ELCT NORTHERN DIOCESE

PROPOSAL FOR AN ENVIRONMENTAL CONSERVATION PROGRAMME IN KILIMANJARO REGION, TANZANIA.

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1.0 EXECUTIVE SUMMARY

Kilimanjaro Region, one of the twenty such administrative sub-divisions making Tanzania mainland is located at the north eastern corner of Tanzania. The region occupies the slopes of Mount Kilimanjaro whose peak stands at 5,895 meters Above Sea Level, making it the highest in Africa. The snow capped mountain in the tropics, just to the south of the equator is an international tourist attraction, hence a valuable asset to the region and the country.

Geographically, the region combines features of coastal lowlands and alpine configuration, both of which result in a variety of soils, climate, and vegetation and consequently a differentiated pattern of economic activities. Kilimanjaro Region, with a population of 1.4 million, has an area of 13,309 km^2, with a population density of 104 people per km^2, compared with the national average of 37 people per km^2. The highlands of Kilimanjaro, however, where most farming takes place, have a population density of over 350 people per km^2. The region has four ecological zones, namely: the mountain peaks, the highlands, the midlands and the lowland plains. Each of these zones has unique ecological characteristics which determine patterns of socio-economic activities and investment opportunities. These characteristics are as shown in Table 1.

There are two rainy seasons, the major one extending from March to May and a minor one between October and December. The pattern of economic activity is very much influenced by the amount of rain and actual distribution of the same. In many areas of Kilimanjaro, rainfall has to be supplemented with irrigation.

The mainstay of Kilimanjaro economy is agriculture. The main crops are coffee, wheat, sugar cane, cotton, cardamom and sunflower as cash crops. The major food crops are maize, bananas, beans, fruits, sorghum, cassava and paddy. Total cultivated land is about 401,000 ha. (2000-2001). With a dairy cattle herd of 123,000, Kilimanjaro is leading the nation in the number of high grade dairy cattle. In addition to these there are about 420,000 indigenous beef

cattle, and 700,000 small animals. In 2000 crop farming contributed 77.2 % of the output agricultural sector while livestock contributed 16.2 %.

Income per capita in Kilimanjaro region rose from U$ 108 in 1994 to U$ 194 in 2000. While in 1988, Kilimanjaro ranked 3rd in per capita income among 20 regions, in year 2000 it ranked 7th. This is one of the indicators of slow rise in incomes of the people.

During the past four decades, Kilimanjaro region has witnessed degradation of its environment, particularly its forests and landscape due largely to poverty. Deforestation has contributed to climate change through rising "stock" of greenhouse gases including greenhouse gases carbon dioxide methane, nitrous oxide among others. These gases have the ability to retain atmospheric heat, and also destroy Earth's high-altitude ozone layer, the protective layer of gases that shields Earth from damaging ultraviolet radiation. Considering that Kilimanjaro exists in a national and global environment, it has to grapple with both its own atmospheric pollution and that by other, particularly, industrialized countries. Drought during previously usually wet seasons is a common phenomenon. This has led to poor harvests, famine and rising poverty.

This undesirable trend of environmental destruction must be reversed, with each country and region having a contribution to make. This project is Kilimanjaro's effort to put right what has gone wrong and convert into an environment conserving region. Massive tree planting for example will reduce atmospheric carbon dioxide particularly if the rest of the country and countries in the international community take measures which will control emission of gases into the atmosphere.

The project which is estimated to cost USD 2.5 Million will plant at the minimum 8.5 million trees during the plan period, across the region. A department of the environment will be introduced into the structure of the Church in the Diocese to implement the project.

2.0 INTRODUCTION

2.1 Kilimanjaro Region, one of the twenty such administrative sub-divisions making Tanzania mainland is located at the north eastern corner of Tanzania. The region occupies the slopes of Mount Kilimanjaro whose peak stands at 5,895 meters Above Sea Level, making it the highest in Africa. The

snow capped mountain in the tropics, just to the south of the equator is an international tourist attraction, hence a valuable asset to the region and the country.

Kilimanjaro region has a unique location. At this location vis a vis the rest of the country, the region has every chance of being marginalized as a far off remote region. Closer look at the region places it at the center of a unique **socio – economic –geographical region**, extending as far as and including Tanga, Mombasa, Nairobi, Arusha and Manyara. The people of Kilimanjaro are close relatives of the people of this extended region. Their culture is a unique blend of cultures of the entire region. Geographically, the region combines features of coastal lowlands and alpine configuration, both of which result in a variety of soils, climate, and vegetation and consequently a differentiated pattern of economic activities. Kilimanjaro Region, with a population of 1.4 million, has an area of 13,309 km^2, with a population density of 104 people per km^2, compared with the national average of 37 people per km^2. The highlands of Kilimanjaro, however, where most farming takes place, have a population density of over 350 people per km^2. The region has four ecological zones, namely: the mountain peaks, the highlands, the midlands and the lowland plains. Each of these zones has unique ecological characteristics which determine patterns of socio-economic activities and investment opportunities. These characteristics are as shown in Table 1.

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Table 1: Kilimanjaro Agro-Ecological Zones.

ZONE	ALTITUDE RANGE METRES	DOMINANT SOILS	RAINFALL mm	TEMPERATURE 0^C	POTENTIAL; ECONOMIC ACTIVITIES
Kilimanjaro Mountain Peaks	1800-5895	Volcanic	2000+	Below 15	Tourism Timber Forest products, NTFP
Highlands	1100-1800	Volcanic	1250-2000	15-20	Tourism, temperate crops, fruits, vegetables Fodder, dairy and, NTFP
Intermediate Zone	900-1100	Moderately Fertile Soils	900-1250	20-30	coffee, bananas cereals and beans Livestock, NTFP, Folder
Lowlands Plains	Up to 900	Variable Fertile Soils	700-900	Above 30	Variety of tropical Crops, beef, goats, Fishery, NTFP.

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In terms of Human Development, Kilimanjaro's Human Development Index (HDI) of 0.603 gave Kilimanjaro a ranking second to Dar es Salaam whose HDI is 0.734. The national average is 0.482. This index takes into account life expectancy, literacy, primary school enrollment, education and economic expenditure. However there is a paradox to the apparently high HDI. This is shown by the low economic expenditure index of 0.327. We can safely conclude that the relatively good quality of life is a result of past investment

and the resultant good infrastructure. Persistence of the current situation will soon see the quality of life drop drastically off that of income.

3.0 The Global Environment

3.1 Definitions

Environment is the sum total of all external factors that affect an organism. They may be other living organisms [biotic factors] or non-living variables [abiotic factors] like temperature, rainfall, day length, wind and ocean currents. Biotic and abiotic factors interact to form the ecosystem. Changes, however minute in any one factor in an ecosystem can influence success of a particular plant or animal specie in its environment.

Organisms and their environment constantly interact and both are changed by this interaction. Like all other living creatures, humans have clearly changed their environment and have done so generally on a grander scale than have all other species. Some of these human-induced changes such as destruction of the world's tropical rain forests to create farms or grazing lands have led to altered climate patterns. In turn, altered climate patterns have changed the way in which animals and plants are distributed in different ecosystems.

Climate and climate change

The abiotic factors of temperature, rainfall, day length, and ocean currents carry the weather and climate dimension in the ecosystem. The environment therefore delivers the climate of an area.

Climate is the long term effects of the sun's radiation on the rotating earth's varied surface and atmosphere. It is made up of averages of annual or seasonal temperatures and precipitation. Land and sea vary and react in different ways to the dynamic atmosphere. Climate is a synthesis of weather patterns which are day-by-day temperature and precipitation variations in a specified area.

Climate has profound effects on vegetation and animal life, including humans. It plays statistically significant roles in many physiological processes, from conception and growth to health and disease. Humans, in turn, can affect climate through the alteration of the earth's surface and the introduction of pollutants and chemicals such as carbon dioxide into the atmosphere.

3.2 Climate change is principally a consequence of global warming. Global Warming involves a rise in the average temperature of the atmosphere, oceans, and landmasses of Earth. The planet has warmed (and cooled) many times during the 4.65 billion years of its history. At present Earth appears to be facing a rapid warming, which most scientists believe results, at least in part, from human activities. The chief cause of this warming is thought to be the burning of fossil fuels, such as coal, oil, and natural gas, which releases into the atmosphere carbon dioxide and other substances known as greenhouse gases. As the atmosphere becomes richer in these gases, it becomes a better insulator, retaining more of the heat provided to the planet by the Sun.

The average surface temperature of Earth is about 15°C (59°F). Over the last century, this average has risen by about 0.6 Celsius degree (1 Fahrenheit degree). Scientists predict further warming of 1.4 to 5.8 Celsius degrees (2.5 to 10.4 Fahrenheit degrees) by the year 2100. This temperature rise is expected to melt polar ice caps and glaciers as well as warm the oceans, all of which will expand ocean volume and raise sea level by an estimated 9 to 100 cm (4 to 40 in), flooding some coastal regions and even entire islands. Some regions in warmer climates will receive more rainfall than before, but soils will dry out faster between storms. This soil desiccation may damage food crops, disrupting food supplies in some parts of the world. Plant and animal species will shift their ranges toward the poles or to higher elevations seeking cooler temperatures, and species that cannot do so may become extinct. The potential consequences of global warming are so great that many of the world's leading scientists have called for international cooperation and immediate action to counteract the problem.

The energy that lights and warms Earth comes from the Sun. Most of the energy that floods onto our planet is short-wave radiation, including visible light. When this energy strikes the surface of Earth, the energy changes from light to heat and warms Earth. Earth's surface, in turn, releases some of this heat as long-wave infrared radiation.

Much of this long-wave infrared radiation makes it all the way back out to space, but a portion remains trapped in Earth's atmosphere. Certain gases in the atmosphere, including water vapor, carbon dioxide, and methane, provide the trap. Absorbing and reflecting infrared waves radiated by Earth, these gases conserve heat as the glass in a greenhouse does and are thus known as greenhouse gases. As the concentration of these greenhouse gases in the

atmosphere increases, more heat energy remains trapped below. All life on Earth relies on this greenhouse effect—without it, the planet would be colder by about 33 Celsius degrees (59 Fahrenheit degrees), and ice would cover Earth from pole to pole. However, a growing excess of greenhouse gases in Earth's atmosphere threatens to tip the balance in the other direction—toward continual warming.

3.3 Greenhouse Gases

Greenhouse gases occur naturally in the environment and also result from human activities. By far the most abundant greenhouse gas is **water vapor**, which reaches the atmosphere through evaporation from oceans, lakes, and rivers.

Carbon dioxide is the next most abundant greenhouse gas. It flows into the atmosphere from many natural processes, such as volcanic eruptions; the respiration of animals, which breathe in oxygen and exhale carbon dioxide; and the burning or decay of organic matter, such as plants. Carbon dioxide leaves the atmosphere when it is absorbed into ocean water and through the photosynthesis of plants, especially trees. Photosynthesis breaks up carbon dioxide, releasing oxygen into the atmosphere and incorporating the carbon into new plant tissue.

Humans escalate the amount of carbon dioxide released to the atmosphere when they burn fossil fuels, solid wastes, and wood and wood products to heat buildings, drive vehicles, and generate electricity. At the same time, the number of trees available to absorb carbon dioxide through photosynthesis has been greatly reduced by deforestation, the long-term destruction of forests by indiscriminate cutting of trees for lumber or to clear land for agricultural activities.

Ultimately, the oceans and other natural processes absorb excess carbon dioxide in the atmosphere. However, human activities have caused carbon dioxide to be released to the atmosphere at rates much faster than that at which Earth's natural processes can cycle this gas. In 1750 there were about 281 molecules of carbon dioxide per million molecules of air (abbreviated as parts per million, or ppm). Today atmospheric carbon dioxide concentrations are 368 ppm, which reflects a 31 percent increase. Atmospheric carbon dioxide concentration increases by about 1.5 ppm per year. If current predictions prove accurate, by the year 2100 carbon dioxide will reach concentrations of more than 540 to 970 ppm. At the highest estimation, this

concentration would be triple the levels prior to the Industrial Revolution, the widespread replacement of human labor by machines that began in Britain in the mid-18th century and soon spread to other parts of Europe and to the United States.

Industrial Smokestacks Carbon dioxide, sulfur dioxide, and other types of contaminants pouring from industrial smokestacks contribute largely to the world's atmospheric pollution. Carbon dioxide contributes significantly to global warming, while sulfur dioxide emissions are the principal cause of acid rain in the northeastern United States.Oxford Scientific Films/Kim Westerskov

Methane is an even more effective insulator, trapping over 20 times more heat than does the same amount of carbon dioxide. Methane is emitted during the production and transport of coal, natural gas, and oil. Methane also comes from rotting organic waste in landfills, and it is released from certain animals, especially cows, as a byproduct of digestion. Since the beginning of the Industrial Revolution in the mid-1700s, the amount of methane in the atmosphere has more than doubled.

Nitrous oxide is a powerful insulating gas released primarily by burning fossil fuels and by plowing farm soils. Nitrous oxide traps about 300 times more heat than does the same amount of carbon dioxide. The concentration of nitrous oxide in the atmosphere has increased 17 percent over preindustrial levels.

In addition, greenhouse gases are produced in many manufacturing processes. Perfluorinated compounds result from the smelting of aluminum. Hydrofluorocarbons form during the manufacture of many products, including the foams used in insulation, furniture, and car seats. Refrigerators built in some developing nations still use chlorofluorocarbons as coolants. In addition to their ability to retain atmospheric heat, some of these synthetic chemicals also destroy Earth's high-altitude ozone layer, the protective layer of gases that shields Earth from damaging ultraviolet radiation. For most of the 20th century these chemicals have been accumulating in the atmosphere at unprecedented rates. But since 1995, in response to regulations enforced by the Montréal Protocol on Substances that Deplete the Ozone Layer and its amendments, the atmospheric concentrations of many of these gases are either increasing more slowly or decreasing.

Scientists are growing concerned about other gases produced from manufacturing processes that pose an environmental risk. In 2000 scientists identified a substantial rise in atmospheric concentrations of a newly identified synthetic compound called trifluoromethyl sulfur pentafluoride. Atmospheric concentrations of this gas are rising quickly, and although it still is extremely rare in the atmosphere, scientists are concerned because the gas traps heat more effectively than all other known greenhouse gases. Perhaps more worrisome, scientists have been unable to confirm the industrial source of the gas.

4.0 PROJECT DESCRIPTION

The Project is about restoration and conservation of the environment and . It involves implementation of measures capable of:

- restoring the environment to its initial balanced state, and
- ensuring that conservation remains sustained.

The measures are mainly those which are within the implementation ability of ELCT-ND and those whose implementation requires influence through Church advocacy.

5.0 JUSTIFICATION

The case for intervention to restore and protect Kilimanjaro Region's environment can be seen in Appendix 1. This Appendix carry observations of 14 participants who took part in a proposal kick-off workshop organized by the Diocese. Appendix 1 is transmitted separately as *"Environment Workshop"* File.

5.1 Absence of education on the environment.

There is widespread ignorance in the Kilimanjaro community, of the virtues of environmental conservation and the risks of destruction. Environmental degradation therefore does not worry people so long as the eye of law enforcement agencies is not close by. Continuing education is necessary for sustained awareness of consequences of human actions in the course of interaction with the environment. Such awareness will lead to a change of attitude.

5.2 Reckless deforestation

There is extensive deforestation in plantation, natural , and agro-forests within Kilimanjaro Region as has been the case in the rest of the country. Such deforestation is for making way to farming activities, and the production of

charcoal, timber, burnt clay bricks, and timber. This has led to the destruction of water sources and hardship to mankind particularly rural women. Besides, Kilimanjaro Region's contribution towards global warming has, as a result been growing.

5.3 Landscape Destruction

There is persistent unorganized destruction of the landscape through excavation of clay soil for brick making and granite and sand for construction.

5.4 Loss of Mount Kilimanjaro's attraction and life-support value

The snow cap that has covered the top of Mount Kilimanjaro for the past 11,700 years is disappearing rapidly due to global warming. Over the past century, the ice cap volume has dropped by more than 80 percent. In the year 2002, a study led by Ohio State University ice core paleoclimatologist predicted that ice on top of Africa's tallest peak would be gone between 2015 and 2020. In March 2005, it was reported that the peak was now almost bare for the first time in 11,000 years. The loss of the Kilimanjaro ice fields will carry significant climatological and hydrological implications for local populations who depend on water from the ice fields during dry seasons and monsoon failures.

5.5 Decline in agricultural production

There has been a persistent decline in food production in Kilimanjaro for various reasons, chief among them being drought. Rains have become increasingly unreliable and insufficient in the past four decades. The production regime in 1995 and 2001 is about-all, production deficits as shown in Table 2.

Table 2: PRODUCTION OF MAIN FOOD CROPS – 1995/96-2000/2001 [Metric Tons]

Year / Food Crop	1995/96	2000/2001	Change 2000/01-1995/96
Paddy	47000	39483	(7517)
Beans	21367	20872	(495)
Bananas	657510	607990	(49520)
Irish Potatoes	54018	77530	23512

Cassava	40540	30683	(9857)
Sweet Potatoes	2020	13145	11125
Maize	183045	126607	(56438)
Sorghum	35464	369	(35095)
Finger Millet	4350	38	(4312)

Source - Kilimanjaro Regional Agricultural Office Reports 2001

6.0 OBJECTIVES

Overall Objective The project's overall objective is the restoration and conservation of the environment in Kilimanjaro Region.

Specific Objectives for the project are as follows:

- To implement community education on environmental conservation.
- To restore and conserve forests all over Kilimanjaro Region, emphasizing water conserving trees around water sources.
- To introduce and popularize economic charcoal cookers and alternative sources of cooking energy to gradually take the place of charcoal
- To advocate for availability of electricity, LPG and natural gas for domestic use, at popular prices.
- To popularize non-wood based construction material
- To introduce and popularize non-wood alternatives in the firing of clay-brick kilns. [coffee and rice husks, also saw dust.
- To introduce and popularize burials which neither use wooden coffins, nor graves constructed by cement bricks and mortar.
- To introduce and popularize forest honey harvesting techniques to replace fire.
- To popularize use of compost and livestock manure in place of chemical fertilizer which in the long term kills the soil.
- To advocate for orderly excavation of clay for brick making, and mining of granite for construction.
- To ensure a place for environment conservation education in the curricula in theological colleges, Church schools and colleges as well as in faith classes for children prior to confirmation.
- To advocate for a place for environment conservation education in school curricula from nursery school to university level.

- To include the environment conservation in the faith teachings of Churches.
- Establish an environment docket in the structure of the Diocese to coordinate and supervise conservation.

7.0 BUDGET

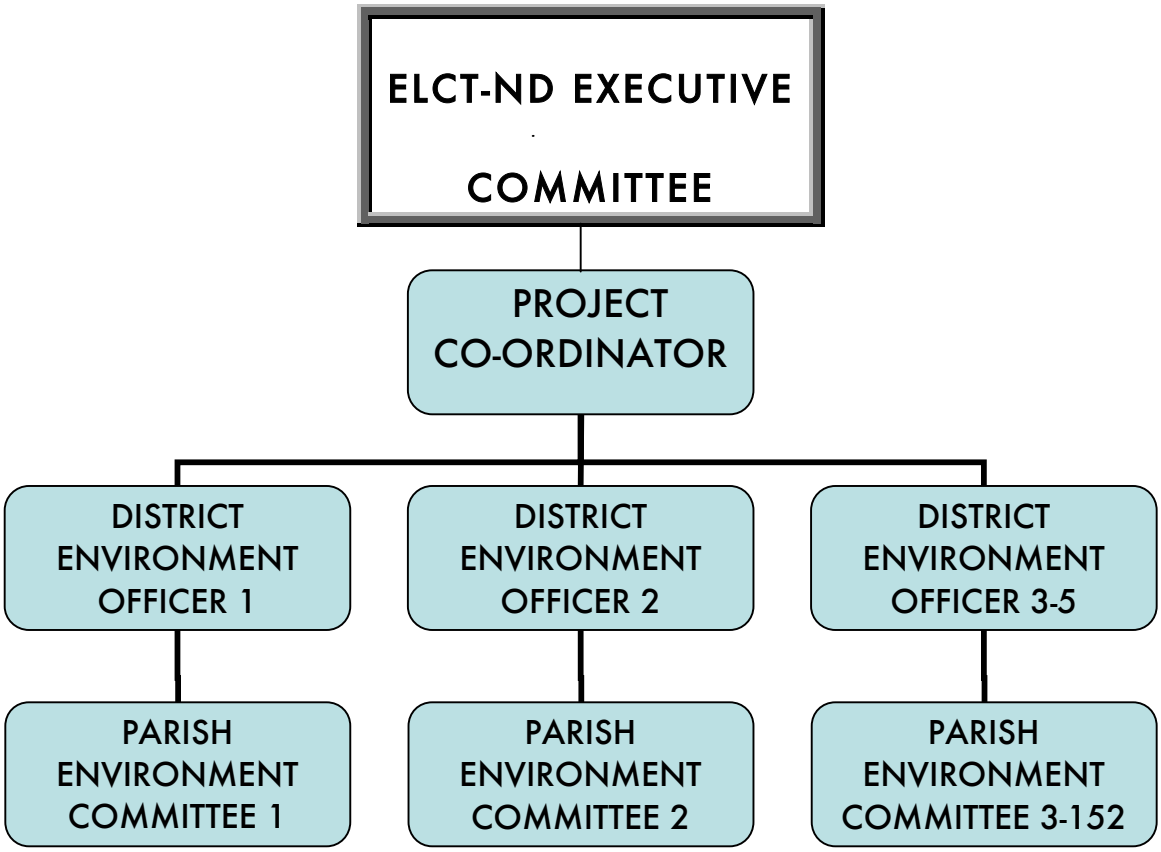
The budget for the various activities during the project's seven years in the 152 parishes of the Diocese is US$ 2.5 million. It is carried as Appendix 2, transmitted separately as File "Activity Budget-Envir Prop". Alongside other activities, afforestation which is the main activity is expected to achieve planting of 8.5 million trees as community forests during the plan period.

8.0 MANAGEMENT

The management of the project is expected to be the Church's and will involve the office of the Northern Diocese in which the Regional Coordinator will be located. At the level of Church districts, there shall be an officer who will supervise activity of District parishes. At Parish level, Parish Environment Committees will implement the project. The Project Coordinator must be a person with environment educational qualifications. The Project Coordinator and District level officers must be strong leaders capable of taking accountability for the performance of Parish level implementers.

ELCT DEPARTMENT OF THE ENVIRONMENT

ORGANIZATION STRUCTURE



9.0 SUSTAINABILITY

The project will be implemented in communities around Parishes. The afforestation component will have to do exclusively with agro-forestry, involving community households planting trees in and around their farms. It is expected that the conservation zeal developed by the project will be maintained by a generation passing this civilized practice on to the next.

10.0 LOGICAL FRAMEWORK

The proposed logical framework for the project is presented in tabular form in Appendix 3 transmitted separately as "Logical Framework". It has expected, desired results, related activities, verifiable indicators, verification means, and assumptions.

APPENDICES

APPENDIX 1: ELCT-ND 7 YEAR ENVIRONMENTAL PLAN- Workshop proceedings.

KILIMANJARO SITUATION		WHAT TO BE DONE
AREA	**SITUATION**	
Use of Resources	1. There is excessive felling of trees for burning charcoal and firing clay bricks. There is also growing demand for wooden coffins.	1. Popularize use of economic charcoal and charcoal stoves 2. Popularize use of cookers which use saw dust and coffee and rice husks 3. Popularize installation of biogas systems 4. Making available electricity and LGP at affordable prices 5. Educate communities regarding harmful effects of reckless tree felling 6. Road construction contracts to require contractors to plant at least as many trees as they fell along the way. 7. Sensitize communities to do away with coffins for burial. Cloth+ mats made from organic matter should suffice. This was the practice in the past.
	2. There are persistent forest fires around Mt. Kilimanjaro	1. Educate communities regarding harmful effects of forest destruction 2. Introduce non-fire means for extracting forest honey 3. Communities around forests to be involved in forest conservation.
	3. There is Farming and grazing at many water sources	1. Laws should be observed and made to work
	4. No emphasis on planting water- conserving trees	1. Educate communities on planting water conserving tree species
	5. De-fertilization [Removal or burning of harvest residue]	1. Educate communities on soil fertility management
	6. Steep farmlands are in many places not terraced to protect against degradation	1. Educate communities on the harmful effects of erosion
	7. There is growing effort to popularize application of chemical fertilizers in our agriculture.	1. Educate communities on the harmful effects of chemical fertilizers to the soil 2. Educate communities on production and application of compost 3. Use of livestock manure.
	8. There is unplanned mining of granite and clay, leaving huge pits on otherwise good farmland	1. Promote organized excavation of clay for brick-making 2. Make available capital to enable shift into other economic activities
	9. There are unplanned grave sites as well as graves of designs which are unfriendly to the environment	1. Promote community cemeteries 2. Educate communities on the harmful effects of constructing grave-pits by concrete and cement.
	10. Over-use of water and land resources	1. Popularize water-efficient WCs 2. Devise and implement life-support uses for waste water

KILIMANJARO SITUATION		WHAT **TO BE DONE**
AREA	**SITUATION**	
Education and Young people	1. There is no environment content in the curricula of schools and other education institutions	1. Ministry of education and other educating institutions to include in the curricula of various levels, the subject of Environment.
	2. There is no environment content in the curriculum of Lutheran faith classes for children, prior to confirmation.	1. Introduce theoretical and practical lessons on Environment in their curriculum.
	3. There is no community education on conservation	1. Introduce community education on environmental conservation, both theoretical and practical
Pastoral care	1. There is officially little or no space in the Pastors' agenda regarding environmental conservation. Theology and Environment remain disjoint.	1. Introduce the lesson on environment in theological colleges 2. Conduct crash seminars for serving pastors on issues of environmental conservation 3. Pastors to constantly remind Christians and communities of their responsibility to protect God's creation; More so on the event of thanks-giving following the harvest.
	2. The tradition of Pastors organizing annual tree-planting in parishes is no more.	1. Set aside a yearly tree-planting day for the parish, usually just before or on the onset of annual rains. Could be Saturday following Good Friday.
Life styles	1. Careless disposition of waste	1. Sensitize communities against careless disposal of litter especially plastics 2. To the extent possible, desist carrying away material which as waste, is difficult to dispose of in a civilized manner. 3. Discourage consumption of packed, processed foods and promote fresh foods. The former carry packaging waste while a lot of the latter can be bought in organic baskets.
Media and Advocacy	1. There is a shortage of media outlets in the Region. Radio stations are few [about 3] while T.V stations and Newspapers do not exist.	1. Request media owners to accommodate programs on environmental conservation. 2. Develop educational leaflets and booklets on environmental conservation. 3. The Diocesan department of communication and visual media to visit Districts and assemble pictures areas with conservation successes and failures.
	2. There is insufficient advocacy by the Church to prompt the government to pursue environmental conservation with vigor.	1. The Diocese should be organized to follow up and be on top of conservation issues and prompt the government when necessary, to enforce corrective measures.
Partnerships	The Diocese structure does not have an environment docket. The deficiency is replicated all the way down to the parishes.	1. Diocese to establish a department in charge of environment conservation. Districts and parishes to replicate that docket.
Celebration	The Diocese has no festival targeting the environment	The post-harvest Thanks-giving festival should also focus on the environment which supports production and life.

APPENDIX 2: ACTIVITY BUDGET

S/n	SPECIFIC OBJECTIVES	ACTIVITIES							TOTAL BUDGET
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	
1	To implement community educati on on environmental conservation.	-Diocese/level seminars to Parish ToTs -Community seminars	-Community seminars	-Community seminars	-Community seminars	-Community seminars	-Community seminars	-Community seminars	
BUDGET ACTIVITY 1		1,500,000.00	1,000,000.00	1,200,000.00	1,300,000.00	1,400,000.00	1,500,000.00	,600,000.00	9,500,000.00
2	To restore and conserve forests all over Kilimanjaro Region, emphasizing water conserving trees around water sources.	-Establish 152 tree nurseries [1 per Parish] -Distribute seedlings -Monitor planting+Care	-Establish 152 tree nurseries -Distribute seedlings -Monitor planting+Care	-Establish 152 tree nurseries -Distribute seedlings -Monitor planting+Care	-Establish 152 tree nurseries -Distribute seedlings -Monitor planting+Care	-Establish 152 tree nurseries -Distribute seedlings -Monitor planting+Care	-Establish 152 tree nurseries -Distribute seedlings -Monitor planting+Care	-Establish 152 tree nurseries -Distribute seedlings -Monitor planting+Care	
BUDGET ACTIVITY 2		167,200,000.00	167,200,000.00	167,200,000.00	167,200,000.00	167,200,000.00	167,200,000.00	167,200,000.00	1,170,400,000.00
3	To introduce and popularize economic charcoal/firewood cookers and alternative sources of cooking energy to gradually take the place of	-Demonstration of existing technology	-Demonstration of existing technology	-Demonstration of existing technology	-Demonstration of existing technology	-Demonstration of existing technology	-Demonstration of existing technology	-Demonstration of existing technology	

	charcoal	- Introduce new technology	- Introduce new technology	- Introduce new technology	- Introduce new technology	- Introduce new technology	- Introduce new technology	- Introduce new technology	
BUDGET ACTIVITY 3		45,600,000.00	45,600,000.00	45,600,000.00	45,600,000.00	45,600,000.00	45,600,000.00	45,600,000.00	319,200,000.00
4	To advocate for availability of electricity, LPG and natural gas for domestic use, at popular prices.	-To educate on LPG/Natural gas use and demonstrate economy over charcoal	-To educate on LPG/Natural gas use and demonstrate economy over charcoal	-	-	-	-	-	
BUDGET ACTIVITY 4		15,000,000.00	15,000,000.00	15,000,000.00	15,000,000.00	15,000,000.00	15,000,000.00	15,000,000.00	105,000,000.00
5	To popularize non-wood based construction material	-Identify the building materials -Promote non-wood building materials	-Promote non-wood building materials	-Promote non-wood building materials	-Promote non-wood building materials	-Promote non-wood building materials	-Promote non-wood building materials	-Promote non-wood building materials	
BUDGET ACTIVITY 5		7,600,000.00	7,600,000.00	7,600,000.00	7,600,000.00	7,600,000.00	7,600,000.00	7,600,000.00	53,200,000.00

6	To introduce and popularize non-wood alternatives in the firing of clay-brick kilns. [coffee and rice husks, also saw dust.	-Promote existing alternatives - Inroduce new alternatives	-Promote existing alternatives - Inroduce new alternatives	-Promote existing alternatives - Inroduce new alternatives	-Promote existing alternatives - Inroduce new alternatives	-Promote existing alternatives - Inroduce new alternatives	-Promote existing alternatives - Inroduce new alternatives	-Promote existing alternatives - Inroduce new alternatives	
BUDGET ACTIVITY 6		3,000,000.00	3,000,000.00	3,000,000.00	3,000,000.00	3,000,000.00	3,000,000.00	3,000,000.00	21,000,000.00
7	To introduce and popularize burials which neither use wooden coffins, nor graves constructed by cement bricks and mortar.	-Demonstrate environmental impact -Educate on Biblical stand	-Demonstrate environmental impact -Educate on Biblical stand	-Demonstrate environmental impact -Educate on Biblical stand	-Demonstrate environmental impact -Educate on Biblical stand	-Demonstrate environmental impact -Educate on Biblical stand	-Demonstrate environmental impact -Educate on Biblical stand	-Demonstrate environmental impact -Educate on Biblical stand	
BUDGET ACTIVITY 7		3,040,000.00	3,040,000.00	3,040,000.00	3,040,000.00	3,040,000.00	3,040,000.00		18,240,000.00
8	To introduce and popularize forest honey harvesting techniques to replace fire.	-Promote existing alternatives - Introduce new techniques	-Promote existing alternatives - Introduce new techniques	-Promote existing alternatives - Introduce new techniques	-Promote existing alternatives - Introduce new techniques	-Promote existing alternatives - Introduce new techniques	-Promote existing alternatives - Introduce new techniques	-Promote existing alternatives - Introduce new techniques	
BUDGET ACTIVITY 8		9,000,000.00	9,000,000.00	9,000,000.00	9,000,000.00	9,000,000.00	9,000,000.00	9,000,000.00	63,000,000.00

9	To popularize use of compost and livestock manure in place of chemical fertilizer which in the long term kills the soil.	-Educate community on disadvantages of chemical fertilizer	-Educate community on disadvantages of chemical fertilizer	-Educate community on disadvantages of chemical fertilizer	-Educate community on disadvantages of chemical fertilizer	-Educate community on disadvantages of chemical fertilizer	-Educate community on disadvantages of chemical fertilizer	-Educate community on disadvantages of chemical fertilizer	
BUDGET ACTIVITY 9		7,600,000.00	7,600,000.00	7,600,000.00	7,600,000.00	7,600,000.00	7,600,000.00	7,600,000.00	53,200,000.00
10	To advocate for orderly excavation of clay for brick making, and mining of granite for construction.	-Examine existing procedures - Convince local/village govt to regulate and Monitor adherence	Monitoring Reporting	Monitoring Reporting	Monitoring Reporting	Monitoring Reporting	Monitoring Reporting	Monitoring Reporting	
BUDGET ACTIVITY 10		1,200,000.00	4,000,000.00	4,000,000.00	4,000,000.00	4,000,000.00	4,000,000.00	4,000,000.00	25,200,000.00
11	To ensure a place for environment conservation education in the curricula in theological colleges, Church schools and colleges as well as in faith classes for children prior to confirmation.	-Diocese to include env'tal conservation in all levels of education including Sunday school and pre-confirmation classes	-	-	-	-	-	-	
BUDGET ACTIVITY 11		15,200,000.00							15,200,000.00

12	To advocate for a place for environment conservation education in school curricula from nursery school to university level.	-Convince the education ministry to have a mandatory subject on environment conservation	-	-	-	-	-	-	
BUDGET ACTIVITY 12		5,000,000.00	-						5,000,000.00
13	Establish an environment docket in the structure of the Diocese to coordinate and supervise conservation.	-Coordinating dept at Diocesan level -Monitoring Office at District level -Implementing Committee at Parish level	-Coordinating dept at Diocesan level -Monitoring Office at District level -Implementing Committee at Parish level	-Coordinating dept at Diocesan level -Monitoring Office at District level -Implementing Committee at Parish level	-Coordinating dept at Diocesan level -Monitoring Office at District level -Implementing Committee at Parish level	-Coordinating dept at Diocesan level -Monitoring Office at District level -Implementing Committee at Parish level	-Coordinating dept at Diocesan level -Monitoring Office at District level -Implementing Committee at Parish level	-Coordinating dept at Diocesan level -Monitoring Office at District level -Implementing Committee at Parish level	
BUDGET ACTIVITY 13		199,200,000.00	199,200,000.00	199,200,000.00	199,200,000.00	199,200,000.00	199,200,000.00	199,200,000.00	1,394,400,000.00
GRAND TOTAL		480,140,000.00	462,240,000.00	462,440,000.00	462,540,000.00	462,640,000.00	462,740,000.00	459,800,000.00	3,252,540,000.00

EXCHANGE RATE: 1 USD=Tshs 1,300.00