clearly how low rainfall as a result of forest clearance led to a dead end of the water project initiated by the small Christian community called Wazee group.

4.2 The Roman Catholic Church

This is a Christian church that traces its existence since the reformation period and pledge its allegiance to the authority of bishop of Rome.¹

4.3 Small Christian Communities

This is a group of Christians who live in such a geographical and /or social proximity that they can easily meet at regular intervals, can know each other sufficiently to have a feeling of spiritual togetherness, can pray together, experience joy together, sorrow, success, failures and meet problems together and find solution for them in their ordinary Christian and human mission.²

4.3.1 History of Small Christian Communities in the Roman Catholic Church.

The concept of Small Christian Community can be traced back to the Vatican II council decree on the appropriate renewal of the religious life³. In AMECEA region, the concept dates back to 1976, during the AMECEA Plenary conference of 1976 held at St. Thomas Aquinas Seminary, Nairobi, Kenya. The AMECEA executive committee recognized the building of basic Christian communities in Eastern and central Africa as its priority. This was in response to the recommendations of Plenary Conference of 1973. Consequently, it was in line with church policy of evangelisation and making the church local (*Una Sancta*) or incarnated instead of being transplanted to the local people. The Small Christian Community was meant to make the church render salvific service to the community where it exist, self supportive and commensurate with natural environment where its found.⁴

Bishop Kalilombe, sees the concept of Small Christian Community as the rejuvenation of African local church and new leaf of Christian gospel in Africa. For him the gospel must be seen by the locals as a challenge to their actual life, a force that questions their way of life and confronts their problems in the way these problems are seen by the people, and answers their needs and aspirations. The localisation of the church therefore will be measured by the laity's active and conscious involvement in the church.⁵ A Small Christian Community should apart from catering for spiritual needs of its members, engage the members on social, cultural as well as economic welfare initiatives. Therefore members of a Small Christian Community were to be encouraged to assist one another so

as to uplift these human dimensions within the community. The objective of building Small Christian Communities was to make the local church to be self-ministering, self-propagating and self-supporting⁶.

AMECEA Plenary study conference of 1979, held in Zomba Malawi revealed that Small Christian Communities can help to promote a better human life in all aspects; and by enabling people to participate in the decision and actions of the community, they help to free people from various forms of oppressions. Small Christian Communities can therefore be seen as liberational⁷. Through unity and togetherness, members of a Small Christian Community can liberate themselves from social as well as economical dehumanising conditions such as; poverty, hunger and diseases. Through these Small Christian Communities, people would face problems together and also look for solutions for these problems. The problem brought about by environmental degradation in an area can as well be fought through Small Christian Communities. Impacts of environmental degradation especially to the rural communities and pastoralists are dehumanising. Environmental degradation leads to famine and drought that leads to lack of water and general poverty.

4.3.2 The Roman Catholic Church Policy on Small Christian Communities

The AMECEA Plenary Study conference of 1979, arrived at the following principle guidelines in the implementation of building the Small Christian Communities;

- Small Christian communities are simply the most local incarnations of the one, holy, Catholic and Apostolic Church. This universal church must really present to Christians in their own locality; it must be truly local as well as universal.
- In this local church, therefore must be found all that belongs to the Catholic Church except for those aspects, which belong to it precisely as universal. There must be the *koinonia*, the communion of faith, hope and love that is the heart of the church expressed most fully in the Eucharist; the *kerygma*, the witness to and teaching about the risen Christ, “apostolic teaching”, guaranteed by the apostolic traditions; and the *diakonia*, self-giving service for the sake of others, going beyond the limits of one’s own community, the very mark of Jesus Christ, who gave himself totally to the father, for others, for the whole world.
- Small Christian communities are understood and accepted by the Roman Catholic Church as means by which the church is brought down to the daily life and concerns of people to where they actually live. In them the church takes on flesh and blood in the life situations of people, people are enabled to recognize the mystery of Christ among them “Emmanuel”, God with us. The Christians experiences the joy and freedom of the forgiveness of their sins, in baptism and penance and they are “made alive” in Jesus Christ, in fraternal love and of personal faith. In Small Christian Communities, Christians experience the church as a new way of being together, and they are saved in hope.

- Structurally Small Christian Community is the most local unit of the church. The family is the “domestic church” but of its very nature it has to reach out to other families and the Small Christian Community is made up of several family groups.
- The size of a Small Christian Community is variable, depending on local conditions and on the natural community on which it must be built. What really matters is that the community should have enough members and a sufficient degree of diversity to allow relative self-reliance and a fair variety of charisms. It should not have so many members that they cannot know each other on person-to-person basis. It is the experience of sharing the love of Christ together in a familiar circle that is the defining element of Small Christian Communities. Authentic Small Christian Communities spring from the need to live the church’s life more intensely or from the desire and quest for a more human dimension.
- Roman Catholic mission of working to “construct a more human world” is the driving force behind church’s policy for the creation of Small Christian Communities. AMECEA believes that Small Christian Communities are the most effective means of making the Gospel message truly relevant to the African cultures and traditions. As their sense of responsibility for the church grows, ordained and non-ordained Christians will discover the meaning of a truly African expression of the Christian faith.⁸

4.4 The Roman Catholic Church in Kiambogo

The activities of the Roman Catholic Church in fighting poverty in Kiambogo dates back to 1985. Her involvement in development activities has met a lot of challenges and success in some areas as well as total failure in others. This is due to many factors that contributed to success or failure of her endeavours in helping Kiambogo residents to be economically supportive. Environmental degradation has been one of the main challenge that had been hindering the church from achieving her goals of fighting poverty incidences among her members in Kiambogo area.

Kiptangwanyi Parish was created from the greater Gilgil Parish in 1985. The Parish was under Father Romeo assisted by Father Luciano with twenty three (23) outstations. In the same year, St. Veronica and St. Ann “*Jumuiyas*”⁴ which were gathering as an outstation of Kiptangwanyi Church was upgraded to a full church under the name St. Francis of Assisi. St. Francis of Assisi Church consists of nine Small Christian Communities (Jumuiyas) with fifty two (52) committed members spreading in these “*jumuiyas*”⁹.

These “*Jumuiyas*” includes: -

1. St. Veronica
2. St. Joseph
3. St. Joachim
4. St. Ann
5. St. Teresa
6. St. Camillas

⁴ Jumuiya is a Swahili word used by Local Roman Catholic faithfuls to refer to Small Christian Community.

7. St. Luke
8. St. Elizabeth
9. St. Mary

4.5 Wazee Small Christian Community

4.5.1 Formation of the Wazee Small Christian Community

Wazee Small Christian Community of St. Francis of Assisi church was particularly concerned with social economic problems facing their members especially of water shortage and inhabitable houses. However, they failed to link their agricultural project's success and failure with the environmental condition on the ground. The continued environmental degradation led to the failure of group's crops at the time they were about to start the final phase of their project of constructing brick water tanks. This brick tank was intended to solve one and for all, the water problem being experienced by their members in Kiambogo area.

Wazee Small Christian Community was initiated by Christian members of St. Ann and St. Veronica "Jumuiyas" consisting of twenty seven (27) members after three withdrew from the initiative. Mr. Wilson Kamau Kabene and Mr. Robert Njuguna were Chairman and Secretary respectively.

In August 1985 Mr. Kamau and Mr. Njuguna shared the idea of starting a social-economic group to the prospective members. The idea was accepted and supported by St. Veronica and St. Ann "Jumuiyas" members. Mr. Kabene and Mr. Njuguna arranged to

meet Father Romeo the following Sunday to seek approval of the parish to start the initiative.

They had no written or formal proposal. However, with them they carried in their hearts the problems and social suffering of their members to Father Romeo. So they met him and explained to him in detail their intentions. They told him that their community was experiencing water problems due to reduction of water volumes in Gathiginia, Mirangi and Gitwe water sources and drying up of River Kirimu. They also informed him that, the members were living in inhabitable grass-thatched houses which were total disaster during rainy season and prone to fire. It should be noted that, the reduction of water levels in Gathiginia, Mirangi and Gitwe wells was as a result of clearance of forest cover around these water sources.

They informed him that, the group wanted to start a farming project in which they could pool fund to construct iron sheet roofed houses that, apart from providing decent rooftops they could harvest rainwater and store them in tank for domestic use. Father Romeo was impressed with the idea and told them that he was willing to help them personally besides approving the project. However, he told them to go and put all those ideas in writing and indicate how they intended to achieve their goals and how the initiative was going to benefit them. After that they were to bring it back and he would see what to do. Mr. Kabene and Mr. Njuguna left Kiptangwanyi Parish head office a happy duo.

They went and gathered St. Ann and Veronica “Jumuiya” members who wished to join the Wazee Small Christian Community during the mid-week meeting day at Mr. Kabene home. In this meeting, they discussed at length what the project should entail as instructed by Father Romeo.

4.5.2 The proposal

The proposed project was as follows:

The project was to entail engaging in farming of maize and beans in a five-acre piece of land. Wanjengere farm was identified and the group had to raise Ksh. 500 for letting the five-acre piece of land. Then they had to contribute money for seeds and provide manual manpower for tilling the land, planting, weeding and harvesting up to the point of selling the crops to K.G.G.C.U. The tilling of the land was to continue until the group get enough money to achieve its objectives.

The implementation of the intended project was to be in three phases.

Phase I

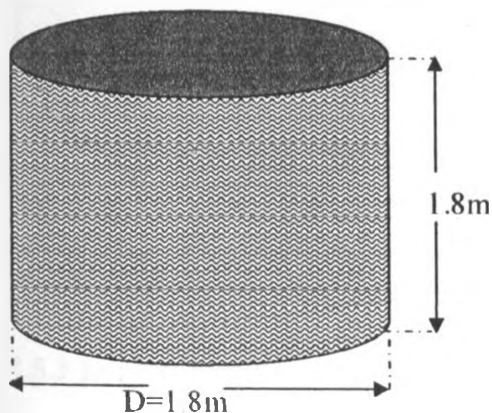
This was to provide iron sheet rooftops to its twenty seven (27) members. Each member had to build the house wall and put the timberwork on the roofing and the group was to buy twenty (20) pieces of corrugated iron sheets of 2-metre each. If any member wished to have a bigger house she/he had to provide the additional iron sheets. The group would employ one carpenter for roofing all twenty seven (27) members’ houses. The project was expected to cost ksh. 108,000 including labour.

Phase II.

This phase was to involve the construction of 4.6m^3 - corrugated iron sheet tank for rain-water harvesting for every member.

The tank was to be made up of four (4) corrugated iron sheets of two (2) metres each and plain iron sheets of (4 x 4) metres for top and bottom cover. The solder was to be part of labour from the contracted tinsmith. If any member wished to have a bigger tank he/she was supposed to buy for herself the extra iron sheets, the group was to cover other costs. The project was expected to cost ksh. 35,000 including labour.

Fig 6. The dimensions of the proposed corrugated iron sheet rainwater-harvesting tank for Wazee Small Christian Community. (Source: Wazee Group records)



Phase III

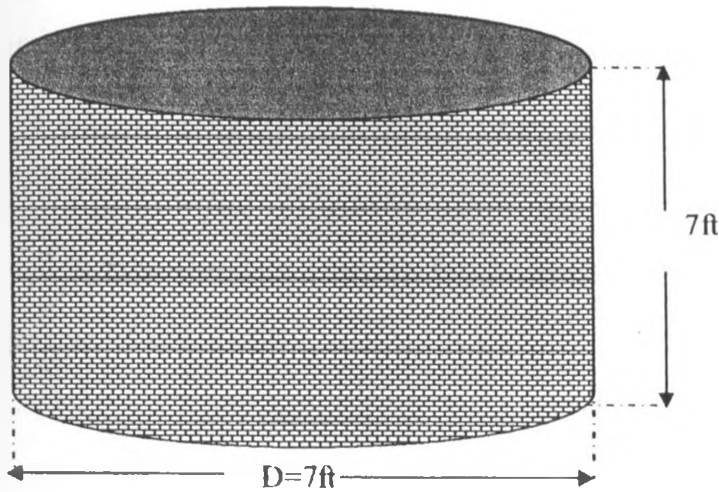
The third and final phase was to replace the iron sheet tank with a 7.3m^3 -brick tank for every member at a cost of Ksh.11, 000 each. The cost was to cover the following materials:

- 12 bags of cement @ 320/= per bag
- 1 tonne of ballast @ 750/= per tonne

- 5 tonnes of sand @ 800/= per tonne
- 200fts of building bricks @ 2000/=

However, this was to be pegged at the farm output and possibility of the expansion of production capacity by having bigger farm¹⁰.

Fig 7. The dimensions of a proposed Wazee Small Christian Community brick tank, the dream that never lived to be realized. (Source: Wazee Group records)



4.5.3 Implementation of the Project

The following week, Mr. Kabene and Mr. Njuguna took the written proposal to Father Romeo. He reviewed the proposal and was very happy with the efforts of these “Jumuiyas”. Out of gratitude, Father Romeo lent them ksh.500 for renting the piece of land. This was followed by a donation of two (2) bags of “Mwitmania” beans of 90kg each from a wealthy church member. The group members had to raise money to pay for ten (10) bags of 10kg each of hybrid maize seeds, the members contribution was ready by January 1986 and the five-acre piece of land was divided into twenty seven (27) stripes

for tilling and planting in January. Those pieces were to be maintained and cared for by the assigned members. The output of each piece would determine the commitment of each member in the group. At the end of the year the five-acre land brought forth seventeen (17) bags of 90kg each of beans and forty (40) bags of 90kg each of maize. This translated to ksh.8,400 from the sale of maize and ksh.10,540 from the sale of beans bringing the total to ksh. 18,940. This outcome encouraged the group and they hired another five-acre piece of land to make the total of hired land to ten (10) - acres. The year 1987 saw the group harvesting one hundred and fifty (150) bags of 90kg each of maize and thirty (30) bags of 90kg each of beans. However, this bumper harvest sent the price of crops plunging. A 90kg-bag of maize was sold at Ksh. 170, and a 90kg-bag of beans sold at ksh. 450. This year the Wazee Small Christian Community were able to get revenue of ksh. 39,000.

Assisted by Mr. Mahinda former director of now defant Shelter Bank of Nakuru, the group opened bank account in which the bank agreed to fund their initiative and the group would in turn deposit their farm income with the bank.

In 1988 after the harvesting of 96 bags of 90kg each of maize and 43 bags of 90kg each of beans, the construction of irons sheet rooflops was done that December for two days. The group had borrowed ksh. 60,000 extra from the Shelter Bank to oversaw its project. The second - five-acre land was divided into two parts. In the year 1989 after harvest, the group managed 54 bags of 90kg each of maize and 11 bags of 90kg each of beans; Pest destroyed a $\frac{1}{4}$ of the harvest. However, the group was determined to accomplish its

mission and at the end of 1989. The iron sheet water tank project was undertaken and completed in January 1990 with the loan from Shelter Bank.



Plate 6. Wazee Small Christian Community Phase I and Phase II project of iron sheet rooftop and water tank of Mr. Njuguna; the former secretary of the group.
(Source: Author)

The continued destruction of forest cover in the area led to poor climatical condition in 1990-1993. This situation persisted for the next two years. The impact of environmental degradation was felt by Wazee Small Christian Community. Their farming project was particularly affected, their maize and beans crops failed. However, the group managed to pay the bank debt with dwindling harvest that was caused by low rainfall. The seven and a half-acre piece of land managed four (4) bags of 90kg each of maize; no beans were harvested in 1992. The group could not manage to move on to the third phase of brick tanks. In 1993, they had to abandon the land due to complete crop failure and drought. The pyrethrum planted in the 2 ½ acre of the second piece of land never grew to be

harvested and by the time of returning the land to the owner, the pyrethrum had dried up in the farm¹¹.

4.6 Conclusion

This project initiated by the Wazee Small Christian Community of St. Francis of Assisi Catholic Church, have stood out to be emulated by other Christian communities. It is a living example on how Christians could come together and fight social impediments and uplift the living standard of their members. The Church encouraged other “Jumuiyas” to emulate the group so as to uplift the social as well as spiritual welfare of their brothers and sisters.

This initiative by Wazee Small Christian Community is a good proof that churches can unitise the Small Christian Communities to fight environmental degradation in the area. Christian communities can come together and start environmental conservation initiative though the Small Christian Communities.

The NGOs and government agencies had never in the past-utilised Small Christian Communities in environmental advocacy. It is high time these agents start to realise that the Small Christian Communities can be an appropriate channel in the fight against environmental degradation since they are community based.

The building of iron sheet tanks was a good idea. However, it only produced short-term solution to the water problems. Today, those tanks are leaking and almost all of them

have rusted beyond repair. On the other hand, the participation of local residents in these projects is worth noting; providing manpower and their willingness to improve their life is commendable.

However, the failure to accomplish the group's entire vision project up to the third phase was blamed on environmental related factors, that is; lack of rain and crop failure due to drought. The prevalence of these unfavourable conditions was as a result of destruction of environment especially forest. If the local residents cared and protected their immediate environment, the six-years of farming by the Wazee Small Christian Community could have yielded enough returns to substitute the iron sheet tanks with bricks tanks by the year 1993.

Table 2. Maize and beans output of Wazee Group for the period 1986-1993.

YEAR	MAIZE	BEANS	GROSS INCOME (KSH)
1986	40(210)	17(620)	18,940.00
1987	150(170)	30(450)	39,000.00
1988	96(280)	43(8X560)	50,960.00
1989	54(40x320)	11(8x900)	20,000.00
1990-1992	20(380)	5(900)	12,100.00
1993	-	-	-
TOTAL			141,000.00

(Source: Wazee Group records.)

Table 2. Shows that there was a drop in the farm output between the year 1990 and 1992 and the situation became worse in the year 1993 when the group experienced total crop failure. The drop in farm output was attributed to a deterioration of climate from 1989 through 1992 reaching a climax in the year 1993.

Notes

1. Cross, F, L & Livingstone, E, A(Eds)(1974), The Oxford Dictionary of the Christian Church, second edition, Oxford University Press, New York.
2. Kalilombe, A, P, (1976), "An Overall view on Building Small Christian Communities", In AMECEA Plenary Conference, 1976, Afer Vol 18, No. 5, Gaba Publications, Eldoret.pp.272
3. Op cit. Cross.pp.1428
4. Op cit. Kililombe. pp. 262.
5. Ibid. p. 264.
6. Ibid. p. 274.
7. AMECEA Plenary Study Conference, 1979, Afer, Vol.21, p.257-320. Gaba Publication. p.260
8. AMECEA Plenary Study Conference, 1979, "Conclusion of the study conference" in Afer, Vol.21., p.257-320 p.265
9. Kiptangwanyi Parish records supplemented by Interview with Father George Munyaka, The current Kiptangwanyi Parish Priest on February 12th, 2006, 11:00 am at Parish offices, Kiptangwanyi.
10. Wazee group farm records, the project proposal that was presented to Father Romeo in 1985.
11. Wazee group farm records, Farm output records from the year 1986 to 1993.

CHAPTER FIVE

5.0. INTER AID KENYA DEVELOPMENT PROGRAMMES IN KIAMBOGO AREA

5.1 Introduction

5.1.1 Mission statement

International Christian Aid (I.C.A) is a non-profit organization committed to offering humanitarian aid, regardless of race, religion, sex, or political affiliation, to third world countries. Their principles are demonstrated through their actions and efforts to care for those in need and are manifested by their compassion, integrity and impartiality.

International Christian Aid believes children are the future, yet they are the most vulnerable to disease, hunger and deprivation. International Christian Aid is committed to aiding these children and to alleviating suffering by providing the initiatives and assistance that will bring about self-reliance and independence through education and basic resources.

Thus, their aim is to fight all those factors that hinder children from developing socially, physically and economically. The issue of environmental conservation comes in hardy in their objectives as the poor people in developing world directly depend on environment for survival. They, have a policy of helping the poor communities whose children they sponsor to conserve and sustain their immediate environment.

International Christian Aid is an agent of hope, linking caring Americans with needy children, their families and communities in the developing world¹.



Their emblem - 'loving hands supporting the world'

Inter Aid Kenya started its activities in Kenya and particularly in Kiambogo region as early as 1985. It was by then known as International Christian Aid (ICA).

5.2 School and child sponsorship program.

The core foundation of International Christian Aid is the child sponsorship program. They believe that they may not be able to change the world, but they can make a difference in the life of one child. To that one child, it might mean fresh water, one good meal a day, the opportunity to learn how to read and write or something as simple as a safe place from where to play. Our world just might be a better place tomorrow because of the difference you choose to make today². They believe that, deplorable environmental conditions deny the child these facilities, more so if the child is a member of a community that directly depend on environment for survival. Lack of water, food and general poverty characterizes the living conditions of poor communities when their environment is destroyed.

Inter Aid Kenya solicit child sponsorship among Christian communities living in America. A child sponsor commits him/herself to remit just \$25.00 a month, less than \$1.00 a day. Once someone decides to sponsor a child he/she would receive a picture and a case history of that child in the mail along with a statement for billing purposes. One can select to be billed monthly, quarterly or annually. The child sponsors are informed in advance that the sponsored child have a family and a community and at times he/she may be required to chip in assistance in order to provide wholesome assistance to the child who is a member of a community with social and economical problems. It is under these conditions that Inter Aid Kenya was able to extend its sponsorship to benefit the entire community of Kiambogo

Inter Aid Kenya, identified three primary schools for sponsorship in Kiambogo, they were:-

- Nderit Primary school
- Muthaiti Primary School and
- Munanda Primary School

The first school to visit and sponsor was Nderit Primary. They first paid the school a visit in January 1985 and after explaining to the administration their intent, arranged to pay the school a surprise visit so as to randomly identify the children to sponsor. They came the following week on Monday at around break time. The then Head master of Nderit Primary, Mr. Wambugu, called an impromptu assembly of pupils and he ordered them to

sit down on the grass and the officials of Inter Aid Kenya were invited to make their selection.

They selected 40 pupils who they identified as very poor. The following criterion was used:-

- Pupils wearing worn out uniforms
- Those without uniforms
- Those who looked neglected in personal hygiene
- And those who looked weak and with malnutrition diseases.

During this process, none of the pupils knew why they were being selected. The selected group was ordered to be left behind while the rest of the group was released to go back to their classes.

The Inter Aid Kenya officials took their names and presented them with uniforms, some casual jackets with International Christian Aid logo on the back, blankets, exercise books, pens and school bags.

In the same term, they went to Muthaiti Primary and selected 40 pupils and then Munanda Primary School and selected another 30 pupils bringing the total of sponsored pupils in Kiambogo region to 110 pupils. The number was in line with the number of individual child sponsors who had pledged to sponsor children and had sent their initial donation of \$25.00 through I.C.A.

Those schools whose pupils were sponsored automatically became beneficiaries of general sponsorship which included; termly supply of stationery such as: text books, exercise books, pens, pencils, chalk, general teaching aids, sports kits and equipments.

This program saw many students been sent to school by their parents and according to Mr. Kabene the number of school drop outs dropped drastically as many stayed in school awaiting their chance to be sponsored and be given free clothes.

5.3. Environmental Initiatives

Inter Aid Kenya realized that Kiambogo residents due to their level of social as well as economic development, directly depend on environment for fuel, building materials and subsistence farming. To help them conserve their environment, Inter Aid Kenya supplied along their schools' stationeries well illustrated and easy to read children magazines called "Pied crow". These magazine in a series entitled "*Cooking to Conserve*" entertained children together with their parents at home as they illustrated and educated them on how to conserve the forest by applying the best method of cooking that conserve the wood fuel.

The Pied Crow magazine, explicitly explained how to use wood fuel in order to conserve the forest for future and longer use. This is after Inter Aid Kenya realized that Kiambogo residents were using 100% wood fuel for cooking.

This magazine series “*cooking to conserve*” had the following striking illustrations which some of Kiambogo residents still recall and use as they cook to conserve.

1. Splitting firewood to small slices so that, little wood fuel would be needed for cooking.
2. Drying the wood fuel before using them for cooking.
3. Using little wood fuel when cooking because when food boil temperature would not rise beyond the boiling point thus conserves firewood for future cooking.
4. Putting off fire after finishing cooking for future use.
5. Harvesting tree branches instead of trunks and
6. Avoiding uprooting trees when harvesting wood fuel to allow sprouting of new offshoots, which would be wood fuel for tomorrow.

The above environmental information contained in these ‘cooking to conserve’ magazine series however small, contributed towards conservation of the forests in Kiambogo. It helped both parents and children to understand the importance of preserving forest as a source of wood fuel³. The Pied Crow magazines demonstrated to the residents the best way of using the forest resources.

To hammer home their main objective of conserving forest cover in the region, Inter Aid Kenya provided seedlings to the sponsored schools. They also made it a policy that the school should allocate a portion of their compound for forest and planting of trees along footpaths and along the school’s fence. It was the duty of pupils, teachers and parents of

concerned schools to water and attend the trees until the trees are of age they could survive on their own.

Today, over twenty years after this initiative, the young seedlings have grown to big trees that have turned the school compound to a green land providing very conducive study environment for pupils. This initiative today stands to be a very good example on how the local residents could turn their destroyed environment into a green land with exotic forests in their farm.

5.4. Construction of classrooms and pit latrines in schools

In December 1990, Inter Aid Kenya organised a Christmas fete for each school worth ksh. 30,000. Each school had to decide on the menu for the fete in addition to a bull. They used this fete as a turning point of their action plan from individual child sponsorship to the school sponsorship. However, each school fete was to be on a different day.

During the fete they announced the change of action plan. The new Action plan comprised of a new project to the sponsored school that would leave a permanent mark of the group sponsorship once it wound up in the future. The suggested projects were: either to construct a modern six-classroom bricks block that could accommodate up to forty (40) pupils in each classroom or twelve (12) brick walled pit latrines five (5) for girls, five (5) for boys with two staff latrines. The dimensions of the pit latrines were to be 30ft deep and 3ft by 15ft for the boys and girls and 30ft deep and 3ft by 6ft for staff latrines.

Each of the option projects was estimated to cost approximately ksh. 300,000 for each school bringing the total sponsorship to a tune of ksh. 1,000,000. Muthaiti Primary school opted for pit latrines while Nderit and Munanda chose classroom instead.

The project started simultaneously in the three schools on January 1991. Inter Aid Kenya deviated from voluntary work camp projects tradition where they used to invite American Christians to volunteer their services to these kind of projects. They sourced manpower from the local residents and especially parents in respective schools. This initiative employed approximately forty (40) peoples thus a source of income to around forty (40) families.

At the beginning of second term of 1991, the project was completed and officially handed over to the schools in a colourful ceremony attended by representative of Inter Aid Kenya and visitors from USA.

The project was a big boost to both parents and pupils and government as there was lesser burden for school development fund. The funds paid by parents were otherwise used in other development projects, buying of textbooks and school uniforms.

5.5. Kiambogo water project

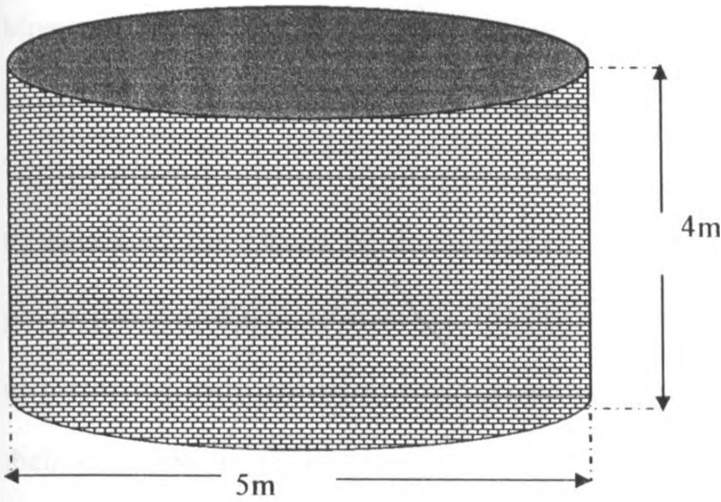
Inter Aid Kenya wished to extend their sponsorship to counter the persistent water problem brought about by continued environmental degradation. The project involved tapping water from Mirangi spring and building a water tank closer to the community.

The project was estimated to cost around ksh.1 million for the pipeline and the construction of a 60m³ brick water tank. This water tank was intended to serve Kiambogo people during dry season for domestic purposes and watering their crops. Kiambogo community on their part had to establish a tree nursery near the tank site, which was to provide tree seedlings to the residents during rainy season for tree planting in their farms. According to Mr. Muchemi, former manager of the tank project, the Inter Aid vision was to provide tree seedlings to the farmers who in turn would plant them on their farms and transform the entire area within a period of ten years to the forestland it used to be.

The Kiambogo community was also supposed to dig the trenches for water pipes and clear the site where water tank was to be constructed⁴.

With cooperation from the Kiambogo community, the project started in August 1994 and was finished on March 1995.

Fig 8. The measurement of Inter Aid water tank. (*Source: Author*)



The tank was later handed over to the Kiambugo community by the Inter Aid Kenya to the care of a five (5)-man management committee elected by the local community.

5.6 Winding up of Inter Aid Kenya Activities in Kiambugo region

During the handover ceremony, Inter Aid Kenya and Kiambugo community held a forum to discuss the way of fighting social and economic problems experienced in the region.

The forum discussed the ongoing forest clearance and danger of water shortage as the water catchment areas were being invaded by local residents for firewood, building timber and charcoal burning. The local community was cautioned against invading the areas around Mirangi spring where the tank draws water. Consequences of destroying Sururu forest were evident when Kirimu River dried up. According to Inter Aid Kenya, if

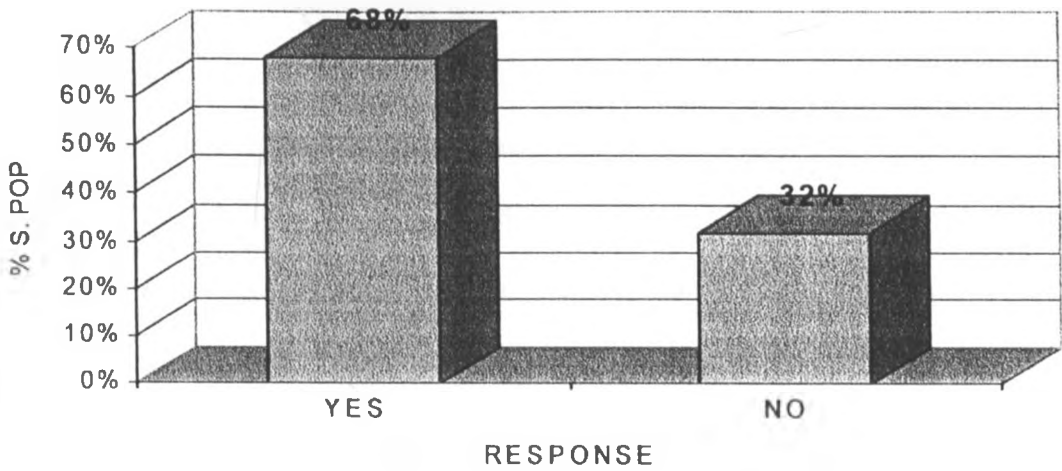
the community do not protect the Mirangi spring, the water project would become useless.

Moreover, tree planting/farming was encouraged as an alternative source of firewood and timber in order to conserve the remaining forest.

Furthermore, the effects of environmental degradation on climate and agricultural production were discussed at length. They sensitised the local residents on the importance of preserving their immediate environment by provoking them to reflect on the impact their actions had on environment in the past two decades

The forum lowered the curtains for the Inter Aid Kenya activities in Kiambogo region and Kenya in general. Over ten years since they wrapped up their activities in Kiambogo area, Inter Aid Kenya contribution towards social and economical transformation of Kiambogo region remain rife in the mind and heart of Kiambogo residents and they would forever be remembered.

Fig 9. Percentage responses of fifty (50) sampled residents on whether the initiative by Inter Aid Kenya benefited them in any way.



Those interviewed appreciated the organisation's initiative and 68% of the fifty (50) sampled respondents agreed that, they had directly benefited from these projects. Only 32% said they had not benefited from Inter Aid Kenya initiative.

5.7 Conclusion

The activities of Inter Aid Kenya in Kiambogo area are a good example of the grave concern of environmental degradation in Kiambogo area. Their approach was wholesome in their projects. They wanted to lift the living standard of the resident in the area. However, they realized that to do this and sustain their programmes they have to contain the ongoing environmental degradation in the area. Their approach of targeting the children was significant as these children were adults of tomorrow and if they upheld what the NGO was teaching on how to conserve the environment then this would ensure continuity of their initiative at that time and time to come.

According to Mr. Muchemi Inter Aid Kenya set a good precedent for Kiambogo own community-based organisations that are currently flourishing in the area. For him, if it were not for Inter Aid Kenya initiatives, people like him could never had thought of a way of helping the Kiambogo people out of the problems they are facing now. Eburu conservancy organisation, which he heads, is a good example of CBOs that emulated Inter Aid Kenya kind of approach. He advised other groups interested in helping Kiambogo residents out of their suffering and poverty to borrow a leaf from Inter Aid Kenya approaches. He is now convinced than ever that environmental degradation in the area is responsible for all hardships being experienced by the local residents.

It has been observed that, for any CBOs likely to succeed in its effort of eradicating poverty in the area, the problem of environmental degradation should be tackled first. There is a dialectical relationship between the problems being experienced in the area and the state of environment. The problem of water, low agricultural output and constant drought can all be blamed on poor environmental conditions that have been facilitated by clearance of forest cover by the residents. To do this the CBOs should aim at changing way of life of the Kiambogo community. The objective of this undertaking should be to make them less dependent on environment for basic needs. If this is achieved then the economic development initiatives would thrive in the area.

Fig 10. Percentage responses of fifty (50) sampled respondents on whether the initiatives by Inter Aid Kenya had contributed to economical development in Kiambogo area.

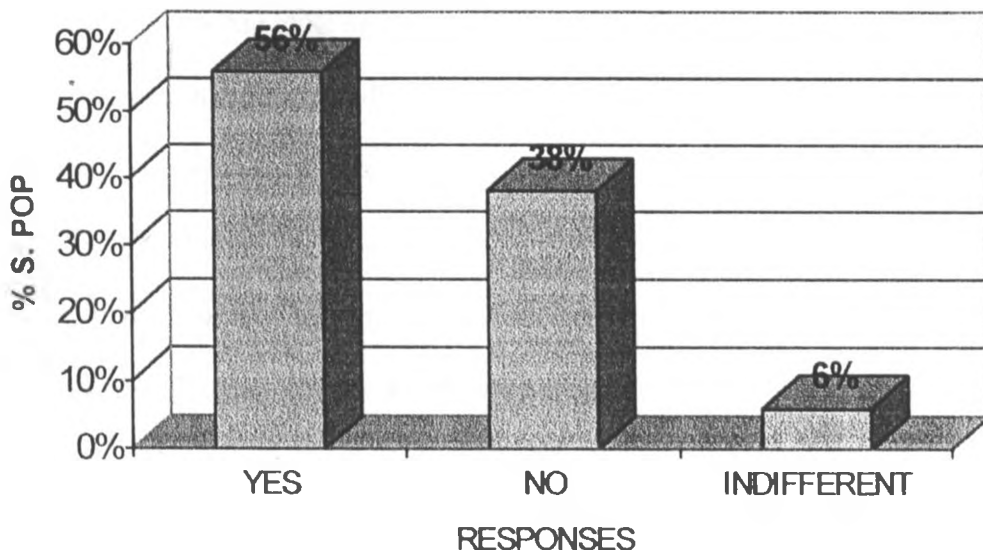


Fig.10 shows that 56% of sampled respondents believed that, these initiatives had contributed to economical development of Kiambogo region, as it was an effort to eradicate water problem. 38% concurred that; the initiatives were uneconomical, while 6% were indifferent. However some suggested that, it could had been more beneficial if the project was expanded so as to pave way for water irrigation during dry spell, which would have translated to more agricultural production.

Notes

1. International Christian Aid Mission Statement, Available at
<http://www.internationalchristianaidinc.org/home.htm>
2. International Christina Aid child sponsorship programmes. Available at
<http://www.internationalchristianaidinc.org/childsponsorship.htm>
3. Interview with Mr. Kinyua, Former Inter Aid Kenya operations officer in Kiambogo held on January 5th 2006, 2:00 pm at his home in Ndonyo Eburu village.
4. Interview with Mr. Muchemi, Former Inter Aid Kenya water project manager in Kiambogo held on January 17th 2006 9.00 am at his tree nursery project, Gituamba village.

CHAPTER SIX

6.0. THE ROLE OF KIAMBOGO COMMUNITY IN CONSERVING THEIR IMMEDIATE ENVIRONMENT;

6.1 Introduction

This chapter highlights the role of Kiambogo community in conserving their immediate environment. The information analysed in this chapter originates from the suggestions collected from the sampled respondents.

6.2 The way forward

Kiambogo residents have identified environmental degradation as the main cause of poverty in Kiambogo region. The problems Kiambogo people are facing such as poor harvest, water shortage, and low standards of living are directly linked to the prevailing environmental degradation. Subsequently, the respondents censured the prevailing environmental degradation in Kiambogo area on ignorance by the residents on the effects of their activities to their environment.

Therefore, in order to arrest this situation, there is unanimous agreement that every effort should be put in place to arrest the ongoing environmental degradation. Consequently every effort should be made to counter its effect on living standard of the residents, which is characterized by escalating abject poverty.

6.2.1. Fighting ignorance through ‘creation awareness’ environmental education.

Sampled responses by this study show that, the majority of Kiambogo residents had been ignorant of the impact of their activities on the environment. Charcoal burning, clearance of forest for cultivation had rarely crossed the mind of many as detrimental to the environment. The residents have not been keen enough to link the problems they are experiencing with the environment they had destroyed. According to one charcoal burner in Sururu forest, the important thing for them is how they can get their daily bread, but about environment, there is nothing they can do to stop it from depletion. This is because they have to cut the trees so that they can feed their families.

The study also revealed that, although a considerable percentage of people are aware of the importance of conserving their immediate environment, formal environmental advocacy in the area have been very minimal. NGOs, CBOs and churches have never engaged on a serious campaign to educate the local residents about the importance and ways of conserving their immediate environment. Those organisations like Inter Aid Kenya that seems to have tried to tackle the issue of environmental conservation, took it as a matter of convenience in their other broader objectives of fighting poverty and illiteracy in the area.

Mr. Mucheru concurs that; ignorance is caused largely by lack of information or knowledge of the impact of one’s actions on environment. Formal education helps a lot in eradicating ignorance among the populace.

According to Mr. Kinyua, there is a need to introduce environmental education programmes in primary and secondary school to educate people on the benefit of a well-conserved environment vis a vis the negative effects of destroying the immediate environment. He suggested the use of public forums by Community Based Organisations (CBOs) and Non-Governmental organisations (NGOs) in advocating for environmental conservation attitude among Kiambogo people. Public “*barazas*”, market day and other public social gatherings should be used as centres to enlighten Kiambogo residents about the link between their problems and the environment that they have destroyed. This is to confirm what Muthoka and Rego said;

Education is a key process in development, in terms of increasing environmental awareness. This in turn should arouse our concern regarding the state of the environment, which translates itself into commitment to do something for the environment. The action involves acquisition of the required attitudes and behaviours in relation to the environment. The main goal is to make people aware of the processes and consequences of their activities on the environment¹.

Majority of Kiambogo residents are Christians. There has been continuity of African traditional heritage among the Christians in the region. Therefore, environmental advocacy that incorporates the creation theme as its main ingredients would instil moral responsibility among the populace in the area. This in turn would lead to a change of attitude amongst the residents on how they perceive nature.

Churches can play a major role as 'creation awareness centres' in educating the Kiambogo resident's responsible use of natural resources. Obeng sees Clergy as in a prime position to influence millions of people who go to church on Sundays to acquire knowledge on how to preserve and protect their immediate environment². What is needed in Kiambogo area is more than preservation of environment. Environment in Kiambogo area is already destroyed through clearance of forest. It is high time that clergy in this region embark on a mission to educate Kiambogo people on how to reclaim their destroyed environment.

Churches recipe in their 'creation awareness' environmental campaign should be; to educate Kiambogo residents on how to plant trees, practice better farming methods and stop the ongoing forest invasion. The area need the recreation expedience as the environment is already destroyed. The situation calls for more emphasis on the religious themes of God's creation in their environmental campaign. This will awaken the locals to the realisation that they are co-workers in God creation. As Obeng noted, churches as 'creation awareness centres' should educate their members on individual responsibilities towards their neighbours and environment³. The church should be vocal in condemning invasion of forest and allocation of land to politically correct people at the expense of the environment. It should stand against the pretence of poverty by local residents as the reason enough to invade their forestland. The church should however suggest alternative sources of income and fuel to reduce the local residents' over dependency on forest for fuel and income.

The religious beliefs and teachings in Christianity and African traditional religion should provide the moral and religious foundations for the local residents to have a positive attitude towards creation; that is of kindness and respect towards nature⁴.

Both Christianity and African traditional religion, portray human being as having a unique place and playing a key role in the working out of God's plan for the whole of creation. Among all creations, human beings were created in the image of God and given a clear commission by God to have 'dominion' over the rest of creation. To have dominion means that human beings are stewards and caretaker of God's created world⁵.

A good steward acts as a faithful servant to his boss. In this case human beings are stewards of God's creation; therefore they have a duty of sustaining, preserving and protecting the nature both for present and future generations. This phenomenon of stewardship makes human being accountable to God on how they handle their immediate environment⁶.

Christianity and traditional African religion believe that any person who exploits nature for his/her own selfish ends fails to be God steward. Kiambogo residents have failed as God's stewards when they invaded forest and destroyed forest cover in the area. The 'creation awareness' campaign should involve among other thing leading local residents to repentance on the wrongs they have done to the noble nature they were entrusted to protect by God.

As Wangari Maathai once put it ‘... Nature is very unforgiving if you destroy it, it will destroy you also....’⁴ This is what Kiambogo residents are experiencing, they have destroyed nature to the point that it is unable to produce food, or sustain plant life. This is the “tit for tat”⁵ aspect of nature. Religious groups should play their role of educating their members on their significance and the role they have in Gods creation. It is only through this advocacy that the Kiambogo area can be rehabilitated from the current devastation and suffering.

A good gardener cares and cultivates his/her garden well and in the end he/she enjoys the fruits of his/her labour. On the other hand, if one fails to take good care of his/her garden it will produce nothing. Prophet Isaiah laments on a garden producing ‘thorns’⁶ instead. ‘Thorns’ is a metaphor of suffering that would occur to any human community that fails to protect and preserve the environment they were entrusted to by their creator. ‘Thorns’ represents, hunger, foods crisis, drought, abject poverty and other miseries. Mark you this is what is being experienced in Kiambogo region.

The study further realized that, efforts should be made to help the local residents identify their problems and their causes. This way, they could then be made to understand that solutions to their problems lay in their hands and they’re the only ones to solve these problems⁸. Kiambogo residents are now willing to join hand in fighting this vice through

⁴ This statement has become synonymous with Professor Wangari Maathai speeches in her countrywide and international environmental conservation campaigns. Her efforts won her annual peace prize from Nobel Peace Foundation

⁵ Mahatma Gandhi was against this axiom of ‘eye for an eye’, for him this will make the world full of blind people.

⁶ Isaiah chapter 5:2

the help of religious groups, CBOs, NGO's and any other people of good will. The responses from the sampled respondents shows that, the local residents have realized that, sometime back before they destroyed their immediate environment, they had no problems relating to food, water or droughts. However, since the forests were cleared, the situation has deteriorated drastically.

Figure 11, below shows that if the battle against environmental degradation is to be won, churches, NGOs, CBOs and schools have to be more involved in educating the locals on the importance of conserving their immediate environment. This would utilize the already growing self-awareness among the residents.

Fig11. Percentage responses of fifty (50) sampled respondents on the channels through which they acquired their knowledge about the impacts of their actions on the environment.

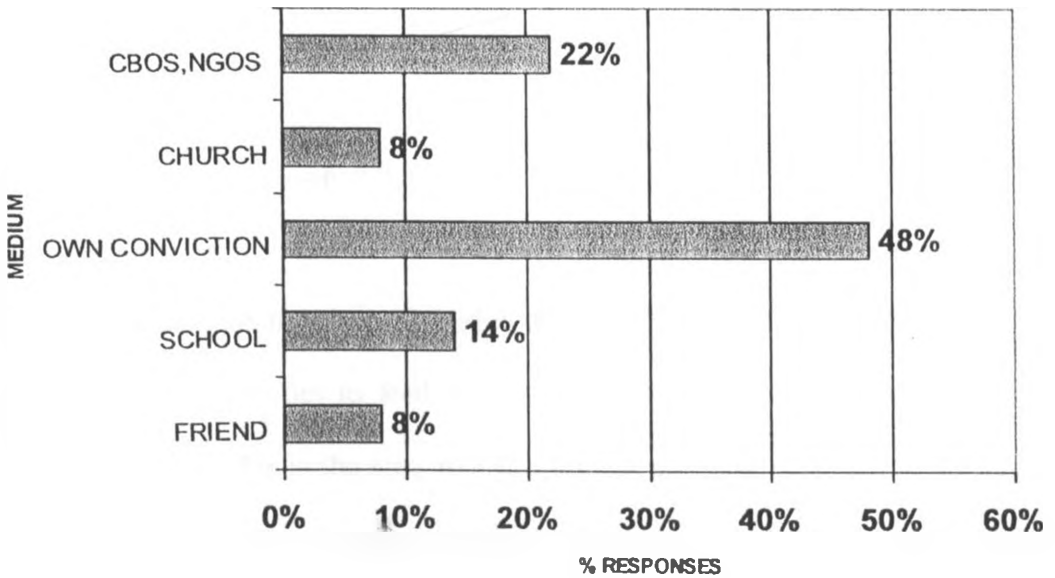


Fig11. Shows that 48% of sampled population had acquired the environmental knowledge through their own conviction. 22% got the idea from CBOs, NGOs. Schools had also been a vent of the dissemination of environmental education scooping 14%. Churches played a very insignificant role in creating awareness about environment conservation in Kiambogo area.

6.2.2 Tree planting/tree farming

The sampled respondents seem to suggest that, Kiambogo residents should be encouraged to engage in tree planting as an economic activity. Tree planting should not only be viewed as a way of preserving environment but as an economic activity as well, which can even bring greater rewards than some other types of farming.

The some respondents argued that, since urging residents to plant trees as conservation efforts seemed not to work in the past, the approach should change to make the local residents look at tree planting as an economic activity. Kiambogo residents being agriculturalist would be better placed in this endeavour as they have the skills of nurturing crops especially when they do it as a source of income.

However, the residents have complained in the past that, trees takes longer times to grow whereas they have families to feed, clothe and school fees to pay. Therefore, for this venture to be acceptable in the area, tree species that grow faster should be introduced in the area. (with a lifespan of approximately less than five years). Mr. Muchemi confirmed that, the plans to introduce a new species of Blue gum trees, by Green Belt Movement is

underway and the seedlings are already in the nurseries awaiting the April rain season to plant them. They are expected to mature within five years. This venture would be double throned, it would be a way of rehabilitating the environment while at the same time a source of income to the residents thus a poverty alleviation initiative.

Mr. Mucheru on the other hand insisted that, the initiative would be beneficial to the residents if the residents were enlightened on the environmental friendly ways of harvesting trees. One of these ways is to cut branches and tree trunk in a way that would leave the stump on the ground for more branches to sprout.

The residents should organise a fact finding tour to central province and see how agro-forestry have turned the region into a forest land with productive land despite the fact that the area have been occupied for over two centuries.

6.2.3 Environmental friendly farming techniques

The observation made by the study indicates that, residents of Kiambogo have been contributing greatly towards the destruction of environment by engaging on poor and unfriendly agricultural methods which impact negatively to the environment. These methods include overuse of their lands without leaving it fallow in order to regain its fertility. The sampled respondents lament that; the overuse of agricultural land is due to lack of alternative source of income other than the farming.

To counter this, Kiambogo residents can practice crop rotation by dividing their pieces of land into small portions that could be used rotational while leaving other pieces fallow for maximum agricultural production.

Further, it was observed that, cultivation along the slope without digging terraces or contour-ploughing, has led to massive soil erosion, thus carrying away the topsoil and its nutrients, making the soil unproductive.

In addition, Kiambogo residents lament on the introduction of hybrid seeds, which initially was seen as a blessing to the area as harvest increased considerably. However, the residents realized later that, these hybrid seeds could not naturally get adapted to the soil type and natural environment. The hybrid seeds depended on human interventions for maximization of production such as use of fertilisers and pest control.

Furthermore, the continued use of fertilizers destroyed the soil's capability to support any other naturally growing crop in Kiambogo. Fertilizer usage has also been uneconomical and unfavourable for Kiambogo residents who are poor. Residents lamented the undue burden of buying of fertilizer which has caused a lot of suffering among the residents since those who could not afford to buy fertilizer end up harvesting almost nothing.

The study also learned that, there is lack of agricultural extensions services in Kiambogo area. Those sampled by the study reported that, the government deploy agricultural

officers sporadically who cannot stick around for a month or so in the area. Most of the time Kiambogo residents lack extension services, which they urgently need.

Therefore, the views of sampled respondents, in order to reverse the effects caused by poor farming methods include that the government should permanently set up an agricultural extension office in the area. This office should be responsible for provision of advice on environmentally friendly way of farming for maximum agricultural production to the Kiambogo residents all year round. This should include among other things advice on; farm layouts and construction of cut off drains and artificial waterways in farmlands, gully controls measures such as diversions ditches, vegetation, wood/stone materials or gabions and proper and timely tillage methods⁹.

Moreover, Kiambogo residents being used to only one rainy season between March-June have only one crop season per year. This was seen to lead to wastage of agricultural space on the period before and after the major rain season. Those interviewed suggest that, the introduction of short-season crops could greatly increase the income of Kiambogo residents, for instance vegetables and fruits would guarantee them food, security and financial income. They could also practise irrigation if water distribution in the area is enhanced to avail water to all residents. This could compensate for the loss and lack of income experienced during uneven rainy season and during drought.

6.2.4 Alternative source of energy

Another area of concern in relation to the role of Kiambogo residents in conserving their immediate environment is the source of energy for domestic use. This research revealed that, Kiambogo residents use 100% wood fuel for domestic uses such as cooking and lighting. This have been facilitated by the availability of forest and poverty prevalence. This seems to be the case elsewhere in Africa, the wood fuel in Africa accounts for over 90% energy consumed and over 98% of this fuel is taken up by cooking in rural Kenya. Kiambogo region, being part of Kenyan rural is not an exception. Kiambogo residents have invaded forests in search of wood fuel leading to loss of forest cover. World bank estimates shows that, wood fuel demand by the year 2000 was to call for 19 million hectares of fuel wood plantation -that is 100 times more than it exists in Africa. The study revealed that nearly 13 million people were cutting firewood more rapidly than it was being renewed¹⁰.

Many respondents saw the introduction of other sources of energy as the only way of protecting the forest in Kiambogo region. However, this they said requires an intervention by the government or NGOs to initiate and subsidize the cost of acquiring these new sources of energy. Religious groups inputs I highly needed in this endeavour. Solar energy is seen as the best alternative due to its availability and affordability bearing in mind that Kiambogo residents live in the thin line of poverty. The study confirmed that, the enhancement of solar energy requires capital to build the solar “jikos”. There is need to fully fund the initial pilot project to test its viability in this area. This would in turn play a major role in convincing the residents that solar energy and “jikos” could

really substitute the only source of energy that is wood fuel in the area. It is only after the project's success in the eyes of Kiambogo residents could it be turned to a profit making venture as the residents would be induced to buy these "jikos" as a substitute of wood fuel.

Biogas is another project that is viable in this region since it requires very little capital or none at all-it only requires the availability of septic. There is much septic in Kiambogo region as residents uses pit latrines and have a lot of livestock, which can provide the needed input for biogas. However, the residents call for NGOs and other stakeholders to chip in and provide the technical know-how as the biogas technology lacks among the residents.

These sources of energy would be helpful to the residents not only in terms of cost and saving their environment but would also save them the hassles of trekking long distances deep in the forest in search of wood fuel¹¹.

The study identified the mushrooming of community-based organisations initiated by local residents themselves. There are also women groups in the area engaged in merry-go-round, religious groups could also play a major role in order to succeed in this initiative. It was revealed that, the most affected population segment in Kiambogo region is women as their social responsibilities and duties put them in direct contact with the environment. They are responsible for food production through farming, fetching firewood, fetching water and grazing their livestock. Thus women are prime candidates

for this project, as they would be more than willing to try these new sources so as to ease their burden in fetching firewood and conserve their immediate environment for better agricultural production. Involving the services of the above mentioned groups would help a great deal in rehabilitating environment in Kiambogo region.

6.2.5 Planting drought resistant crops.

This study revealed that, there is escalating and wide spread adverse climatical conditions, characterised by unpredictable rainy seasons and constant drought. This has led to the constant failure of beans and hybrid crop of maize. Harvest seasons have now been cut short when unpredicted dry periods strike in the middle of the season. This has led to small-scale famine in the area. For instance, in 1993, the maize crop weathered at the near harvest growth stage. This was witness again in 1997, 2000 and in the year 2004. Therefore the residents see the introduction of drought resistance crop like indigenous yams, cassava and garden peas as a great boost to the food security in Kiambogo ¹².

The sampled respondents also suggested that, the residents could switch to short-season crops that mature after short period to utilize short rainy season of August-September and November-December. These short-seasoned crops would fill the food supply gap created by the disruption of long-season crops by the dry spell. These crops include potatoes, vegetables, carrots and the short life span maize breed 611('katumani'). This intervention would assure the area residents of a constant supply of food and subsistence income from the sale of any surplus produce.

6.2.6 Enhance water harvesting techniques

Another major problem that was identified by this study as caused by environmental degradation is water shortage. The level of water in wells and springs has reduced drastically. Some of the springs have completely dried up while others provide only less than half of what they used to produce. Drastic drop in rainfall in the area have hampered the rainwater harvesting in Kiambogo.

Sampled responses by this study seem to suggest an enlargement of the water harvesting facilities to tap all available water from the rain. Every household should build water tanks big enough to hold as much water from the rain as possible. Building of household dams to tap the running rainwater, which could be used for livestock, was suggested. The effort of Catholic Church to initiate rainwater-harvesting project through the construction of corrugated iron sheet rooftops and tanks was praised as a step in the right direction.

6.2.7 Embracing African traditional heritage

Old men and women are crying foul of the Kiambogo people abandoning their old ways and traditional beliefs. According to Mr. Muchina an elder, the reason why people are suffering is because they interfered with traditional sacred areas and shrines. He was particularly concerned with the way people invaded the Eburu forest and cut trees near Mirangi spring, which according to him is a sacred place. He therefore urges Kiambogo people to return to traditional way of life and embrace African worldview. This conforms to what Ongong'a said '

“A theological interpretation of universe justifies taboos and territorial cults among indigenous Africans intended to protect and contribute to the use and preservation of the environment. Some taboos restrict people to hunt or cut trees in certain areas. Pools and wells were viewed with awe ensuring constant supply of water and leave forest intact. They also made sure that natural environment was neither carelessly used nor exploited¹³”.

Kiambogo people are not careful with how they use their natural resources; they view nature as an object of exploitation. They need to be re-taught about the sacredness of nature and that the human race is in great danger if the environment is not preserved.

Kiambogo residents should be encouraged to borrow a leaf from African traditional worldview where environment is seen as nature in providence and source of life. Therefore, destroying nature means destroying human life.

River and other natural phenomenon are always seen as sources of life in African traditional heritage¹⁴. The fact that river Kirimu is dead is a clear precursor of the imminent extinction of Kiambogo community if something very urgent is not done to arrest the environmental situation in the area.

6.3 Various community based initiatives currently going on in Kiambogo area.

a) Marketing organisation for agricultural produce.

Headed by aspiring councillor Mr. Mucheru, the organisation identifies lack of proper market for agricultural produce coupled with exploitation by the middlemen as one of the problem in Kiambogo area. According to Mr. Mucheru, a good market for agricultural

produce in Kiambogo region could make the little harvested of great assistance in alleviating poverty among the local residents. But this is not the case; the government parastatals for example, K.G.G.C.U, and K.C.C closed their stores in Kiambogo over fifteen years ago. This left the Kiambogo residents under the mercy of middlemen who buy maize and beans at throw-away prices. This makes the Kiambogo residents not to break-even their gain versus the cost of agricultural production. This had gone on and on for many years now. The closure of K.C.C and P.B.K in Kiambogo region also caused lots of losses to the residents who relied on milk and pyrethrum as a source monetary income.

The organisation is now registering members who are supposed to pool their farm produce together and look for a common market within and outside Nakuru district. By doing so, they hope to sell at better prices hence improving the living standard of their members. However, the poverty prevalence is a major challenge to this group. Most of Kiambogo residents are unwilling to join this organisation as they always have pressing needs which prevent them from waiting for a good market and end up selling their produce to these exploitative middlemen. Mr. Mucheru believes that if the local residents could get alternative sources of income, they can be able to have a bargaining power over their harvests. However, as far as local residents continue to depend entirely on agriculture, the middlemen will continue to exploit them.

b) Eburu Forest Conservancy Group.

This organisation was founded by Mr. Muchemi, former Kiambogo Inter Aid Kenya water project manager in the year 2005. To him, the prevailing drought and famine is caused by the invasion and destruction of forestland by the local residents in search of firewood and building materials. This has been going on for decades, causing a lot of destruction to the forest cover. The organisation blames the local authorities for colluding with unscrupulous traders to harvest indigenous trees like cedar for sale. Therefore, the organisation plans to liaise with local authorities and residents to protect the remaining Eburu forest, which harbours Mirangi water catchment area.

According to Mr. Muchemi, the lack of enough trees in private farms is due to lack of seedlings during the rainy seasons. This is because the prime time of preparing the seedlings is during dry spell when there is problem of water. This makes it impossible for local residents to put up their own tree nurseries. So, the group have started tree nurseries during this dry spell of December-March period in order to sell the seedlings to local residents during the April-June rainy season. The group plans to be doing this every year until the area residents plant enough trees. The group now is calling for Forestry department and NGOs that deals with environmental issues to supply them with tree seeds and sponsorship to oversee the group objectives.

c) Light Sacco Society

The Light Sacco Society was initiated by Africa Inland Church (A.I.C) church members in November 2005. Its main objective was to alleviate the problem of fuel that had

riddled the residents since the time they settled in this region. Willing local residents are supposed to register with ksh.5, 000 each to become a member. According to the Sacco chairman, Mr. Mutua, the main reason why any local residents would invade the forest even after getting all other things was due to lack of fuel. Kiambogo residents are poor; hence they cannot afford gasoline or petroleum for their domestic fuel usage. Therefore, they turn to cheap and available source, which are trees in form of firewood. These had contributed to desertification in the area causing adverse changes in climate and related droughts.

The Sacco intended to start a solar station where their members would be recharging their batteries for use in their homes for lighting and power for their electronic devices. The same centre would also serve as a gas refilling station where the locals would at reasonable and affordable subsidized prices, be refilling their gas cylinders. The group registration is still going on and so far two hundred members have registered and have paid their full registration fee of ksh. 5,000. The group targets five hundred initial members for the project to start. Mr. Mutua is optimistic that the group will start the project before the end of this year (2005) when they achieve the initial number of members.

However, those interviewed accuse the group of being made up of the rich and well up in the society not concerned with the poor mass. Going by the statistics, majority of Kiambogo residents are poor and they can hardly raise this amount of money. They cannot afford to meet the cost of refilling and recharging their batteries despite the

subsidy. Therefore, the group should explore other alternative sources of energy that are cheap and affordable to the local residents if it intends to make any impacts in Kiambogo.

6.4 Constituency Development Fund (C.D.F)

The above suggestions on how the Kiambogo residents can improve and conserve their immediate environment are viable if applied with zeal. The area stand advantage since the current government have introduced a revolving development fund for each constituency. Kiambogo residents are entitled and beneficiary of this fund. The parliament act on the usage of this fund requires a community to come up with pressing project to be funded each year. The government can therefore set a side part of this fund in Naivasha constituency for environmental management programmes. This can be done through funding CBOs, NGOs and Churches that are engaging on environmental conservation in Kiambogo area. The organisations that will benefit from this funding should among other things use the fund to embark on comprehensive environmental campaign such as afforestation, reforestation, soil conservation, agro- forestry projects and environmental education.

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3. Ibid. pg 21
4. Ibid. pg 26
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CHAPTER SEVEN

7.0 CONCLUSION AND RECOMMENDATIONS

7.1 Conclusion

The findings that emanate from this study clearly show a dialectical relationship between environmental conditions and sustainable development. This is more so particularly in communities whose main economic activity is agriculture. This is because agricultural output depends heavily on environmental conditions, which define the climatic conditions in an area.

In Kiambogo, back in the days when forest cover was not much interfered with, there was abundant rainfall and favourable temperature. This provided favourable environment for a good harvest of maize, pyrethrum and other staple food grown in the region for example potatoes, beans, peas and dairy farming output. The change of climate in Kiambogo area was attributed to the wanton destruction of environment, which has gone on for over two decades.

Therefore, proper environmental management would see this area's agricultural fortune turn around, from the current devastation, famine, and drought to prosperity with the region enjoying a good harvest. This in turn would translate to sustainable economic development.

The proposal by Obeng to involve clergies in fight against environmental degradation is worthwhile. The 'creation awareness'¹ environmental education proposed by Obeng,

would be appropriate in educating Kiambogo residents on their religious role of preserving and protecting the environment. This would help in instilling moral responsibility on the Kiambogo residents towards nature hence conserve environment.

In addition, Kiambogo residents should be encouraged to borrow a leaf from African traditional worldview where environment is seen as nature in providence and source of life. According to African traditional heritage, destroying nature means destroying human life.

Obviously, it is clear that Inter Aid Kenya and the Roman Catholic Church development initiatives were frustrated by lack of a favourable environmental condition. The outcome of their developmental programs relied heavily on favourable sustained environmental conditions, which lacked in the area. Study on these two organisations should that there is so much to be done on the fight against environmental degradation so as to create a favourable ground for economic development.

The study reveals that, environmental conservation initiatives can be effective if the stakeholders target the Small Christian Communities in the area. The way in which Wazee Small Christian Community coordinated its project activities is a clear indication that, the fight against environmental degradation could be won in Kiambogo area by involving these groups in this endeavour.

The continued environmental degradation is blamed on the prevalence of poverty in Kiambogo area. Conversely, poverty among Kiambogo residents is responsible for continued environmental degradation in the area. The residents are faced with the dichotomy of choosing between meeting their daily basic needs and conserving their immediate environment². The environment provides them with cheap firewood, game meat, building materials and water. This makes it very hard to introduce a successful environmental conservation programme in the area. As Gitau puts it, the poor would do anything and would go to any lengths to survive even if it means destroying their immediate environment, which they rely on³.

In the face of the above reality, government agencies through C.D.F fund are invited to initiate programs that may help to alleviate poverty in this region. This will create favourable conditions for proper sustained environmental conservation programmes. They should device other developmental programs that can withstand the adverse climatic conditions prevailing in Kiambogo area. These may include among other things, introduction of drought resistant crops, irrigation schemes and introduction of trees of short lifespan so that the population can have immediate rewards on their efforts of planting trees, which would encourage them in conserving the environment.

The damage has been done; big chunks of forestland have so far been cleared. There is urgent need to embark on environmental rehabilitation to protect the remaining forests. The residents and stakeholders should embark on tree planting through agro-forestry, tree farming and protection of the remaining forest and water-catchment's areas.

Consequently, lack of alternative sources of income among Kiambogo residents is a major drawback in the fight against environmental degradation. The over dependency on agriculture have made the environmental programmes almost impossible to implement in this area. This is because agriculture is vulnerable to environmental conditions and is riddled with many risks and uncertainty in terms of investments. The small pieces of land given to the residents coupled with the increase in population have added more pressure on the soil, which is over-used making it too stressed to yield much harvest.

The traditional ways of farming where land was left fallow to regain its fertility need to be revived so that the soil can be more productive. Nevertheless, you cannot tell poor persons who entirely depend on this piece of land to leave it for sometimes without showing them any alternative source of their daily bread⁴.

Efforts and energy should be directed on what the Kiambogo people can do to sustain themselves without depending entirely and directly on environment but not on what the environment can provide for sustainable development⁵. This will go along way to include, business activities, and other investments such as poultry farming, agro forestry and eco-tourism.

A comprehensive environmental rehabilitation can only be realized if the Kiambogo people are made to realize and believe that they have both the skills and the resources to turn around the deplorable situations caused by poverty and environmental degradation in

the area. They should be made to understand that; they also have the power to come out of the vicious cycle of poverty caused by environmental degradation.

There is hope in this endeavour since Kiambogo residents have come to realize at their own personal level, the impacts of their activities on their immediate environment. Under these circumstances then, the population is expected to be willing to cooperate towards achieving a sustained environmental conservation hence sustained economic development.

7.2. Recommendations

First, the study has revealed that it is very difficult to establish a sustained environmental programme in poor communities whose population depends on their immediate environment for survival. Therefore, there is need to explore alternative sources of income and that of energy to these communities so as to reduce the pressure exacted on the immediate environment in efforts to salvage a living. This includes possibilities of entrepreneurship, poultry farming, agro forestry, eco and cultural tourism, and solar energy and biogas technologies as alternative sources of energy.

Secondly, churches and religious groups in the region should embark on what Obeng call 'creative awareness' environmental campaign. This will demand theologians in the area to sensitise the locals on the religious duties of mankind towards God's created world..

The campaign should be action oriented. It should bring on board, Government agencies, NGOs and CBOs, through a comprehensive environmental programme that would put

more stress on reforestation, afforestation, agro forestry and land reclamation. This way, communities will be able to salvage their destroyed environment as well as conserve the existing one.

Thirdly, Government agencies, NGOs and other environment stakeholders should apply community participatory methods in their development and environmental initiatives. This means incorporating community based organizations. Bringing the community intended to be the beneficiary of the project on board would be important since the community would feel as being part and parcel of the solution to the problems affecting them. This project has identified the small Christian community as a viable target for this venture. Small Christian Communities are religious based and constituted by local residents with a mission to empower members spiritually, physically and socially.

Finally, the government should set aside a percentage of Constituency Development Fund (C.D.F), in every constituency for environmental conservation programmes. This can be achieved by making this fund available to religious groups, NGOs, CBOs and women groups on the ground for tree planting and other environmental rehabilitation programmes.

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APPENDICES

Appendix I: List of Informants

1. Dr. Carl Raymond, a forest expert with UNDP on 4th November 2005, 12.00pm at Stanley Hotel, Nairobi.
2. Mrs. Njuguna a retired teacher of Muthaiti primary school and Catholic women leader, Kiptangwanyi parish on 9th December 2005, 7.00 pm at her home in Ndonyo-Eburu village.
3. Mr. Mutahi, Community Development Assistant (CDA) Kiambogo location, on 12th December 2005, 11.30 a.m. at his residence in Kiungururia Settlement Scheme.
4. Mr. Mutua, Chairman, Light Sacco, on 12th December, 2005 4.00pm at his shop in Kiambogo trading centre.
5. Mr. Macharia, former administration manager with ADC on 16th December 2005, 2.00pm at his residence in Kiungururia settlement scheme, Kiambogo.
6. Charcoal burner in Sururu forest who wished his name to be withheld on 28th December, 2005, 1.30pm in Sururu forest.
7. Mr. Sarikoki, Kiambogo Sub-Chief, on January 2nd, 2006 7.30am at his office in Kiambogo trading centre.
8. Mr. Nyandika, a village elder, Kanorero village on 2nd January, 2006, 9.00am at Kiambogo Chief's office.
9. Mr. Godfrey Kinyanjui, a village elder, Ngecha village on 4th January, 2006, 1.00pm at his residence in Ngecha village.
10. Mr. Kinyua, former Inter Aid Kenya operations officer in Kiambogo on January 5th 2006, 2:00 pm at his home in Ndonyo Eburu village.

11. Mr. Muchemi, former Inter Aid Kenya water project manager in Kiambogo and Chairman of Eburu Conservancy on January 17th 2006, 9.00 am at Eburu Conservancy tree nursery project, Gituamba village.
12. Mr. Mucheru, Aspiring councillor and Chairman of Marketing organisation for agricultural produce on January 17th 2006, 1.00 pm at his residence in Gituamba village.
13. Nyamwathi, housewife and farmer on 10th February, 2006, 10.00pm at her residence in Kongasis village.
14. Mr. Njuguna Kabene, former secretary, Wazee Group on February 11th 2006, 1.00 pm at his home in Gituamba village.
15. Father George Munyaka, The current Kiptangwanyi Parish Priest on February 12th, 2006, 11.00am at Parish offices, Kiptangwanyi.
16. Mr. Muchina, an elder and traditionalist on 13th February, 2006, 10.00am at his residence in Tangi tano village.
17. Mrs. Gatimu, teacher at Muthaiti Primary on 13th February, 2006, 3.00pm at her residence in Gituamba village.
18. Mr. Mwiti, former Surveyor of Kiambogo on 14th February, 2006, 2.30pm at his Posho mill business in Ndonyo Eburu village.

Appendix ii: Sample General Respondents' questionnaire

This questionnaire target Kiambogo residents in general

Part I: General information

Name: _____

Occupation: _____

Level of education: _____

Part II: information about the topic

1. How long have lived in Kiambogo area? _____

Less than five (5) years More than five (5) years

More than ten (10) Years

2. How would you describe agricultural production in the areas near forests and that afar?

3. How can you describe the agricultural production nowadays compared to some years back?

Has improved Declined Remain the same

Become worse Indifferent

4. With these trends, what is your prediction of agricultural production in future?

Decline Will improve Get worse same indifferent

5. Do you think there is any link between the decline in agricultural production and clearing of the forest cover in Kiambogo area? _____

6. What do you think is the main source of economic development in Kiambogo area? _____

7. What according to you is the main cause of environmental degradation in Kiambogo?

(i) _____

(ii) _____

(iii) _____

(iv) _____

(v) _____

7. Do you think there is a relationship between the causes of environmental degradation and the problems you are facing?

Yes

No

Explain _____

8. Have you ever been involved in cutting down of trees for any purpose?

Yes

No

9. If yes, what was the purpose? _____

10. If no, what might be the reason? _____

11. Do you believe that the prevailing drought and change of climate have anything to do with the clearing of our indigenous forest?

Yes

No

If yes above how did you acquire this conviction?

From a friend

From A church

Own conviction

Social organization

From school

12. Do you, in any way benefit from the environmental initiatives by the Catholic Church or Inter Aid Kenya?

Yes

No

If yes how? _____

13. Are these initiatives helping the community to be economically independent?

14. How do the above initiatives relate to the economic developments in Kiambogo?

15. Do you know anybody who participates in illegal logging or charcoal burning?

 Yes No

What reasons do they give for engaging in these activities?

From their answers do you think they are justified?

 Yes No

16. In your own words, what are the effects of environmental degradation as observed in Kiambogo area?

17. Tick yes or no

Reducing poverty in Kiambogo area involves conserving the environment.

 Yes No

Conserving environment involves reducing poverty levels in Kiambogo

 Yes No

18. What do you think the local community should do to conserve environment?

Appendix iii: Sample Interview Schedule for Teachers and Social workers

This interview schedule intends to collect information from teachers from the local primary schools, secondary schools and the social workers in the area.

Part I: General information

Name _____
Location: _____
Religion: _____
Profession: _____

Part II: information about the topic

1. Do you live near the forest?
2. If yes or no above how would you describe agricultural production in your area?
Very good Has improved Declined Remained the same
Became worse
3. With this trends what is your prediction of agricultural production in Kiambogo area in future?
Increase Decline Will improve Get worse
Remain the same
4. Apart from your occupation, do you engage in farming? _____
5. What are your views about environmental conservation in the face of the prevailing drought and frequent famine in the area? _____
6. Do you enlighten the locals about the importance of environmental conservation?
7. If yes how do you accomplish this? _____
8. According to you, what are the effects of environmental degradation?
(i). to agriculture production _____
(ii). to an individual or community _____
9. Do you have any social development programs that your institution is engaged in currently in Kiambogo? _____
If yes describe it _____

10. Does the prevailing environmental degradation stagnate the economic development of Kiambogo area? _____
11. In your own words, how can you describe the agricultural production in farms around forest area and those far from the forest?

12. What are your suggestions to the way forward in solving problems affecting the residents of Kiambogo?

13. What do you think is the overall goal of a well-established environmental conservation program? _____
14. Do you think prevalence of poverty in Kiambogo have contributed to deforestation? Or has environmental degradation contributed to the increase of poverty levels in Kiambogo area? _____
15. What do you think the local residents should do to help in conserving the environment?

Appendix iv. Sample Interview Schedule for Chiefs

This interview schedule is intended to collect information from the chief of Kiambogo location.

Part I: General information

Name: _____
Location: _____

Part II: information about the topic

1. For how long have you been a chief in this area?

2. Do you live near the forest? _____
3. If yes or no above how would you describe agricultural production in your area?
Very good Has improved Declined Remained the same
Became worse
4. With these trends, what is your prediction of agricultural production in Kiambogo area in future?
increase Decline Will improve Get worse
Remain the same
5. What do you have to say about logging and charcoal burning in the forest?

6. The government issued a ban against logging and charcoal burning, what is your office doing to effect this ban? _____
7. How effective is your action? _____
8. Why do you think the destruction of forest is going on despite the government's ban?

9. As a leader, what do you think is the source of the social and economical hardship the locals in the area are experiencing? _____
10. According to you, how will the effecting of the ban on forest invasion help in alleviating local problems? _____

11. How many individual have you arrested over charcoal burning and logging?
12. Out of these how many have been arraigned in a court of law to face prosecution?
13. What are some of the challenges you face as you try to effect the ban on logging and charcoal burning? _____
14. Are these challenges in any way related to the economical and social problems experienced by locals? Explain _____
15. Do you perceive that there is any relationship between the prevailing poverty and environmental degradation? _____
16. What do you think should local do to help in conserving the environment? _____

Appendix v. Sample Interview schedule for area councillor

This interview schedule is intended to assess the solicit information from area councillor about the study topic.

Part I: General information

Name : _____
Ward: _____

Part II: information about the topic

1. Do you live near the forest?
2. If yes or no above how would you describe agricultural production in your area?
Very good Has improved Declined Remained the same
Became worse
3. With this trends what is your prediction of agricultural production in Kiambogo area in future?
increase Decline Will improve Get worse
Remain the same
4. It is a custom for politicians to identify problems facing the electorates in which they seek votes on the pledges to help them overcome them. What were the problems you identified in this area? _____
5. Are these problems new or they have been there? _____
6. What do you think is the cause of these problems? _____
7. Do you have any program as pertains to environmental conservation? _____
8. If yes what are you doing in your capacity to see forests and water catchment areas are conserved. _____
9. Have you ever raised your concern in a public gathering about the ongoing environmental degradation? _____
10. What was the response from the audience? _____
11. Do you count the religious groups and civic organizations in your ward as possible medium to help you achieve your election pledges? _____

12. If yes how? And why? _____
13. In many cases NGOs and religion-based organization are always willing to help in any social undertaking but in most cases run short of fund. In your capacity have any such organization approached you? What did you do to help them help the local community? _____
14. According to you is there any relationship between, poverty and environmental degradation in your ward? _____
15. Can you give your predecessors a credit for any developmental initiative? Which one was it? _____
16. What in your opinion can the local residents do to conserve environment? _____

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