

**RELIGIOUS INSTITUTIONS AND ENVIRONMENTAL CONSERVATION:  
A CASE OF NORTHERN DIOCESE OF THE EVANGELICAL LUTHERAN  
CHURCH IN TANZANIA**

**DANIEL ANAEL MLAKI**

**A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE  
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## **ABSTRACT**

Environmental issues are outspoken worldwide due to the effects of environmental degradation. Faith based institutions possess unique persuading and mobilizing power and authority over their believers but this has not yet been utilized in environmental conservation. Often, areas owned and developed by religious institutions have well conserved environment, while in the neighbouring communities the environment is quite the opposite. A cross-sectional study was conducted in the Evangelical Lutheran Church in Tanzania (ELCT), Northern Diocese (ND) to determine the role of religious institutions on environmental conservation. Specifically, the study determined the survival rate, and analyzed factors influencing survival of the trees at household level, determining the compliance mechanisms used by the Church and the community perception on the approach used by the Church in environmental conservation, as well as identifying challenges that households face in the management of the trees. A multistage sampling procedure was employed from diocesan to parish level where 100 households were involved, where primary and secondary data were collected. The findings revealed that 78% of the planted trees have survived to date. Strong spiritual influence through behaviour building by the Church, availability of land, manpower, good timing of planting season, good caring strategies, availability of tree seedlings, and agro-ecological zones enhanced survival of the trees. There was a well-defined system organized by the Church to ensure compliance of the youths in tree planting at household level. The findings revealed positive community perception of the model used by the Church by engaging youth in environmental conservation. Challenges like schedule interference, pests and diseases, negligence, distance from the household, livestock rearing, drought and theft were noted at different levels in the programme. It is here concluded that faith based organization have a strong role to play in changing people's behaviour beyond spiritual

basis with or without direct benefits. The approach of involving youth in the early stages of life has implications to the youth themselves and the entire family. It is recommended that religious organizations have to be given central role in fostering for environmental conservation behaviour change to ensure the compliance of youths, other groups and the community at large. It is further recommended that the approach demonstrated by ELCT ND to be up scaled to other parts of Tanzania.

## **DECLARATION**

I, Daniel Anael Mlaki, do hereby declare to Senate of Sokoine University of Agriculture that this dissertation is my original work done within the period of registration and that it has neither been submitted nor being concurrently submitted in any other institution.

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**Daniel Anael Mlaki**

**(MARD Student)**

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**Date**

This declaration has been confirmed by:

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**Dr. Fatihiya A. Massawe**

**(Supervisor)**

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**Date**

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This work is cordially dedicated to my dear wife Prisila, our beloved twin boys Eliya and Elisha and our little daughter Elizabeth.

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**LIST OF ABBREVIATIONS**

ARC	Alliance of Religion and Conservation
ELCT	Evangelical Lutheran Church in Tanzania
EMA	Environmental Management Act
IFEES	Islamic Foundation for Ecology and Environmental Sciences
ND	Northern Diocese
NEAP	National Environmental Action Plan
NEMC	National Environmental Management Council
NGO	Non-Governmental Organization
RSV	Revised Standard Version
TDV	Tanzania Development Vision
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme
WWF	World Wildlife Fund

## **CHAPTER ONE**

### **1.0 INTRODUCTION**

#### **1.1 Background Information**

Environment cuts across all human life in cultural, social, economic and political spheres, and it is a global omnipresent entity. It is everyone's responsibility to struggle to live in a healthy and well conserved environment while participating in planning and following up the implementation of various environmental programmes (URT, 2009). Several efforts have been made across nations and communities to ensure sustainable environment. The Stockholm Declaration insists on fundamental right of human beings to live in an environment of a quality that permits a life of dignity and well-being, and their solemn responsibility to protect and improve the environment for present and future generations (Rockefeller, 1996). On the other hand, during the Earth Summit in Rio de Janeiro Brazil in 1992, countries were encouraged to prepare their respective National Environmental Action Plans so as to set out priority actions to address environmental challenges (URT, 2013).

In Tanzania, the National Environment Management Act of 1983 was the first law that showed the interest of the government in development that considers the environment. It created the National Environment Management Council (NEMC) in the same year to play the role of advising the government of Tanzania on all environmental issues such as policy formulation and recommendation, coordination, evaluation and improvement of the existing policies; just to mention few (Pallangyo, 2007).

To comply with international directives, the Tanzanian Government prepared the first National Environmental Action Plan (NEAP), in 1994. The plan was an important tool for



addressing environmental challenges at all levels of government, including developing a national vision, assessment of environmental issues, setting priorities, identifying the most appropriate strategies for addressing the key problems, and implementing actions so as to achieve environmental sustainability (URT, 2013).

Traditionally, the efforts to manage and conserve the environment are made by the government in collaboration with other stakeholders like Non-Governmental Organizations (NGOs). Apart from the efforts made by the government and other actors in conserving environment, various religious faiths recognize the importance of conserving environment. For example, with regard to Christian faith, The Bible, Revised Standard Version (RSV) (2008) points out that after the creation of everything and man as well, “The Lord God took the man and put him in the Garden of Eden to till it and keep it” (Genesis 2:15). There are 2567 biblical verses which talk about the environment (Johnson, 2000). Islam and Christianity and many other religions insist on a responsibility to treat nature with respect and reverence because it is God's creation. Humans differ from other creatures for their ability to reason and make moral choices; so they are entrusted and accountable as God's agents and stewards on Earth (Kingsley, 1995).

To comply with the Bible and God's directives, for the past fifteen years, the Northern Diocese (ND) of the Evangelical Lutheran Church in Tanzania (ELCT), embarked on a tree planting programme as a way of conserving the environment. Environmental conservation is a broad term that includes a lot of areas to cover like earth's atmosphere, plants and animals, and the hydrosphere for example tree planting for afforestation and fighting against deforestation, cleaning up oceans, and developing the land. Conservation can be narrowed to tree planting and its management [<https://www.reference.com/science/definition-environmental-conservation-88a24caceb13e72>]. The Church has been

offering ten tree seedlings to every student enrolled to a confirmation class every year. The trees are planted in households, and the performance is assessed after two years before the confirmation of the youths. This intervention by church intends to promote environmental conservation behaviour at household level. The engagement of youth is expected to be an effective way to engage the entire community in environmental conservation. It is important to assess the intervention adopted by the Church to establish the success and failures. Therefore the study on which this dissertation is based was conducted to explore the ways through which this programme can contribute to conserve the environment and behaviour change among the community members.

## **1.2 Problem Statement**

Environmental degradation has been a problem in many countries in the world including Tanzania. This has attracted a number of stakeholders in addressing the problem. Among other actors, religious institutions have been on the forefront in solving the problem of environmental degradation. Regardless of their active participation, their role has not been much recognized. A research which was conducted in Ghana on the Church's environmental sustainability indicated that though the church has the potential to impact on environmental care and sustainability yet its response to the environment was woefully inadequate (Asamoah, 2013). This is attributed to the fact that researches on conservation are needed especially to focus on the influence of religious institutions on environmental conservation.

Despite their ability to persuade and mobilize the people in various aspects, religious institutions are yet to show their position as actors in environmental conservation. Often, areas owned and developed by religious institutions have well conserved environment for instance presence of planted trees, flowers, and nice landscaped lawns, while in most of

the neighbouring communities the environment is quite the opposite in the sense that the environment is not well conserved as in the areas under religious institutions. To address this difference, the ND of the ELCT started an intervention on tree planting. The intention was to engage the households on environmental conservation through involvement of confirmation youths, with the ultimate goal of changing people's behaviour concerning their role on environmental conservation. The approach adopted by the church might be worth showing that there is an open discrepancy between the areas owned and developed by religious organizations and the environment in the surrounding communities which needs to be addressed. Therefore, there is a need to document the success and failures of the approach by examining the role played by the Church in environmental conservation.

### **1.3 Justification**

In the Tanzania Development Vision (TDV) 2025, attaining food self-sufficiency and food security, universal access to safe water and absence of abject poverty have been pointed out as some of the basic targets (URT, 2015). Without sustainable physical environment, all these and other socio-economic and political targets of the TDV will be difficult to achieve as they are all dependent on reliable environmental conditions. It is therefore, an indication that more research on environmental issues is needed for the fulfillment of this vision. The results of this study will be of great use to enhance the expected changes as they have been analyzed in the TDV 2025.

Religion has a possibility of being the most powerful body in influencing positively or negatively several matters on the world view, values, attitudes, motivations, decisions, individual behaviours, groups, and the societies. It can, therefore, be the best alternative of defining the place of humans and how they should relate to each other and to the other phenomena. For instance, it may come up with an idea that nature as a whole is sacred,

nature will be conserved regarding the fact that whatever is regarded as sacred or spiritual is most likely treated with reverence and is highly protected (Selin, 2003).

Religion may be a more effective way of persuading people to make changes in their daily behaviour, including engaging in activities to influence institutions on behalf of biodiversity. A vivid example is cited among the Muslim fishers in Misali Island, West of Pemba, Tanzania. Once they threatened important turtle nesting sites and delicate coral slopes through dynamite fishing, the government and environmental agencies worked hard to educate the public but it was unsuccessful until the Islamic Foundation for Ecology and Environmental Sciences (IFEES) conducted two environmental ethics workshops based on the Qur'an, in 1998 and 2001. The central message from the Imams to the madrassa teachers and fishermen leaders insisted on the illegitimacy of dynamite fishing according to Islam, whereby the fishermen responded by ending this practice immediately (Gambrill, 2011).

This study's findings are expected to create a sense of awareness among various stakeholders for environment in Tanzania and even across the borders especially in promoting environmental conservation at the household level. The entire religious and secular institutions and the community at large will be able to adopt tree planting as a method of conservation that is dealt with in this study for sustainable environmental conservation.

## **1.2 Research Objectives**

### **1.2.1 Overall objective**

The overall objective of this study was to examine the role of religious institutions in environmental conservation in Tanzania, by focusing on the Northern Diocese of the Evangelical Lutheran Church in Tanzania.

### **1.2.2 Specific objectives**

The specific objectives of the study were:

- i) To determine survival rate of the planted trees.
- ii) To analyze factors influencing survival of the trees at household level.
- iii) To examine community perceptions on the approach used by the Church in environmental conservation.
- iv) To assess mechanisms put in place by the Church to ensure compliance of youth in tree planting programme.
- v) To identify challenges faced by the households in the management of the trees.

### **1.2.3 Research questions**

- i) What is the survival rate of the planted trees?
- ii) What are the factors influencing survival of the trees?
- iii) How does the community perceive the approach used by the Church in environmental conservation?
- iv) What are the mechanisms put by the Church to ensure the compliance of the youth in tree planting programme?
- v) Which challenges do the households face in management of the trees?

## **1.3 Theoretical Framework**

There is a wide range of theories of environmental conservation behaviour which so far have been formulated so as to predict how people react or behave in their respective environment. This study has adopted the Self-determination theory of conservation behaviour as it concurs with the focus of the tree planting programme which is run by the Church especially relying on the threefold approaches of the theory. The people are mostly likely self-determined to acquire values and norms of community through the influence of

religion as they share one faith which at large has contributed to push them into action. The detailed explanation of the theory is presented in the following section.

### **Self-determination theory of conservation behaviour**

According to Deci and Ryan (1985), there are three wide-ranging types of causes that motivate behaviour. These types differ by the degree of self-determination involved, with basic motivation representing the highest level of self-determination. First, people may perform behaviour because they choose to do so, enjoying behaviours for their own sake. Naturally motivated people develop satisfaction from performing the behavior itself. People who are naturally environmentally sensitized, for instance in the study area where trees mean life, have the behaviour of planting trees for many years. Nevertheless, since the community is not static but dynamic, and due to the needs of time, it is likely to have some exceptions for instance those who do not care about the environment, leading to a call for building conservation behaviour.

Second, people may act because by engaging in the behaviour they can attain positive outcomes or avoid negative ones. This study is very much in line with this theory under this perspective due to the fact that by engaging themselves in tree planting people expect to have their environment well conserved as well as other economic benefits that they can get from the trees. On the other hand, they have decided to engage themselves in tree planting so as to avoid negative effects of global warming, desertification and environmental degradation as a whole.

In order to attain a positive image in front of their Church leaders, the people engaged positively in the tree planting programme. On the other hand by engaging in the programme they feel a sense of belongingness to the community of believers. By staying

aside while others are active in the programme could make one feel like excluding himself or herself from the community of believers with whom one shares common faith. By engaging in tree planting the people would feel obliged to comply with God's directives to care for the creation, this being their responsibility as stewards to whom the creation is entrusted.

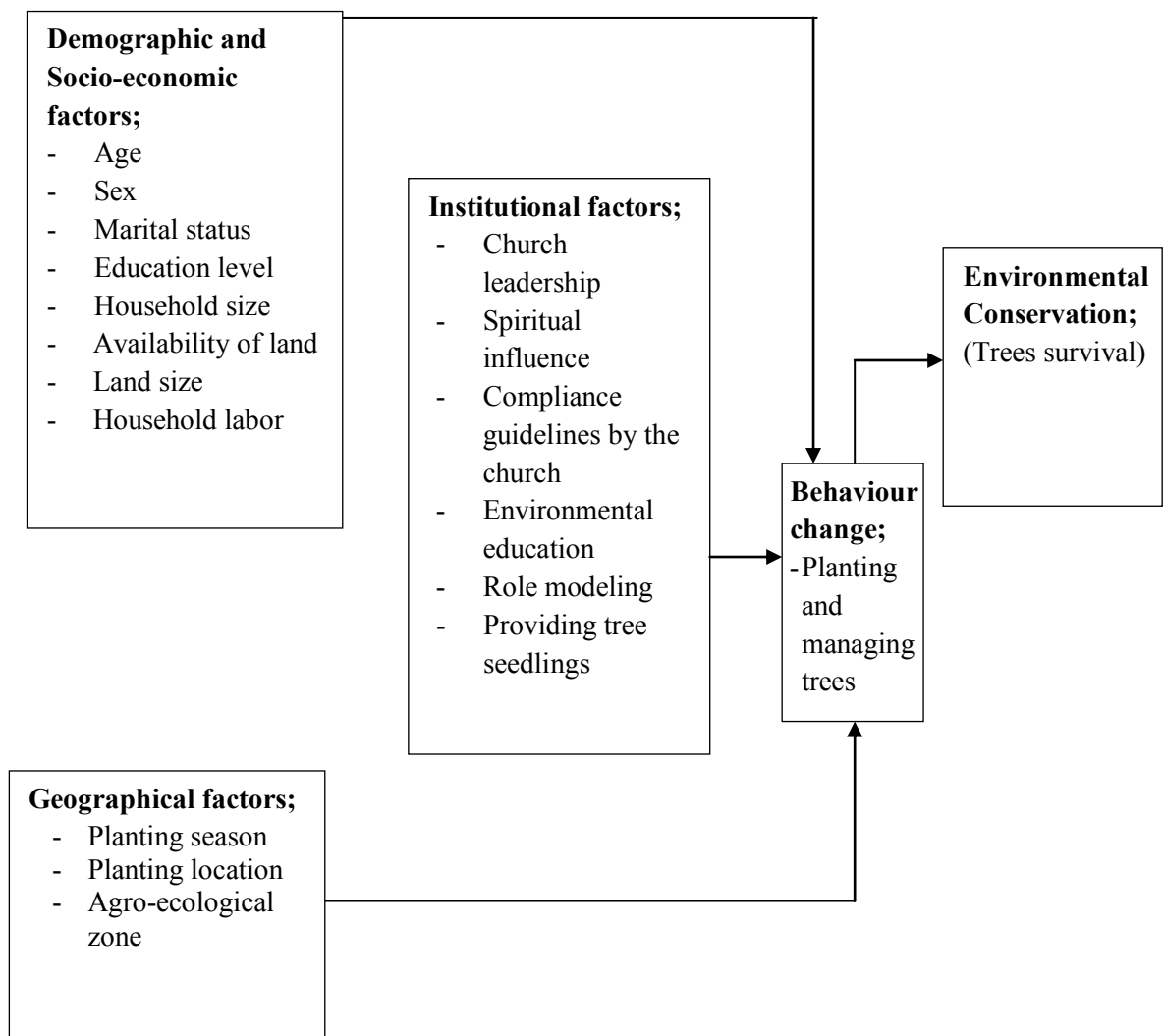
Third, as a result of being motivated, people might perform behaviour despite the fact that they are not sure of the positive or negative consequences of their behaviour. According to the theory, personal self-determination leads to increased performance in certain behaviour. Youths in confirmation classes, for instance, might not have predicted the positive or negative outcomes of their engagement in tree planting; yet they keep on being active actors due to the motivation behind them from the Church authority.

Basing on the three aspects of self-determination theory of environmental behaviour, it can be concluded that, it is a very basic theory that if applied would basically influence people to intervene in environmental conservation. So long as it stimulates self-interest on environmental issues, then it contributes to behaviour building from individual, group or groups and the community at large.

#### **1.4 Conceptual Framework**

The success of the Church intervention on environmental conservation will depend on a number of factors. It is assumed that the success will largely depend on people's behaviour change whereby they will adopt the behaviour of tree planting and devote time to manage trees for environmental conservation. The adoption of the behaviour can be influenced by a number of factors including climatic condition, socioeconomic and institutional factors. The household factors like availability of land to plant trees, time to manage trees and availability of household members to devote time to take care of trees are likely to influence adoption of the behaviour and also survival of the trees (Fig. 1.1).

Apart from household related factors, institutional factors play a key role in success of the intervention. The Church influences the adoption of the behaviour and survival rate of the trees by offering environmental education, and provision of tree seedlings. On the other hand, through strong leadership, well set strategies, spiritual influence and ensuring compliance guidelines and tree planting model farms. The Church plays the key role in influencing the people's behaviour change by connecting the tree planting programme with matters of faith or spiritual influence.



**Figure 1.1: Conceptual framework of the study**



### **1.5 Organization of the Dissertation**

This dissertation is prepared based on publishable manuscript format of Sokoine University of Agriculture. The whole report is divided in four chapters. The first chapter contains an overall introduction to the whole study, where some literature have been reviewed, problem statement and justification of the study are stated, as well as the overall objective, specific objectives and the research questions thereof. As well, the theoretical and conceptual framework is well-defined in this section.

In chapter two, the first manuscript is presented, focusing on the survival rate of the planted trees, the factors for the survival, as well as the challenges facing tree planting at household level. The third chapter presents the second manuscript where the mechanism used by the Church to ensure compliance of youths in tree planting programme is presented. The chapter captures also the community perception of the approach used by the Church in environmental conservation. The overall conclusions and recommendations are presented in fourth chapter. The chapter draws conclusion from previous chapters and provides relevant recommendations.

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## CHAPTER TWO

### **2.0 Promoting Environmental Conservation through Tree Planting: the Success and Challenges of the Church mode of Engaging Youths in the Northern Diocese of the Evangelical Lutheran Church in Tanzania**

Daniel Anael Mlaki<sup>1</sup> and Fatihya Ally Massawe<sup>2</sup>

<sup>1</sup>MA. Rural Development Student, Sokoine University of Agriculture, College of Social Science and Humanities, Department of Development Studies, P.O. Box 3021, Morogoro, Tanzania: [dadmlaki@yahoo.com](mailto:dadmlaki@yahoo.com)

<sup>2</sup>Senior Lecturer, Sokoine University of Agriculture, College of Social Science and Humanities, Department of Policy, Planning and Management, P.O. Box 3035, Morogoro, Tanzania: [fatty@suanet.ac.tz](mailto:fatty@suanet.ac.tz)

#### **2.1 Abstract**

Often, areas owned and developed by religious institutions have well conserved environment for instance presence of planted trees, flowers, and nice landscaped lawns, while mostly in the neighbouring communities the environment is not well conserved as in the areas under religious institutions. Despite their ability to mobilize the people in various aspects, religious institutions are yet to show their positions as actors in environmental conservation. To address this difference, the Northern Diocese (ND) of the Evangelical Lutheran Church in Tanzania (ELCT) started an intervention on tree planting by engaging youths at household level. Although the programme has been implemented for more than ten years, no study has been done to document the success and challenges. This paper

therefore answers three research questions: What is the survival rate of the planted trees?, What are the factors influencing survival of the trees? and Which challenges do the households face in management of the trees? A cross-sectional research design was adopted; a multistage sampling procedure was employed from diocesan to parish level. The study involved 100 households who had children attended confirmation classes from 2003 to 2015. Focus Group Discussion (FGD), and key informants interviews were done to collect qualitative data. The data were analyzed descriptively and through content analysis. The findings of this study elucidated that there was a survival rate of 78% of all planted trees at household level. This high level of success was attributed to availability of family land, commitment of the families and assurance of tree seedlings which were supplied by the Church to households, and moreover, spiritual influence by the Church. Some geographical aspects like the planting season which was mostly rainy season, and the location of the land close to the households also enhanced survival of the trees. Livestock, drought, theft and destruction of the planted trees challenged the tree planting programme at household level. The intervention by the Church enhanced commitment of the households with youths enrolled to confirmation classes in planting and managing the trees, hence high performance in the survival of the trees. The study recommends the establishment of by-laws governing the society so as to reduce the challenges which affect tree planting for instance control of livestock, theft and destruction of the planted trees.

**Key words:** Church, household, tree planting, spiritual influence, survival, challenges

## **2.2 Introduction**

The natural environment is a dire element of personal and community pride and well-being and an incentive for collaborative action and empowering people to become involved in the process of landscape and environmental management. It increases social

interaction, builds community capacity, and supports both development of community and environment (Elmendorf, 2008). Tree planting, primarily with native species makes a provision of long term carbon sink as well as improvement of soils, and it also helps to recover the water cycle which can affect the local climate. Fruit trees for instance, may be found integrated with arable crops either in intercropping or along the boundaries of the agricultural fields (Soini, 2003; Zaman *et al.*, 2010). Their contribution to environmental enhancement is also noted such as the improvement in soil fertility, soil erosion control and carbon appropriation (Sahoo, 2009). It also contributes to global cooling, hence combating global warming in the environmentally degraded and deforested areas (Bunyard, 2010). The natural ability of trees to absorb the carbon dioxide which is emitted into the atmosphere from factories, cars and the entire sources of carbon dioxide, gives them a unique position and importance in the environmental conservation all over the world.

From international to local communities the issue of environmental conservation is strongly addressed as the remedy for the livelihood of mankind and the entire fauna and flora who and which have fallen victims of environmental degradation, whereas tree planting has been the most outspoken possible entity. In November, 2006 the UNEP launched “The Billion Tree Campaign” under the slogan, “Plant for the Planet”. Originally, the target was a billion trees annual initiatives, but it was surpassed in just five months due to the rapid spread of the campaign, followed by an incredible fast response of the partners who joined the initiative (UNEP, 2007).

The Tanzania Government has set some strategies to combat the problems associated to climate change, one of them being launching a national tree planting day since 1999. The day was firstly celebrated on January 1 2010, but later it was shifted to 1 April. It aims at

fighting against deforestation as well as fighting against the threats of desertification. It is therefore launched in order to educate Tanzanians on the benefits of tree planting and the proper ways of doing it, as well as raising awareness of the dangers of deforestation. Along this day the Tanzania Forest Services Agency holds various special events in different places including schools as well as planting new forests (URT, 2016). Speaking during 2016 tree planting day, the Minister of State in the vice President's Office responsible for Union Affairs and Environment, Honorable Luhaga Mpina deeply insisted on every citizen's responsibility to plant trees and protect them so as to fight against deforestation and environmental degradation as a whole. The minister went further saying that the Government of Tanzania has set 20 billion shillings in the budget this year for tree planting all over the country (URT, 2016).

Religious institutions have the ability to persuade and mobilize the people in various aspects, but they are yet to show their position as actors in environmental conservation. Often, areas owned and developed by religious institutions have well planned and conserved environment, while in most of the surrounding communities the environment is not as well maintained as in the areas owned and developed by religious institutions. To address this difference, the ND of the ELCT started an intervention on tree planting. The intention was to engage the surrounding communities on environmental conservation and restoration of the ecosystem around Kilimanjaro region. Therefore, there is a need to examine the model adopted by the Church by establishing the success and failures.

Specifically, the paper answers three research questions. The first question is on what is the rate of tree survival from the intervention, what are the factors that support survival and what are the key challenges facing households in tree planting.

This study's findings are expected to create a sense of awareness among various stakeholders for environment in Tanzania and elsewhere, especially in promoting environmental conservation at the household level. The entire religious and secular institutions and the community at large will be able to adopt tree planting as a method of environmental conservation that is dealt with in this study for sustainable environmental conservation.

## **2.3 Research Methodology**

### **2.3.1 Description of the study area**

The study was conducted in the Northern Diocese (ND) of the Evangelical Lutheran Church in Tanzania (ELCT), in Kilimanjaro region. The region is located in the north eastern part of Tanzania between latitude  $2^{\circ}25'$  and  $4^{\circ}15'$  South of the Equator, and longitudinally it lies between  $36^{\circ}25'30''$  and  $38^{\circ}10'45''$  East of the Greenwich. The region has common borders with Kenya in the north; to the Southeast it shares borders with Tanga region; and to the South it shares borders with Arusha Region (URT, 1998). The ND covers most of the area of the region, as it covers four out of six administrative districts. It was purposively selected from among 24 Lutheran dioceses in Tanzania, due to its early plans and active engagement in the tree planting programme thirteen years back, giving it a greater chance of being selected over the entire dioceses.

### **2.3.2 Research design, sampling procedure and sample size**

A cross-sectional study was conducted where by the survey was done once at a time. A multi-stage cluster sampling procedure was used, starting from the Church diocese level to the parish level. The target population was the households with youths who participated in the tree planting programme from the year 2003 to 2015. Hai Church district was randomly selected followed by two parishes, Nkweseko and Makuna, based on highland



and lowland agro-ecological zones respectively. The highland zone is characterized by home gardens where coffee, banana, yams, cocoyam and some vegetables are grown. Animal keeping is practised under zero grazing. The lowland zone is a bit dry land and is dominated by open fields where cereals like maize, millet, finger millet, and legumes like beans are grown. As well, free range livestock keeping is practised in this zone. Finally 100 households with youths who had participated in tree planting were selected from each parish through systematic random sampling procedure, depending on their respective population size. The sampling frame was conducted based on the years of enrolment to the confirmation class.

According to the parishes data bases, the average number of youths confirmed per year, per parish is between, 30 to 50. Taking two parishes as sub-samples, the first and the second parishes had a total number of 620 and 380 students respectively who had already been confirmed within the marked period of time. In order to come up with a desirable sample size, the total number of sub samples was calculated at 10%, making a total of 62 households sample size for the first parish, and 38 households for the second parish. The sum of the two makes 100 households. This complies with literature by Bailey (1994) which states that, regardless of the population size, a sample or sub-sample of 30 respondents is the bare minimum for studies in which statistical data analysis is to be done.

### **2.3.3 Data collection**

Primary data collection was done through focus group discussion (FGD) in both of the sampled parishes. FGD participants were obtained from each of the parish congregations, whereby in the first parish the first group involved seven members and the second parish ten members were involved. Key informant interviews involving pastors, evangelists,

church elders, church community leaders and youth leaders from the diocesan to parish level were also conducted through a checklist of questions. Qualitative data were collected through FGD and key informant interviews. Questionnaire survey was conducted to collect quantitative data from 100 households. Secondary data on number of youths who were enrolled to confirmation classes from 2003 to 2015 was obtained from the parish databases and number of tree seedlings provided to households.

#### **2.3.4 Data analysis**

Data analysis was done through qualitative and quantitative techniques. Descriptive statistical analysis was applied for the analysis of quantitative data, using for instance demographic and socio-economic characteristics of households and challenges faced by the households in environmental conservation. The findings are presented in frequency, means and percentages. The analysis of factors influencing survival rate of the planted trees was calculated by dividing the number of trees which survived over the total tree seedlings, then multiplied by 100 to get the percentage. Qualitative data analysis was done through content analysis basing on the organized themes.

### **2.4 Results and Discussion**

#### **2.4.1 Demographic and socio-economic characteristics of the respondents**

The average age of the respondents was 46 years whereas 31 % were between 25 and 40 years, while those aged between 41 and 50 were 46 %. The rest 23 % of the respondents were above 50 years of age (Table 2.1). The dominant age group of the respondents aged between 41 and 50 years consists of the energetic and productive people (Kashuliza, 1996).

The interviewed male and female respondents were 56% and 44% respectively (Table 2.1). According to Abdul-Wahab and Abdo (2010), males show up a higher level of knowledge about environmental issues than females. They are as well more environmentally concerned and tended to engage in more environmental behaviors than females. Despite this fact, the truth remains that it is contextually applicable. For instance, this study found that in the surveyed households, women participated fully in caring for the trees which were planted in their households. Their participation in the programme showed their awareness and active participation in the environmental conservation issues.

About 34% of the interviewed respondents were of the level of primary school, 32% had secondary education while those with college and university education were 13% and 21% respectively (Table 2.1). Their exposure to these levels of education is likely to have a sound contribution to the livelihood of the programme due to their capacity to reason, their experience and the skills they have had acquired along their school life. It is as well assumed that, younger and more educated people are more knowledgeable and concerned about the environment than older and less educated (Abdul-Wahab and Abdo, 2010). This can be vividly seen in the research finding results regarding the age groups, but consideration should be put on the latter referred group. They possess experiential knowledge with regards to tree species suitable for their respective areas, for example, in the FGD one elderly man explained how he was experienced with the tree species which suit the catchment areas and those which are to be planted on the entire land. They are acquainted with planting season and tree characteristics and uses as well. With regards to this study, all groups were essentially important in understanding the phenomena from different perspectives.

**Table 2.1: Demographic characteristics of the respondents**

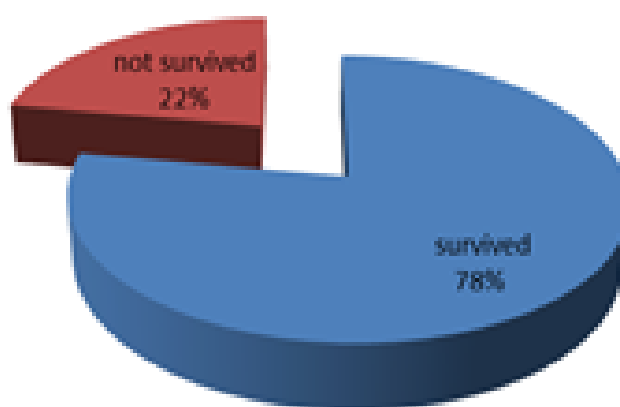
<b>Categories</b>	<b>Frequency</b>	<b>Percent</b>
<b>Age</b>		
25-40	31	31.0
41-50	46	46.0
>50	23	23.0
<b>Sex</b>		
Male	56	56.0
Female	44	44.0
<b>Education level</b>		
Primary	34	34.0
Secondary	32	32.0
College	13	13.0
University	21	21.0
<b>Marital Status</b>		
Single	1	1.0
Married	92	92.0
Widower/widow	6	6.0
Divorced/separated	1	1.0
<b>Household size</b>		
Mean		5
Mode		5

Among all respondents the married couples were 92% (Table 2.1). The high percentage of the married couples over the entire groups is of a great advantage to the tree planting program at household level in the sense that, their family set up most likely makes it possible to plan, decide and act together hence a greater possibility of success in any given ventures pertaining collective responsibility.

The average household size in the surveyed sample was five people per household (Table 2.1). This number is convincing for the household members to manage the planted trees since the given number of tree seedlings per household seem not too big to manage. This will give room for other household chores to be performed without interfering much with the family daily schedule of activities.

#### 2.4.2 Number of trees surviving and rate of survival

Through household survey, findings revealed that a total number of 1990 tree seedlings were provided to all 100 surveyed households in different years, depending on the years of enrolment of confirmation students from 2003 to 2015. Out of all tree seedlings provided to all households, 1547 trees survived, which is 78% of all planted trees (Fig. 2.1). The average number of trees provided to each household was 20 tree seedlings per household, whereby the average survival rate of trees was 15 trees per household. The number of trees that survived and the survival rate can be viewed as a result of collective efforts by the Church body and the respective households with youths who were involved in the tree planting programme, which led to successful results. There were as well other contributing factors, for instance geographical factors for instance enough rainfall as findings showed that the trees were mostly planted during rainy season. This enhanced growth and survival of the trees as there was enough water to support the tree seedlings growth especially during the early stage.



**Figure 2.1: Survival rate of the planted trees**

#### 2.5 Factors Influencing Survival of the Trees Planted at the Household Level

The findings showed that there were several factors which contributed to the survival of the trees in the program. These factors can be categorized into demographic and socio-economic, institutional, geographical as well as behaviour change.

### **2.5.1 Availability of land**

Land was an important entity without which the tree programme would not have been possible to take off. Tree seedlings which were given to the confirmation youths were planted in different locations. The findings of this study showed that 89% of all trees were planted on family land (Table 2.2). Having the high percentage of trees being planted on family land was more advantageous for their survival as they were in a great possibility of being frequently attended during normal family farm activities.

### **2.5.2 Household land size**

The average land size owned by the households where the trees were planted lies at 6 acres per household (Table 2.2). The given land size in relation to the average household size implies the survival of the planted trees as the given land size is manageable under the available household manpower, hence the possibility of the trees to survive in reasonable numbers.

**Table 2.2: Factors influencing survival of the planted trees**

<b>Factors</b>	<b>Frequency</b>	<b>Percent</b>
<b>Planting location</b>		
Family land	89	89.0
Parish land	3	3.0
Village land	2	2.0
Clan land	6	6.0
<b>Land size in acres</b>		
1 – 5 acres	53	53.0
6-10 acres	27	27.0
Above 10 acres	20	20.0
<b>Season</b>		
Dry	7	7.0
Wet	93	93.0
<b>Distance from household</b>		
10-100m	40	40.0
101-200m	7	7.0
201-300m	7	7.0
301-400	1	1.0
>400m	45	45.0

### **2.5.3 Tree planting season**

After being enrolled to the confirmation class in January every year the new students are introduced to the project and it is also known by their parents that they are going to participate in tree planting program as a way of conserving the environment. It was evident through one of the church elders, a key informant that children who are enrolled to confirmation class do not immediately receive the tree seedlings to plant on January because in the study area this is a dry season.

Tree planting normally takes place during the main annual rain season which starts in March. This season favors the growth and survival of the newly planted tree seedlings as there is enough rain water which is naturally available throughout the rain season from March to June. It was found that 93% of the trees were planted during wet/rain season due to the preceding reason (Table 2.2).

#### **2.5.4 Distance from the household to the site of planted trees**

The findings disclosed that 40% of the trees were planted at the distance between 10-100m, while those which were planted at the distance above 400m were 45% (Table 2.2). This is an indication that the trees were not planted very far from the households as far as the given distance is concerned, and this could mostly enhance close caring of the trees hence a greater chance of their survival.

#### **2.5.5 Caring for the trees**

The task of caring for the trees was counted as one of the household responsibilities, making it possible for the trees to survive. The findings through FGD showed that wherever in a household the child who was given the trees to plant was not in a position to take care of them, then the parents/guardians or other family members voluntarily took over the responsibility. This complies with the self-determination theory of conservation behaviour which points out that, people may perform behaviour because they choose to do so, enjoying behaviours for their own sake, and that naturally motivated people develop satisfaction from performing the behavior itself (Deci and Ryan, 1985). The fact that many of the trees were planted in the family land where daily farm activities take place was an added advantage for the trees to survive because, at least quite often there was someone to keep an eye on them.



### **2.5.6 Reliable source of tree seedlings**

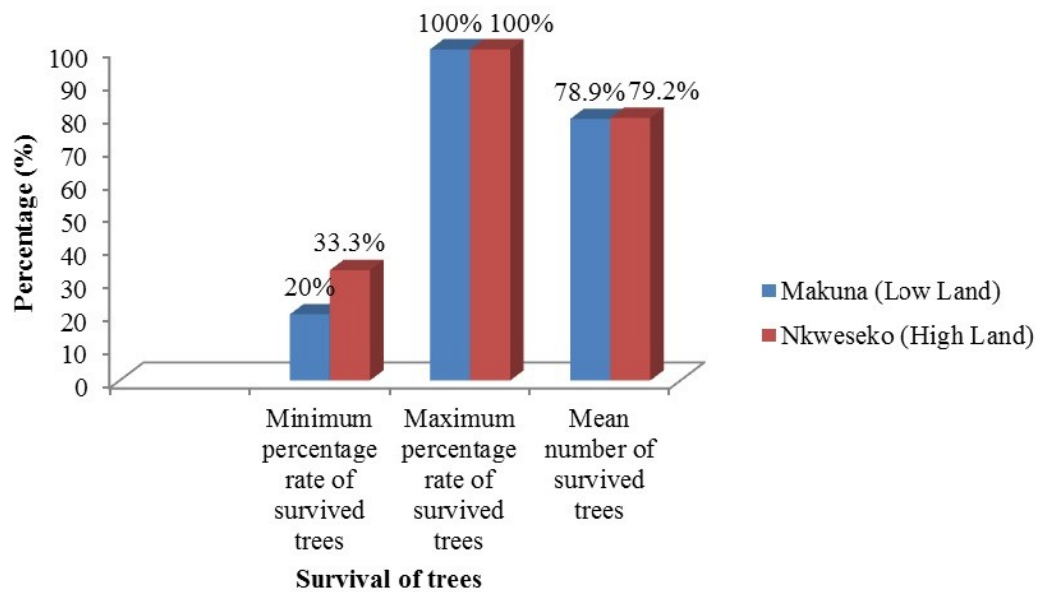
It was disclosed by a church elder who was a key informant that tree seedlings were available from the parish tree nurseries either for free or by paying a little amount of money to cater for nursery services. According to contributions from the participants in FGD this depended on the plans of a respective parish. The findings showed that tree seedlings were available as one of the ways to motivate the youths to participate actively in the programme rather than introducing the programme and leave every one of them to look for tree seedlings which could somehow not be of good quality, or sometimes insufficient in number. This could as well demoralize the members since it could be somehow costly on their side.

### **2.5.7 Tree planting zones: Agro – ecological zones**

According to the observation made during data collection, the study area is vividly divided into two agro ecological zones that are highland and lowland areas. The highland area is dominated by home gardens where coffee, banana, yams, cocoyam, fruits and vegetables are grown. Agro-forestry is also practiced whereby trees are grown within the gardens and along the live fences. This area closely borders Mount Kilimanjaro forest reserve, giving it an advantage of experiencing wet condition which favors growth and survival of many plants including trees.

Findings showed that overall minimum percentage survival rate of trees per household was 33.3% of all tree seedlings offered, while the maximum survival rate was 100 % of all tree seedlings per household (Fig. 2.2). Results further indicated that overall average survival rate of trees per household was 79.2% (Fig. 2.2). This implies that the geographical location of this zone gives it an advantage of having some favourable conditions for survival of trees such as permanent water streams that pass across the land,

making it possible for many areas to have enough water throughout the year. Tap water is also available and accessible. All these factors seem to have favoured the survival of the trees per household in this area.



**Figure 2.2: Survival rate of trees per agro-ecological zones**

On the other hand, the lowland is the plain area which is less humid and experiences longer drought periods as compared to the upper zone or the highland area. It is the area which is mostly used for the cultivation of the seasonal cereals such as maize, millet, finger millet also leguminous plants like beans and other crops. Due to its geographical location the area favours livestock keeping where people keep the free range herds of cattle, also sheep, goats and donkeys. Results showed that overall minimum survival of trees per household in this zone was 20% while the maximum survival rate of trees per household was 100% (Fig. 2.2).

Results further showed that the overall mean survival of trees per household was 78.8% (Fig. 2.2). During FGD in this zone it was reported to be affected by some challenges for

the survival of the trees for instance drought and livestock grazing making it difficult for the planted tree seedlings to grow and survive successfully. This might have been the reason for the low rate of survival of trees per household as stated in the findings above, compared to the highland ecological zone where these challenges were not noted.

Despite the difference in the minimum number of survival of trees per household for both highland and lowland agro-ecological zones, the maximum number of trees survival was the same, which was 100% rate of survival (Fig. 2.2). The difference in the mean survival of trees was not big as it was 78.9% and 79.2% for the lowland and the highland zones respectively (Fig. 2.2). The implication here is that there was some efforts made in both agro-ecological zones by individual households leading to the preceding results.

### **2.5.8 Spiritual influence**

The church laid a strong foundation behind the tree planting programme through preaching, teaching and persuading the members of different age groups about their position to care for the God – given creation as faithful stewards to whom it is entrusted. During FGD it was pointed out that even if a tree seedling given to a child died, most of them found any means to replace the seedling by either taking the ones that grew around their environment, from friends fields, or even asking for some money from their parents to buy a seedling or some seedlings to replace the one or some which died. This complies with the theory of conservation behaviour, the self-determination theory by Deci and Ryan's (1985), which states that some people may perform a behaviour for their own sake as they enjoy performing it, but as well, they may perform a behaviour because they aspire for positive results and avoid the negative ones. While referring to the book of Genesis 1:31 which says that God saw everything that he had made behold it was very good, during the FGD the participants pointed out that for the sake of their Christian faith and

good testimony to other people, they seriously engaged in tree planting because being a communion of believers in God, they feel blessed to maintain God's creation to remain in a good condition as God saw it during creation. It was further added that they deliberately accepted and participated in tree planting programme in order to have their environment well sheltered so as to avoid adverse consequences of world climate change as it is announced several times through different media.

Linking tree planting with matters of faith made it more concrete among the members to the extent that some who participated in the discussions pointed out that backed up with biblical teachings, this programme awakened them to feel that depleting the trees from the environment without replacement is sinful before God. It is obvious that behind people's awakening and willingness to participate in the programme there was more than the Church environmental policy; faith matters pushed them into behaviour change and action.

## **2.6 Challenges Faced by Households in Managing the Planted Trees**

The findings showed that there were some challenges which affected the tree planting programme at household level in some ways, based on natural and social aspects. Regarding the study area, some challenges were general while some others were peculiar to some areas with regard to agro-ecological zones that is highland and lowland areas.

### **2.6.1 Interference with daily household schedule**

Findings showed that 27% of the households faced a challenge of shortage of water. The participants in the FGD especially in the lowland reported this was due to the billed water where some people found it difficult to get enough water for their domestic use as well as watering the trees. Nevertheless, since all households do not have the same characteristics it was found that 46% of them did not find the programme interfering with their daily schedule (Table 2.3). Some might be having an advantage of living in the areas where they

do not need to bother about water because it is constantly available throughout the year. For instance if one has had planted trees in his/her live fence where the natural water stream passes or if one has a water tap with an assurance of constant water supply at the household, water cannot be a problem in such situations. On top of that, time and human resource management differs from one household to another, making it seem as one of family duties for one or some households while to others it seemed as interference.

**Table 2.3: Programme interference with household schedule**

<b>Challenge</b>	<b>Frequency</b>	<b>Percent</b>
Shortage of time	10	10.0
Shortage of water	27	27.0
Man power shortage	17	17.0
No interference	46	46.0

### **2.6.2 Livestock grazing**

In the areas where there was animal grazing especially in the lowlands, the planted trees were either eaten by the livestock like cattle, goats, sheep and donkeys as they passed across the fields with trees planted in. Thirty seven percent of the respondents reported to have a challenge of livestock grazing on their trees (Table 2.4). During the FGD in the lowland area one participant, a farmer lamented bitterly saying that she once planted trees all around her field and some inside it, but she was very much shocked to find that all her tree seedlings were destroyed. She added that when the livestock passed in her absence they ate, trampled on, and uprooted them all. The lowland area is predominantly open fields with some pastoralists living in and around, making it difficult for the people to plant trees successfully. The point that the livestock keepers don't care much about the survival of the trees rather than the survival of their livestock as pointed out during the FGD is closely linked to retarded efforts of the people on conservation through tree planting, as in this sense it means that the existence of livestock means a continuous threat to any planted trees in that area unless this problem is solved.

### **2.6.3 Drought conditions and shortage of water**

Eleven percent of the households were affected by drought being associated with distant location of trees from the household (Table 2.4). If they were planted somewhere close to the household, at least they could be watered during the dry season by using even the little amount of water which could be obtained even after daily domestic uses like mopping and washing. In line with this, some confirmed that somehow they saw it too laborious taking water a long distance to the location where the trees were planted, hence threatening the life of the trees especially the newly planted trees.

The findings further revealed that, after the rainy or wet season is over, shortage of water is likely to cost the household time, energy and resources to care for the trees especially in the lower lands which are a bit exposed to drought conditions than the highlands which has the advantage of water streams, shade from the entire trees and moist condition on the slopes of mount Kilimanjaro. During FGD some pointed out shortage of water being the root cause of death of tree seedlings soon after the rainy season was over because they have to pay for water bills so some find it costly to fetch water that is billed for watering the trees.

### **2.6.4 Theft and destruction of tree seedlings**

It was also reported during FGD that after being planted, the trees seedlings and the maturing trees have been prone to the vices of deliberate cutting, breaking or uprooting for some reasons, for instance for local brooms and toothbrushes especially those of *Grevelia* type which had been used by the indigenous people in the study area for such purposes. This was vivid whereby 21% of the surveyed households were affected (Table 2.4). The passersby or unfaithful neighbors were the suspected central players in this. This might have led to less number of the survived trees in a particular period of time because after being demoralized some people gave up replanting as they suspected the repetition of the same habit.

The 19% under this category had not faced any challenges (Table 2.4). This does not mean they were totally challenge free but sometimes they might have sought some solutions to some incidents that they had come across before it went far to be more challenging. Again, though far from their respective households, their trees might have been planted in sites where they are secured from the previously mentioned threats making it easy for them to survive the challenges as compared to trees planted in other places.

#### **2.6.5 Negligence, pests and diseases**

Findings indicated that there was negligence in some households which probably after receiving and planting the tree seedlings, in one way or another either the child or the entire household members did not put efforts to see that the trees are properly attended (Table 2.4). If the child himself/herself was not serious with the program and also the parents or guardians it is obvious that there will not be the desired results in the survival of the trees.

Some trees were affected by pests and diseases in some of the surveyed households (Table 2.4). Pest and diseases are also reported to be the limitations to several agroforestry home gardens efficiency in different geographical locations (Howard, 2006; Galhena *et al.*, 2013). Pest and diseases attacks are common when there is interaction of trees and crops in the fields. In agroforestry homegardens that include coffee production, pests such as stem borers and berry borers that attack coffee can as well become harmful to other plants including trees planted therein (Kitalyi *et al.*, 2013). Since many trees were planted in family land which are obviously home gardens, this has a possibility of having caused retarded growth or death of some tree seedlings in some areas, leading to either less number of the expected trees per household or replanting, which sometimes might be out of season which will lead to less performance in the programme.

**Table 2.4: Challenges on trees planted far from the household**

<b>Challenge</b>	<b>Frequency</b>	<b>Percent</b>
Drought	11	11.0
Destroyed by livestock	37	37.0
Breaking, cutting, uprooting	21	21.0
Pests and diseases	5	5.0
Stealing of seedlings	6	6.0
Negligence	1	1.0
No threats	19	19.0

## **2.7 Conclusions**

Findings showed that the programme had a good success as the survival rate of the trees was good and encouraging. Behind all factors for the survival of trees there was a strong influence made by the Church by attributing tree planting to faith, leading to changing people's behaviour on environmental conservation. The high level of commitment in caring and management of the trees for instance the passion that the people had on the trees to the extent of replacing the seedlings upon any problem at their own expense, is most clearly linked to issues of faith.

Some challenges seemed to have affected the survival rate of the planted trees. Some were natural disasters such as drought, while others were human oriented for instance theft, livestock grazing and deliberate breaking of the trees. Their nature and occurrence is still something to think about and act upon in order to overcome them so as to increase the possibility of having more tree survival.

## **2.8 Recommendations**

There should be an up scaling and promotion of the model used by the ND of the ELCT in environmental conservation, to be adopted by other faith based institutions. Basing on



faith, it can be extended to other environmental issues apart from tree planting for instance cleaning up the environment and caring about the endangered plants and animals.

The challenges which have so far been exposed out should be dealt upon for the sake of having the increased survival of trees hence environmental conservation. Environmental education should be continued to remind the people about the importance of tree planting for the present and future generations. Human oriented factors could be attended by setting some rules/by-laws governing the environment to combat the challenges such as grazing on the planted tree, deliberate destruction of the planted tree seedlings and the stealing of the planted tree seedlings through uprooting them.

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## CHAPTER THREE

### **3.0 Community Perception on the Environmental Conservation Approach Adopted by the Evangelical Lutheran Church in the Northern Diocese, Tanzania**

Daniel Anael Mlaki<sup>1</sup> and Fatihiya Ally Massawe<sup>2</sup>

<sup>1</sup>MA. Rural Development Student, Sokoine University of Agriculture, College of Social Science and Humanities, Department of Development Studies, P.O. Box 3021, Morogoro, Tanzania: [dadmlaki@yahoo.com](mailto:dadmlaki@yahoo.com)

<sup>2</sup>Senior Lecturer, Sokoine University of Agriculture, College of Social Science and Humanities, Department of Policy, Planning and Management, P.O. Box 3035, Morogoro, Tanzania: [fatty@suanet.ac.tz](mailto:fatty@suanet.ac.tz)

#### **3.1 Abstract**

There had always been an open difference on how the environment is cared between the environment under religious institutions and the surrounding communities. The former seems to have good, well planned and conserved surroundings, especially in terms of vegetation, while the latter seems not to be cared as in the areas owned and developed by religious institutions. This calls for some efforts to address the difference. There is authority and ability in faith based institutions to address several issues and being accepted and acted upon by the people of different beliefs, especially by linking the issues with the people's respective faiths. This power and authority could have been fully utilized in addressing matters of environment, which is one of the most debatable issues in the world currently. The Northern Diocese (ND) of the evangelical Lutheran Church in Tanzania

(ELCT) started an intervention on tree planting as a way of environmental conservation by involving youths who are enrolled to confirmation classes every year. This survey was conducted at household level in the ND of the ELCT in Kilimanjaro Tanzania, to define community perception of the approach used by the Church as well as compliance strategies laid down by the Church to ensure environmental conservation. A cross-sectional research design was adopted whereas, a multistage sampling technique was employed from diocesan to parish level, by surveying 100 households. Both primary and secondary data were collected. The findings revealed that the Church had a well-defined institutional mechanisms indicating authority through which a top down chain of authority laid down a clear responsibilities from the diocesan to household level. Furthermore, a bottom up chain indicates the programme feedback mechanism from the household to the diocesan level. Through the perception index the findings elucidated that at large, the community had a positive perception on the approach used by the Church as a way of conserving the environment. Various key aspects concerning sustainability, environmental behaviour, among the people within the community, involvement of youths in the programme, and compliance of the programme with issues of faith showed a positive attitude towards the programme. The supportive perception of the programme by the community at large added much value to the good outcomes. The Church should continue the efforts to strengthen and continue the tree planting programme through the mechanisms and strategies which are in place, as well as inventing new ones by involving the community at large.

**Key words:** Perception, Community, Church, Trees, Planting, Environment, Conservation, Behaviour, Mechanism.

### **3.2 Introduction**

Environmental degradation is a challenge worldwide and it needs to be addressed from all possible perspectives so as to avoid the dangers or effects that can befall the environment in different parts of the world. During a press conference on his flight from Sri Lanka to the Phillipines, on 15 January 2015, the leader of the Roman Catholic Church in the world, his holy Pope Francis, spoke strongly against environmental degradation and its consequences saying, “God always forgives, we men forgive sometimes, but nature never forgives. If you give her a slap, she will give you one. I believe that we have exploited nature too much” (Salinas, 2015).

Religious faith has the ability to make a distinctive contribution to environmental strategy in a different perspective as opposed to the entire secular disciplines. For instance, scientific thinking is able to give only restricted and value-free direction about the creation, while religious faith and communities can, and have already begun to offer what is missing in science that is a value-laden, combined understanding of creation, humankind and our obligations as stewards of the earth (Rolston, 2010).

The World Wild life Fund (WWF) and the Alliance of Religions and Conservation (ARC) report which included a partial survey of 100 protected areas around the world that included sacred sites as well as sacred areas outside of protected areas that have high conservation values revealed that links between faiths and protected areas are neither unusual nor limited by either geography or faith; rather the links are significant and universal. Second, many religious believers look to local and global religious authorities for guidance not only concerning larger purposes and meaning but for how to live their daily lives in accordance with their larger purposes. For this reason, religious leaders have

the capacity to convey to their believers how their values can direct their behaviour toward the natural world in ways that conserve biodiversity (Dudley *et al.*, 2005).

In November 2009, ARC and the United Nations Development Programme (UNDP) joined with 31 faith traditions to launch and celebrate their long-term commitments for a living planet. The parties involved in this celebration came out with guide to creating a Seven Year Plans (2010-2017) which is based on environmental action, reflection and thought. The guide engaged seven essential areas in which faiths has influences from investments, through partnerships and media to education and celebration that is, offering ideas on how each can utilize their strengths to take specific steps toward increased protection of the environment (ARC, 2011b).

Being a religious institution, the Church has a great chance of organizing, mobilizing and utilizing the present resources to combat the problem of environmental degradation which has so far been an issue at stake across different communities in the world. The Church can manage to mobilize environmental conservation at different levels, using the present resources through persuasion of the community, especially through its members. According to the World Bank (2006), there are three paths through which religion can have its influence on environmental issues, that is through teaching about the environment and natural systems upon which life depends, provision of leadership in initiating practical environmental projects as well as seeking to persuade their members that each individual has a moral responsibility and a role to play somehow to contribute to conservation.

The ND of the ELCT has so far made an intervention in environmental conservation by establishing a tree planting programme through confirmation students who are enrolled to the classes every year. According to the bishop of the diocese as one of key informants

every student enrolled to the confirmation class has to plant at least ten trees basically in his or her home area. In order for the programme to be sustainable, the community has to be well involved in the programme. Along with this programme, through its strong leadership strategies the Church, ND of the ELCT in particular, offers environmental education, and influences environmental behaviour among its members.

Since the tree planting programme had to operate within the community, there was a need to explore the way the community perceive this programme, which will determine their participation therein, and success of the programme. The positive community perception of the project at large would shed the good light on their participation. This paper answers the following key research questions: How does the community perceive the approach used by the Church in environmental conservation? and What are the mechanisms put by the Church to ensure the compliance of the youth in tree planting programme?

### **3.3 Research Methodology**

#### **3.3.1 Description of the study area**

The study was conducted in the Northern Diocese (ND) of the Evangelical Lutheran Church in Tanzania (ELCT), in Kilimanjaro Region. The region is located in the north eastern part of Tanzania between latitude  $2^{\circ}25'$  and  $4^{\circ}15'$  south of the Equator, and longitudinally it lies between  $36^{\circ}25'30''$  and  $38^{\circ}10'45''$  east of the Greenwich. The region has common borders with Kenya in the north, to the southeast it shares borders with Tanga region, and to the south it shares borders with Arusha Region (URT, 1998). The ND covers most of the area of the region, as it covers four out of six governmental administrative districts. Having started a tree planting programme since 2003, the ND of the ELCT was intentionally focused to be a case study for this paper.



### **3.3.2 Research design, sampling procedure and sample size**

The field survey was done once at a time employing a multistage sampling procedure from the diocesan level down to parish level. Households that had registered their children for confirmation classes in different years from 2003 to 2015 were taken as the target population. Hai Church was randomly singled out among five church districts of the ND of the ELCT. Two parishes namely Nkweseko and Makuna were randomly selected out from this district. Systematic random sampling procedure was employed to come up with 100 households from both parishes, with regard to having youths whom were registered to confirmation classes, and participated in tree planting in different years since the beginning of tree planting programme by the Church.

Parish records of the confirmation youths from their respective households were used as determinants to obtain the desired sample size. According to the records from the two parishes, the number of youths who had been enrolled to confirmation classes from 2003 to 2015 was 620 and 380 in Nkweseko and Makuna parishes respectively. According to Bailey (1994), regardless of the size of a given population, a representative sample of 30 respondents is basically a minimum for the study which has to undergo statistical data analysis. Therefore, the total number of households to be involved in the study was calculated at 10% in each parish whereby in Nkweseko and Makuna parishes a total number of households were 62 and 38 respectively, making a sample size of 100 households.

### **3.3.3 Data collection**

Through questionnaire survey, primary data was obtained from 100 sampled households. Again, FGDs and key informant interviews were conducted in each parish using a checklist of questions. The FGDs involved congregational representatives with different

experiences and positions in their given parishes, whereas key informants were singled out from among key people of different positions and experience in the diocesan, district and parish levels. Parish records were basically the source of secondary data basing on annual reports of the enrolment of youths to confirmation classes differently from 2003 to 2015 and number of trees provided to each household.

### **3.3.4 Data analysis**

Data analysis for the community perceptions on the approach used by the Church in environmental conservation was done through perception index score, whereby the five dimensional kinds of response was employed basing on Strongly Disagree (SD), Disagree (D), neutral (N), Agree (A) and Strongly Agree (SA) responses. To establish descriptive pattern of the responses, Strongly Disagree and Disagree, and Strongly Agree and Agree scores were merged together to imply Disagree and Agree for the former and the later respectively, while neutral responses remained unchanged. Then descriptively, analysis was employed to run frequency and percentage on responses for each individual question. To establish levels of community perceptions total scores for all twenty statements were computed:

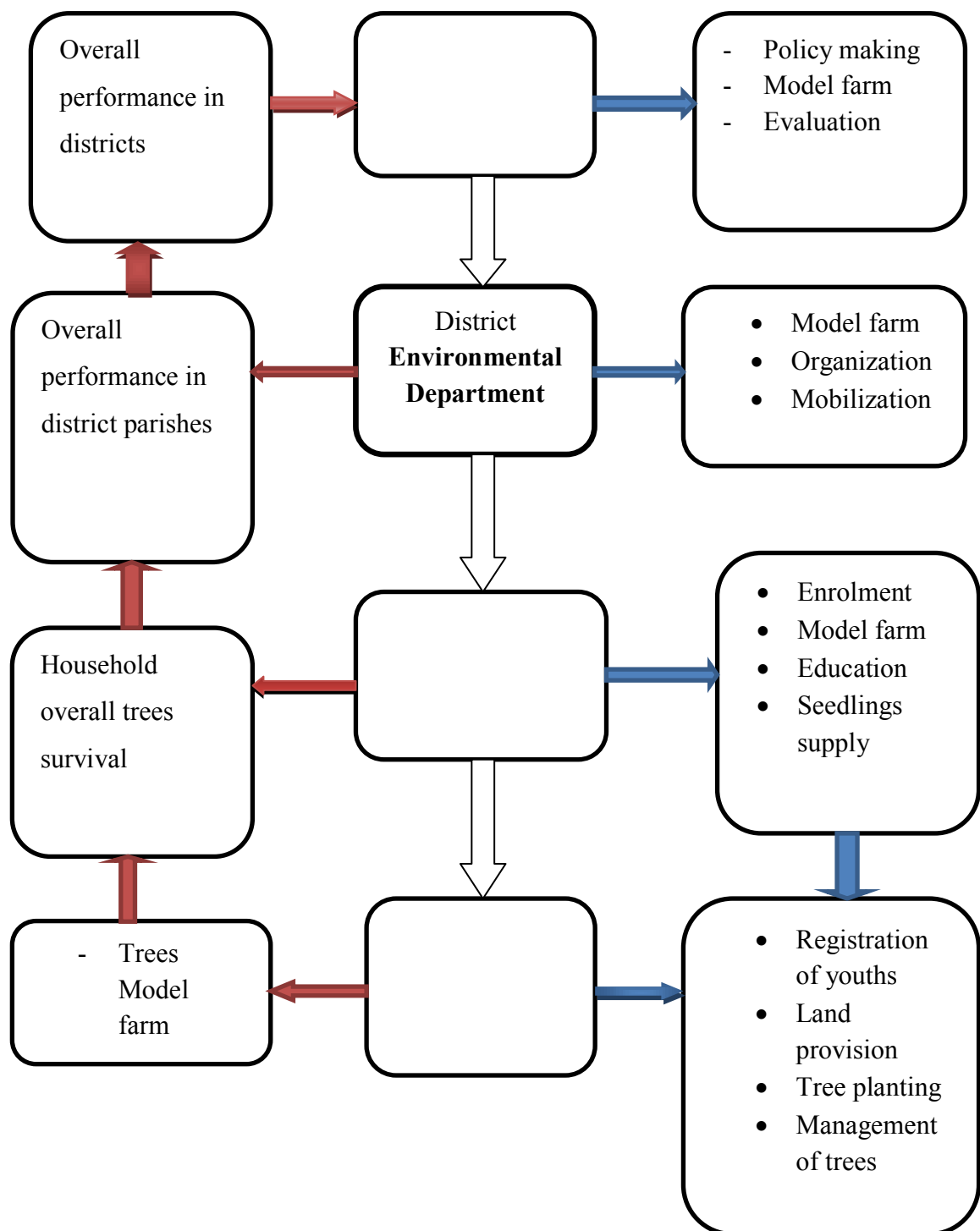
$$\text{Sum } (\Sigma) = X_1 + X_2 + X_3 + X_4 + X_5 + \dots + X_{20}$$

Given the number of statements and the levels of the scale, the maximum score was 100 while minimum score was 20. To establish the level of perception, the respondents who scored between 61 and 100 were considered to have positive perceptions and those who scored between 20 to 59 were considered to have negative perception. The respondents who scored just 60 were considered to be neutral.

### **3.4 Results and Discussion**

#### **3.4.1 Institutional arrangements to ensure youth compliance to the environmental conservation programme**

To ensure successful implementation and outcomes of intervention, the Church set a mechanism through which action will be implemented and feedback provided. As shown in Fig. 3.1 this involved a top down mechanism reflecting chain of authority and command with roles and responsibilities in the programme from the diocesan level to household level. The bottom up mechanism indicates feedback of the programme, implementation and outcomes from the household level to the diocesan level. The key responsibilities of each actor are described hereunder.



**Figure 3.1: ELCT ND tree planting programme actors mapping**

### **3.4.1.1 The diocesan environmental department**

It is believed that, strong or central religious institutions define an important community. And investment in organization enhances community mobilization for conservation action based on religious beliefs and belonging to religious communities (Bhagwat *et al.*, 2011b). The study revealed that a top down organization structure was used to enhance positive implementation of the programme. According to one key informant who is a pastor in charge of the district, the diocesan environmental department plays the role of policy making and evaluating the results of the tree planting programme.

The diocese head office through the environmental department has to ensure participation of every diocesan district, and the district office as well had to organize and keep on insisting every parish in the district to participate actively as it was agreed upon in the general assembly. The respective parishes have to organize the programme at household level whereby the households participated through the youths who are enrolled to confirmation classes in every year. The feedback of the performance has to go through a bottom up structure from the household where the trees are planted to the parish office, then to the district and finally to the diocesan environmental department for final evaluation. This well-defined system enhances participation and performance in the programme at all levels which finally has led to the success so far reached (Fig. 3.1).

On the other side of responsibility the diocese practices a role modeling through owning a piece of land where they have planted a good number of trees (Fig. 3.1). It was revealed through information given by the key informant who is the diocesan secretary of the environmental department that the inauguration of tree planting in the ND was done on this land in the year 2014, where the president of the United Republic of Tanzania by then, Hon. Jakaya Mrisho Kikwete planted a tree to inaugurate the movement. He was

accompanied by other governmental leaders who also participated in planting trees as well. Church leaders including the bishop of the ELCT ND, the ND staff, pastors and the entire members planted tree on this land. A total of 2800 trees were planted during the inauguration day.

#### **3.4.1.2 District**

The ELCT ND has five church districts each with a number of parishes under it. The information from a key informant who is one of the diocesan officers said;

*“Each district through its environment committee has to organize and mobilize the parishes under it to have an active participation in tree planting programme. Departmental meetings are the ways through which this is done as well as receiving feedback from the parishes. Church districts as well continued tree planting around the church premises and in all pieces of land owned by them”*  
(Fig. 3.1).

The good organization by the Church body has become a good contributing factor in fostering tree planting programme in different areas of the ND of the ELCT. Another key informant who is an experienced evangelist commented on the district model farm saying;

*“The farm is really magnificent, it is full of trees of various species and it has totally changed the areas as it was previously looking like a semi desert. It is doing well. It looks like an island in the midst of the dry land; we are proud of it and encouraged that this can be done elsewhere”.*

As long as the model farms stand as the true icons that it is possible to change the environment in the same area, the surrounding community and whoever will see them will have something to learn and be encouraged to try to plant trees. The findings further showed that district offices are responsible to receive progress reports of the programme from the district parishes.

### **3.4.1.3 Parish**

The information from a key informant who is a parish pastor and the FGDs which were conducted, involving parish members showed that, after a resolution was made on the new strategies of conserving the environment, there had been insistence on the whole issue of environmental conservation. This had been done through teachings and sermons during Sunday services and various occasions, in community worship groups, confirmation classes and even to Sunday school children classes. This concurs with the Word Bank (2006) which pointed out that, religious institutions can influence environmental issues through teaching, leadership, and initiating practical environmental projects as well as seeking to persuade their members through provision of guidance on individual moral obligation to contribute to conservation.

Two key informants who are parish pastors reported at different times that each respective parish was responsible for identifying and enrolling confirmation youths from the households, giving them environmental education, and distributing tree seedlings to every youth according to the agreed number of trees by the parish environment committees. Parishes had to prepare tree nurseries where seedlings would be available free of charge or by paying a small amount of money for nursery services, depending on the plans of a given parish. In some parishes there was also a model farm where trees were planted under the parish supervision and management, also an allowance of land to be used for tree planting by the youths whose household land was limited to more trees planting. In case of the absence of a parish farm, trees were planted in the parish environment. They also have gone further by planting trees in the community common land such as around grave yards, along river banks, around river catchment areas and in open lands where trees once existed but they had been cut without replacement. As it was observed during data collection, the sites have surely remained as the icons of environmental conservation as the trees which were planted here have grown up to desirable level (Fig. 3.1).

In the FGD, one participant who was also a retired teacher also supported by other group members reported that, the progress of the trees was to be observed by the parish church elders in their units. The report was to be passed to the parish environmental committee, which will then be sent to the district level, and thereafter to the diocesan environmental department which will finally determine overall progress of the programme.

#### **3.4.1.4 Household**

In order to ensure the continuation of the intended environmental conservation programme the ND of the ELCT embarked on using the confirmation youths who are enrolled every year to be involved in tree planting, where every enrolled student has to plant at least ten trees around his/her home area.

It was revealed in the FGD by one participant from one of the parish congregations that, the households are responsible to register their children for confirmation classes after the announcement is made from the parish office, mostly at the beginning of each year in late December or early January. She further added that, since the children do not own land, the households, especially heads thereof, have to allocate the land in which the children will plant the tree seedlings they receive from the parish. They are as well there to see a good care taking of the planted trees by their children once they are available to carry out the responsibility. If they are away for some reasons for example schooling or shifting from home for some other reasons, trees were to be taken care of by other household members (Fig. 3.1).

The findings further showed that since the commencement of the program in 2003, there had been a good involvement of youths in the programme in general. The information from church elders who were part of key informants revealed that this achievement has



been backed up with some basic factors for instance; tree planting was part and parcel of the students' continuous assessment in the confirmation class. Everyone in his/her household was supposed to show to the church elder of the respective area the given number of trees which had survived out of the trees he/she had been given to plant before one had to celebrate confirmation officially after two years of attending classes. This is an indication that, within our communities if we are focused on how to utilize the available resources for sustainable development purposes, human resource in particular, we can make a difference in several situations and achieve our desired goals.

Another key informant, a parish evangelist who is responsible in teaching in confirmation classes pointed out that;

*“Involvement of youths in the tree planting programme was positively perceived by the community with the reason that every youth should be involved even back from childhood; they should be taught to the point that everyone speaks environment. It should be a sustainable trend of involving the youths in this programme because the young generation is mobile; once they are grown up, they go outside their home areas and they can become good ambassadors of environment to different places in our country and beyond”.*

This implies that, despite the fact that all age groups are equally important and responsible in conserving the environment, it is worthy investing in the young generation as they can contribute to having sustainable environmental conservation with regard to their time and ability to act. Not only that but also this can enhance a wide range of influence since the young generation has a possibility of interacting with many people in many places along as they grow and move from place to place.

One participant in the FGD added that, trees that they plant will make a memory in their lives. Once they plant and go away, on their way back it will remind them of their previous responsibility on the environment. As long as they are involved within a very

well defined and memorable time that is during confirmation classes where everyone must participate, this strategy can bring about a very big positive change in the environment.

It had been noted from some of the key informants who were church elders whose respective parishes participated in the programme that, in order for a believer who is a human being to be still and worship God meaningfully, one needs a well prepared environment. Referring to the Holy Bible (Genesis 1:1-25), it was pointed out that God created all other things from the first day to the fifth day and finally he reached the climax of creation by creating mankind who would worship him and become the steward of the created world and the entire created beings.

Since mankind is a psychosomatic being there should be good living conditions that will favor his/her life and make his/her life a meaningful entity before the creator. Let us just take an example, if people will fall victims of the effects of global climatic changes like floods, drought, and diseases which as well may lead into deaths, starvation and poverty, they will not remain in a stable situation. We really need a sustainable environment for sustainable development. This program might be one of the best ways to attain this.

### **3.5 Community Perception on Environmental Conservation Approach Adopted by the Church**

The findings revealed that 97% of the respondents concur with the statement that tree planting is suitable to the households; they see it as one of their daily household responsibilities (Table 3.1). According to the FGD discussion the participants showed that, from the economic point of view, the programme is perceived as good as it benefits the households and community at large through tree products such as firewood, timber, building poles and sticks, fruits, animal fodder, medicine and honey through making

wooden beehives or through natural beehives found in trees. On the other hand, live fences were regarded important by the community as they protect huts and houses from strong winds and as well they protect field crops from livestock and theft (Kajembe *et al.*, 2004; Maroyi, 2009). Live fences were common in the study area and according to the findings, some of the trees were planted as live fences. Young men and women get employment opportunity by engaging themselves in tree nurseries where they plant, tend and sell tree seedlings. This is a good indicator of the community awareness on the importance of tree planting which will increase their efforts in participating in the program with the mindset that in spite of environmental conservation, it has something to do with their wellbeing in a different way.

The ELCT ND's environmental conservation approach has been viewed as one of the ways through which household environment is enriched. Trees that have been planted in the household land especially in homesteads have been reported to have brought about a very big change in the household environment. Trees which were planted at the beginning of this tree planting campaign run by the church are now big enough and they announce new life on the land. A middle aged man who is an experienced pioneer in the tree planting programme, who participated in the FGD in Nkweseko parish testified that those trees which are in the family gardens for example, provide shades which attract some of us even to have our tea or coffee under their shades instead of staying inside the house.

Results indicated that 95% of the respondents perceived the programme as being sustainable towards environmental conservation (Table 3.1). It had also been found through FGD that the community perceived this programme as being in line with the world plan against global warming where Church has joined these efforts to help in changing the destroyed environmental situation, as well as preventing further destruction

in the present and future generations. It is also perceived as the strategy of conserving what has not been destroyed as well as restoring what has been destroyed.

About 93% of the respondents agree on the fact that youths need to be involved in the program regardless their ability to make decisions on the plated trees (Table 3.1). This shows a positive mindset to the programme because the youths are the targeted group which acts as the central players in the programme, as they are the ones who play the role of receiving, plating and basically caring for the trees. The findings further revealed that the participation of youths in the programme was encouraged, as one key informant, an Evangelist who is a long time parish servants pointed out that;

*“It is our responsibility to teach the children to understand God’s creation that trees are blessings and they should be groomed to understand that, wherever there are trees there is blessings and where there are no trees there is no blessings. It will as well help the young generation to become role models of environmental conservation wherever they will go.”*

This implies that, there is therefore a need to encourage and equip the young generation with important tools so that they can carry out the responsibility of caring for the environment in this generation and extend it to the future generations.

**Table 3.1: Descriptive results on community perception on environmental conservation approach adopted by the Church**

S/N	Statement	D		N		A	
		F	%	F	%	F	%
1	The Church's environmental conservation approach is sustainable	1	1	4	4	95	95
2	Management of the trees does not interfere with family schedule of activities	37	37	2	2	61	61
3	The environmental conservation through tree planting is suitable to the households	2	2	1	1	97	97
4	The Church's tree planting programme is not sustainable	91	91	3	3	6	6
5	Management of the trees interferes with family schedule of activities since children are not fully available	84	84	2	2	14	14
6	Youths need to be involved in the programme regardless of their skills and knowledge on environmental conservation	6	6	1	1	93	93
7	The environmental conservation approach used by the Church is not suitable to the households	96	96	1	1	3	3
8	Children are being burdened with the task of planting and caring for trees while they are not decision makers	96	96	3	3	1	1
9	Involvement of the children attending confirmation class suffice the tree planting programme	77	77	4	4	19	19
10	This program is still practical regardless land scarcity	6	6	6	6	88	88
11	The program has nothing to do with environmental behavior among youths	11	11	8	8	81	81
12	It is not enough to involve only children attending confirmation class in the programme	14	14	1	1	85	85
13	The Church could separate environmental issues from religious matters	84	84	3	3	13	13
14	Regardless of their ability to make decisions, children should be involved in planting and caring for trees	10	10	3	3	87	87
15	Children find it interesting to implement tree planting programme	1	1	12	12	87	87
16	The tree planting program will enhance environmental behaviour among youths	4	4	4	4	92	92
17	Tree planting requires knowledge and skills which children do not have	39	39	2	2	59	59
18	Environmental issues are also part and parcel of religious matters	3	3	3	3	94	94
19	The intervention by the Church on environment is impractical to land scarcity areas	76	76	11	11	13	13
20	The children are not willing to implement the programme	92	92	3	3	5	5

According to the statement on environmental issues being part of religious matters, 94% of the respondents showed a positive response (Table 3.1). The high performance of the respondents with positive attitude against the entire respondents is an indication that majority of the people know how their faith is related to nature. It might also be a result of the acquired knowledge through teachings and sermons that they have had received from the Church since childhood, as well as the sense of awareness which came along with the programme. According to the findings on the success of this programme, it is this link that makes people feel passion on the trees to the extent of replacing the seedlings at their own expense once they die.

Findings showed that 92% of the respondents accepted that the programme plays an important role of imparting environmental behaviour among the youths who are involved in it (Table 3.1). Some viewed this approach as an important tool which provides environmental education to the children and the community at large. This programme will prepare them to become responsible adults in caring for the environment. One key informant, a lady who is a long time parish Sunday school teacher pointed out that;

*“It is a very good plan as it gives a permanent memory to those who were involved and they can share it to the next generations as long as the trees that they have planted stand there as living signs.”*

The pride that one feels after seeing that his or her trees have successfully grown and they are still there, will no wonder instigate others to desire reaching the same goal so that they can one day in the future share the same success stories to others, hence more efforts in tree planting and management.

The programme builds up interest on the environmental issues among youths for example the act of voluntary caring for the trees as their own property as it was pointed out by one

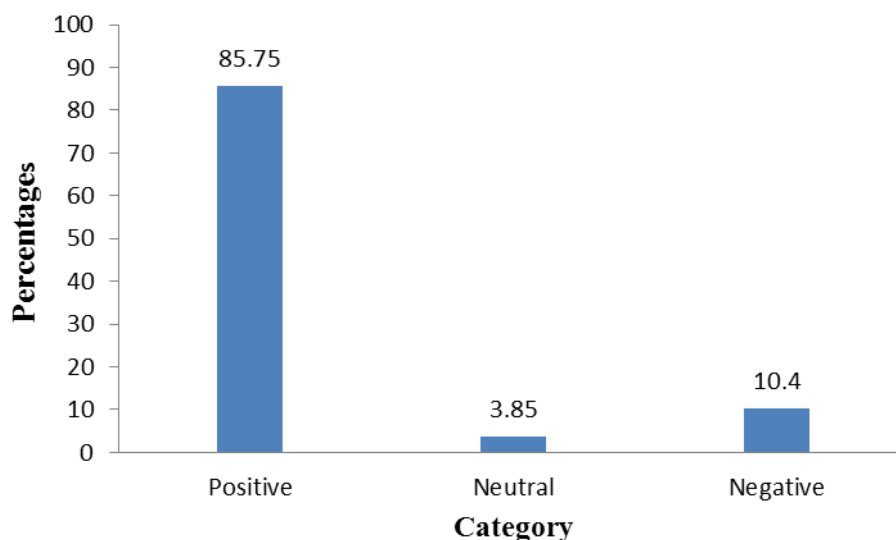
participant during the FGD saying that soon after school in the evening, my son who by then was a first year confirmation student, would take his bucket straight to the field to attend his trees, and time to time we would hear him talking about them. It is an approach which arises and builds interest on environmental issues in the sense that it creates a sense of voluntary participation in caring for nature. It calls for the feeling of collective responsibility among community members.

On the other hand there had been the respondents who showed up some noted negative perception on some issues as addressed on the perception index. Thirty seven percent of the participants disagreed on the statement that management of the trees does not interfere with the household schedule of activities, and 59% of the respondents agreed on the statement that tree planting requires knowledge and skills which children do not have. The former perception might have been consequences of migration of the youths to other regions or districts far from home. It was reported by one of the parents in the FGD that in some cases some of the youths transferred from their parishes of origin after receiving and planting tree, leaving the responsibility under few and sometimes old household members. The latter perception could be linked with the comment from the key informant, a parish worker who reported that;

*“Some parents do not trust that their children can undertake the responsibility of tree planting and their management, so they take over from the very planting stage, but in fact the youths are very capable; we equip them with both theory and practical knowledge on how to do it”.*

This shows the importance and the role played by the Church to prepare the youths so that they do not just receive the tree seedlings and plant but they as well have the preliminary knowledge about their management. It as well helps them to feel the sense of responsibility in that sense.

Generally, the findings revealed that the overall perception was positive since 85.75% of the respondents were positive to the tree planting programme run by the Church (Fig. 3.2). Environmental education, role modeling through pilot tree planting in Church owned areas as well as a well-defined institutional chain of authority, responsibility and giving of feedback in the Church organization has most likely contributed to the community perception on tree planting programme. Nevertheless, since the programme is an ongoing process and behaviour building is not an overnight issue, then it can be perceived that with time, the perception rate in case of agreeing to the programme is likely to increase especially after receiving education as well as seeing the outcomes of the programme. This is backed up by the fact that the religious institutions work according to their core teachings, beliefs and practices (ARC, 2011a). When the community or cohort leaders make certain behaviours a priority, others follow (Diani 2003 and Myers, 2003). People also become and stay involved because they want to belong and maintain their relationships with others (Aminzade and Perry, 2001).



**Figure 3.2: Overall community perceptions of the tree planting programme**



### **3.6 Conclusions**

Findings generally showed positive perception of the tree planting programme adopted by the Church. Basically, majority of the community members see the programme as part of their household responsibilities and a good approach through which the nature can regain its lost form and provide to them what had been lost. This is in line with the theory of conservation behaviour, self-determination theory as it points out that people may perform behaviour for their own sake, and again they can perform behaviour so as to gain positive results while avoiding the negative ones.

It can as well be learnt that, linking environmental issues with faith through some implemented mechanisms had enhanced compliance, commitment, participation and performance in the tree planting programme. The intervention by the Church, the ND of the ELCT in particular, has enhanced the sense of awareness and building up the environmental behaviour among the community members through the tree planting programme. The positive community perception on the tree planting programme by majority of the community members as it was revealed in the findings of this study reveals this

The mechanism put in place by the Church body so far has become an important tool to enhance the programme from different approaches. This has been done for instance through good leadership strategies, offering environmental education to its members, influencing and persuading the members to build up environmental behaviour on faith basis, as well as setting a role model in tree planting.

### **3.7 Recommendation**

The Church, specifically the ELCT ND, should extend the model through the current and even other new implemented mechanisms in the future, and think about other areas with

regard to environmental conservation so as to implement and involve the community, as it had been noticed that there is a sense of positive and supportive perception on the tree planting programme. This could be purposely done by the Church and the entire religious institutions in order to bridge the gap between the environmental appearance of the surrounding community and that of religious institutions as it had been observed that the latter excels than the former in this case.

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## **CHAPTER FOUR**

### **4.0 OVERALL CONCLUSIONS AND RECOMMENDATIONS**

#### **4.1 Conclusions**

According to the results from the findings tree planting had shown a good performance. This success can be closely linked to the intervention made by the Church through the model that it is employed at household level. This was done by involving confirmation youths every year of enrollment to plant at least ten trees and manage them to survival as a pre-condition to celebrating the confirmation after two years of receiving confirmation teachings.

Along with the spiritual influence by the Church, there were some other factors which contributed to the noticeable survival rate of the planted trees at 78%. Availability of family land for tree planting, and household manpower to manage the planted trees, along with other factors such as the favorable planting season enhanced survival of the trees. There was no a sole factor for the survival of the planted trees but a combination of some factors.

The Northern Diocese (ND) of the Evangelical Lutheran Church in Tanzania (ELCT) had a role to play in the whole issue of environmental conservation due to the authority that it has over the community members in matters relating to faith. It can be learnt that, linking environmental issues with faith through some implemented mechanisms had enhanced compliance, commitment, participation and performance in the tree planting programme. Through its well defined institutional structure from the diocesan to parish level the Church enhanced responsibility and commitment which led to good outcomes in the tree planting programme.

The intervention by the Church, the ND of the ELCT in particular has boosted the sense of awareness and building up the environmental behaviour among the community members through the tree planting programme. The positive community perception of the tree planting programme by majority of the community members as it was revealed in the findings of this study is supportive to this comment. Most likely, the negative and neutral perception of some people on the tree planting programme which was run by the Church was due to lack of enough knowledge on environmental issues and how they can be linked to faith matters.

The challenges that the households faced in the management of the trees were of different types and origin. Some were natural disasters for instance drought, while others were human factors such as theft, destruction through deliberate breaking and uprooting the planted trees and grazing animals. They have negative effects on the survival of the trees as their presence led to death or destruction of the trees which were expected to grow to maturity after being planted, for instance those which were consumed by the livestock and those which were uprooted and stolen.

#### **4.2 Recommendations**

The survival rate of the planted trees which was attained through the tree planting programme at household level was generally good, but it calls for more plans and efforts to be implemented, so as to excel to even higher levels in the future. The Church should continue the existing conservation struggles by involving the community at large to plant and care for as many tree seedlings as possible in the available land as one of the ways through which the environment can be conserved. There should always be a wish to aim at high in order to attain higher results in environmental conservation. The Church, the ELCT ND in particular, should go beyond tree planting in environmental conservation, as

there is a clear light that by making an intervention through spiritual influence it will also likely succeed.

The Church could do their part by continuing reminding the believers during services and other religious occasions that care should be taken to the planted trees as they are beneficial throughout generations. The local government could formulate and set by-laws to govern the environment from the grass root level, so as to overcome such challenges such as the control of livestock which destroy the planted trees.

The power and authority that faith based institutions have to persuade people in various issues, especially by relating or connecting them to divine faith, should be used to promote or to upscale tree planting as well as in other environmental conservation strategies. The government could as well use this opportunity by working closer with the religious institutions in various programmes with regards to environmental issues. The government should adopt the conservation approach used by the Church and mainstream the faith based organizations to be part of environmental conservation programme. This could bring about a sense of collective responsibility between faith based organizations and the government, which would lead the community to act accordingly as they are responsible from either authorities.

Government policy makers on environmental issues are hereby recommended to adopt the conservation model that has been demonstrated by the Church especially acting from the grass root level. It can as well be extended to other areas of environmental conservation as the Church has just taken one part of conservation that is tree planting.

## APPENDICES

### Appendix 1: Questionnaire for household survey

#### A: Demographic factors (household characteristics)

1. Age .....
2. Sex: (i) Male (ii) Female
3. Education level: (i) Primary (ii) Secondary (iii) College (iv) University
4. Marital Status: (i) Single (ii) Married (iii) Widow/widower (iv) Separated/divorced
5. Relation to house-hold head: (i) Self (ii) Spouse (iii) Son/daughter (iv) Grandparent (v) Relative
6. House-hold size .....
7. Region .....
8. District .....
9. Village .....
10. Parish .....

#### B: Socio-economic factors

1. (a) Did you have child/children who attended confirmation within past ten years?  
Yes.... No.....
- (b) How many children from your family attended confirmation within a time mentioned above? .....
- (c) When was he/she/ were they enrolled to the confirmation class? (Year).....
  - (i) First child ..... (Year)
  - (ii) Second child ..... (Year)
  - (iii) Third child ..... (Year)

(Please add number to the list if you had more than the stated number of the children)

2. When did he/she/they graduate from the confirmation class? (Years) .....
  - (i) First child ..... (Year)
  - (ii) Second child ..... (Year)
  - (iii) Third child ..... (Year)

(Please add number to the list if you had more than the stated number of the children)
3. What was the relationship with the child?
  - (i) son
  - (ii) daughter
  - (iii) grandchild
  - (iv) relative
4. (a) Did your child/children participate in the tree planting program run by the Church? Yes... No...
 

(b) If Yes, how many tree seedlings was your child/were your children given?

  - (i) First child ..... (number of seedlings)
  - (ii) Second child ..... (number of seedlings)
  - (iii) Third child ..... (number of seedlings)

(Please add number to the list if you had more than the stated number of the children)
5. Why was your child/were your children given such number off tree seedlings?
  - (i) It was due to the household land size
  - (ii) It was according to each child's ability to care for the trees
  - (iii) It was according to the directives given by the church/parish
  - (iv) It depended on the availability of the tree seedlings
  - (v) Every child was free to take whatever amount of tree seedlings he/she wished



6. How many trees were alive during your child's/children's graduation/confirmation?
  - (i) First child ..... (number of trees)
  - (ii) Second child ..... (number of trees)
  - (iii) Third child ..... (number of trees)
 (Please add number to the list if you had more than the stated number of the children)
7. (a) Did your child/children continue with further studies after confirmation?  
Yes..... No....
  - (b) If Yes, where?
    - (i) Within the same village
    - (ii) Outside the village but within the same district
    - (iii) Outside the district but within the same region
    - (iv) Outside the region
    - (v) Outside the country
8. How much land does your family own currently?  
State the land size in acres .....
9. How much land did your family have during the time when your child was enrolled to the confirmation class?  
State the land size in acres.....
10. In which land did you plant the trees given to your child when he/she was enrolled to the confirmation class?
  - (i) Family land
  - (ii) Clan land
  - (iii) Parish land
  - (iv) Village land
11. How far is it from the land where you planted the trees to your household in kilometers/meters? .....

12. Who was the owner and controller of the land in which the trees were firstly planted?
  - (i) Household head
  - (ii) Spouse of the household head
  - (iii) Son/daughter of the household head
  - (iv) Close relatives
13. During the time your child was/your children were attending confirmation training and given trees to plant, who was taking care of the trees?
  - (i) Household head
  - (ii) Spouse of the household head
  - (iii) The child himself/herself
  - (iv) Brothers and sisters of the child
  - (v) Grandparent/parents
  - (vi) Household servant(s)
  - (vii) Close relatives/family friends
14. (i) How many trees survived to date? .....
- (ii) How old are the trees which survived?.....( years).
15. If not all trees survived, when did they die?
  - (i) Before graduation/confirmation
  - (ii) After graduation/confirmation
  - (iii) Soon after planting
16. (a) Had you planted trees before receiving and planting the trees from the Church program? Yes /No.
  - (b) If Yes, where did you plant them?
    - (i) Family land
    - (ii) Clan land
    - (iii) Parish land
    - (iv) Village land

17. After your child's graduation, who was taking care of the trees?

- (i) Household head
- (ii) Spouse of the household head
- (iii) The child himself/herself
- (iv) Brothers and sisters of the child
- (v) Grandparent/parents
- (vi) Household servant(s)
- (vii) Close relatives/family friends

**C: Community perception on the approach used by the Church on environmental conservation**

S/N	Question	SD	D	N	A	SA
1	The Church's environmental conservation approach is sustainable					
2	Management of the trees does not interfere with family schedule of activities					
3	The environmental conservation through tree planting is suitable to the households					
4	The Church's tree planting program is not sustainable					
5	Management of the trees interfere with family schedule of activities since children are not fully available					
6	Youths need to be involved in the program regardless their skills and knowledge on environmental conservation					
7	The environmental conservation approach used by the Church is not suitable to the households					
8	Children are being burdened with the task of planting and caring for trees while they are not decision makers					
9	Involvement of the children attending confirmation					

	class suffice the tree planting program					
10	This program is still practical regardless land scarcity					
11	The program has nothing to do with environmental behaviour among youths					
12	It is not enough to involve only children attending confirmation class in the program					
13	The Church could separate environmental issues from religious matters					
14	Regardless their ability to make decisions, children should be involved in planting and caring for trees					
15	Children find it interesting to implement tree planting program					
16	The tree planting program will enhance environmental behaviour among youths					
17	Tree planting requires knowledge and skills which children do not have					
18	Environmental issues are also part and parcel of religious matters					
19	The intervention by the Church on environment in impractical to land scarcity areas					
20	The children are not willing to implement the program					

#### **D: Environmental factors**

1. In which season did you plant the trees?

(i) Rain season

(ii) Dry season

2. How did the climatic conditions affect the survival of the trees from planting time to date?

(i) There was enough rains

(ii) There was drought

3. How did the types of tree seedlings given to your child/children affect their survival?

- (i) Native species survived well
- (ii) Exotic species didn't grow well
- (v) Weak seedlings died
- (vi) Both native and exotic species survived well
- (vii) There was no any effects

4. What were the threats to the trees grown far from the household?

- (i) Drought
- (ii) Trees being eaten by animals
- (iii) Being broken/cut down by the people
- (iv) Pests and diseases
- (v) Stealing of the tree seedlings
- (vi) Carelessness in caring for the trees
- (vii) There was no any threat

5. What other factors do you think affect the survival of the trees planted in your area?

- (i) Laziness and bad caring
- (ii) Boundary conflicts
- (iii) Theft
- (iv) Shortage of water
- (v) Poor soil fertility
- (vi) Closeness to the services
- (vii) Poor seedlings
- (viii) No any other factors

**E: Challenges faced by the households in the management of the trees**

1. How was land size a challenge to tree planting program at your household?

- (i) The area is too small and there is no more space
- (ii) There is overplanting of trees in the area
- (iii) Cutting down trees in order to build settlements
- (iv) No challenges

2. How did caring for the trees interfere with your daily household schedule?

- (i) Shortage of time
- (ii) Shortage of water
- (iii) Shortage of human resource
- (iv) No interference

3. What other challenges did you face concerning tree planting program in your area?

- (i) Shortage of time
- (ii) Shortage of water
- (iii) Difficulties in protecting the trees
- (iv) Theft/cutting down of the small trees
- (v) Stealing of the tree seedlings
- (vi) No any other challenges

**Thank you for your cooperation**

**Appendix 2: Guiding questions for key informants**

- i) How do you perceive the Church's environmental conservation approach?
- ii) What do you think to be the factors affecting the success of tree planting program?
- iii) What are your views on the involvement of youths in tree planting?
- iv) What challenges are associated with the tree planting program?

**Thank you for your cooperation**

**Appendix 3: Guiding questions for focused group discussion**

- i) How do you perceive the Church's environmental conservation approach?
- ii) What do you think to be the factors affecting the success of tree planting program?
- iii) What are your views on the involvement of youths in tree planting?
- iv) What challenges are associated with the tree planting program?

**Thank you for your cooperation**