

**AFFORESTATION AND ECONOMIC DEVELOPMENT OF FARMERS IN  
ETAM TOWN COUNCIL**

**BY  
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**A RESEARCH REPORT SUBMITTED IN PARTIAL FULFILLMENT OF THE  
REQUIREMENTS FOR THE AWARD OF A BACHELOR  
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## DECLARATION

I Ebong Geoffrey, do hereby declare that the work in this research report is my own and that it is original work, which has never been submitted for the award of any degree or Diploma to Kampala International University (KIU) or to any other educational institution, except where due acknowledgement is made in the report.

Name : Ebong Geoffrey

Sign :  .....

Date : 30/08/2019 .....

## APPROVAL

This piece of work has been under my supervision and now it is ready to be submitted to the internal examiners.

Sign.....

Deborah Taligoola (Mrs)

Data.....

### **DEDICATION**

I dedicate this research report to my wife Mrs. Selika Ebong, our children, Oduru Deogracious, Ayugi Dorothy Faith, Alaba Mercy and Ebong Shadrack for their endurance and patience during my absence for this course.

This report is also dedicated to my Head teacher Madam Akello Betty, the staff both teaching and non-teaching and the Secretary who stood with me in many ways. You are all in every corner of my heart.

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## **ABSTRACT**

This study meant to find out effects of afforestation on economic development of the farmers. The study was carried out in Etam Town Council, covering four parishes of Chakwara, Arwot, Etam and Awiodyek.

A total of five community leaders out of which the most two were sampled from each parish and three from the Town Council; and a total of ten farmers at least two were sampled from each parish.

The study intended to find out the types of trees planted, to assess the benefits farmers are getting from afforestation, to examine the attitude of the farmers towards afforestation and to evaluate the challenges faced in afforestation.

Interview guides and questionnaires were used to collect data and the data collected was analyzed using qualitative designed.

The findings were summarized in figures. The findings declare among other things that fruit trees and wood trees were the most common types of trees that were being planted by the farmers and that was a source of food, income to the farmers.

Another finding was that food, income (money), family welfare were some of the benefits that the farmers are getting from afforestation.

The finding also said that over 50% of the farmers were interested in afforestation.

Another finding was that shortage of land, pests and diseases; prolonged sunshine, negative attitudes by some farmers were some of the factors affecting afforestation.

Another finding revealed that the economic status of people practicing afforestation was improving rapidly.

Recommendations made in accordance with findings included; advice to the environmental officers and district leadership to provide seedlings and education to farmers, to provide market for the trees, advising farmers to use the little piece of land they have to plant at least some few seedlings yearly alongside crops for consumption. The recommendation to the government was that the redundant government land should be given to the capable farmers who can plant quality trees that will bring some good return to the farmers in a near future

and farmers should be supplied with quality seedlings to farmers to be planted in those places and farmers should also be given some loans to help them plant more trees.

Lastly the government /authorities should always organize seminars to educate farmers on the proper/modern ways of planting trees and how to manage trees.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.0. Introduction**

The study was on afforestation and Economic Development of farmers in Amolatar District, the case study of Etam Sub County.

**This chapter covers;**

The Background, Problem Statement, Purpose of the Study, Objectives of the Study, Research Questions, Scope of the Study, Conception of the Study, Limitations and Definition of Terms.

#### **1.1. Background.**

According to the study by Premier Mike Rann (2002 - 2011) in Adelaide, South Australia launched an Urban Forest Initiative in 2003 to plant 3 million native trees and shrubs by 2014 on 300 project sites across the metro area. The project ranged from large habitat restoration project to local biodiversity projects.

Thousands of Adelaide citizens have participated in community planting days. Site included parks, reserves, transport corridors, schools, water course and coastline. Only trees native to the local area are planted to ensure genetic integrity, Premier Rann said the project aimed to beautify and cool the city and make it more livable, improve air and water quality and reduce Adelaide's greenhouse gas emissions by 600,000 tons of carbon dioxide a year.

He said it was also about creating and conserving habitat and preventing species loss.

Several new studies suggested that forests attract rain and this may explain why drought is occurring more frequently in parts of the world such as western Africa. A new study by Carol Rasmussen, NASAS's Jet propulsion Laboratory gave the first observation as evidence that the Southern Amazon rain forest triggers its own rainy season using water vapor from plant leaves. The finding helped to explain why deforestation in this region is linked with reduced rainfall. Study by Douglas Sheil and Daniel Morditjarso hypothesizes that forest cover played a much greater role in deterring rainfall than previously recognized. It explained how forested regions generate large scale flows in atmospheric water vapour.

Makarieva and Corshkov have developed a hypothesis to explain how forests attract moist air and increase rainfall in areas covered by trees.

Olabayo Blowgun, president at Eko Youth Agricultural Multipurpose Cooperative Society (2018), said that because forests serve as a source and sink for carbon emissions.

Let's put it this way, imagine forest as a bank vault and carbon emission as money, the more bank vaults we have, the more money we can store in them especially when the money is so much it begins to cause problems in the environment.

People cutting down forests is the same as blowing up a bank vault, the contents come flying out. An example is what happened at Lake Rouyn at Cameroon where thousands died in their sleep due to the sudden emission of the carbon gas that it had been storing for a long time. Basically forests store a lot of carbon in the soil. We have excess Carbon in the atmosphere, so it removes carbon from our environment and store it in the soil beneath them.

Bruce walker (2016), Afforestation is the process of converting non forest land in to a forest. Afforestation is highly important to maintain biodiversity and ecological balance. It is also important to prevent global warming, soil erosion and pollution. Afforestation purifies the environment and helps in reducing the carbon dioxide level.

Joan Vines, Academic trainer (2016), Afforestation is the process of establishing a forest on land where there is no forest, by planting trees or sowing their seeds and caring continually until the trees grow collectively as a whole in to a forest as planned. It helps in addressing the environmental issues of the world, especially in preventing further global warming and reversing the effects of global warming. It also helps in avoiding desertification as human needs grew by the population growth and advances in civilization people have been exploiting nature and converting forest in to agricultural land, mines and industrial areas for various resources for their recreation, enjoyment and comfort in living. As global environment issues due to industrialization are growing more seriously, there is an urgent need for the mankind to resolve them by protecting the environment by way of afforestation. The afforestation in and around industrial region serves in aesthetically enhancing the foreground and background landscape features while contributing to the overall improvement to the environment.

Bruce walker (2006) pointed out the following relevance of afforestation;

**Afforestation helps to maintain biodiversity and ecological balances.** The more the place is afforested the more stable the biodiversity and ecological balances of that particular place.

**Preventing global warming;** Bruce walker believed that global warming is increasing as a result of lack of forests in most part of the world.

**Controlling soil erosion and soil pollution,** afforestation helps to control soil erosion by ways and it reduces soil pollution by covering the ground or soil and releasing the plant leaves which get decomposed in to the soil.

Bruce walker also said that Afforestation helps to **purify the environment** by taking in carbondioxide which is always produced by animals and releasing oxygen to the environment for animals to take in.

Lata Mishra (2018) also pointed the importance of Afforestation as being:-

Provision of fresh air afforestation provides fresh air (oxygen) instead of polluted air carbon dioxide.

**Increasing the chances of rain;** he said that the chance of rainfall in forested areas is higher compared to places that have got no forests.

**Cooling down temperature,** Afforestation helps to cool down temperature. Places with forests (trees) have got cool temperature compared to places without forests (deserts) and cool temperature is good for human life than hot temperature.

**Reducing soil degradation** since leaves and other parts of the plants are always decomposing into the soil hence improving soil productivity (fertility).

**Providing fruits;** Afforestation helps in provide fruits which is very good for human health. Fruits and vegetables are all got from plants (food).

**Source of fuel;** forests are also the sources of fuel in homes in rural setting, forest help to provide charcoal, firewood.

**Source of timbers and poles** for building materials are got from forests in terms of poles and timbers.

**Furniture;** from forests we can get timbers for furniture like chairs, cupboard, side boards.

Most importantly, forest help to reduce the amount of toxic gas which are present in the environment due to humans.

Theodore Hozhausen (2018) said that; besides the obvious and well broadcasted value of curbing carbon emissions, the future commercial value of both afforestation and reforestation should highly be regarded from a societal, economic and genomic perspective. Until we can perhaps more naturally bioengineer homes (very futuristic still) simple wooden homes (minkas), de-urbanization, sustainable small scale commercial farming will have significant impact on future society.

In Etam Sub-County some farmers were practicing Afforestation. These farmers seem to be economically stable especially when it comes to food, security, medical care and education of the children. The researcher therefore intended to establish exactly the effects of Afforestation on the economic development of the farmers.

## **1.2. Problem Statement.**

Despite of serious deforestation taking place through the world, due to rapid population growth and some other human activities, forests need to be established because of environmental and economic factors. Most farmers in Etam Sub County have seriously started practicing Afforestation.

Some have the natural trees species while others have planted and are still planting modern tree species. The District authorities, Sub-County leadership, Operation Wealth Creation and other Community Based Organizations are supporting these farmers in managing their trees. Operation Wealth Creation gave the tree seedlings and the District leadership through the District Environmental Officer is also supporting these people. Further most farmers seem to be very much interested in afforestation; it is for these reasons that this study was conducted.

## **1.3. Purpose of the Study**

The purpose of this study was to investigate the effects of Afforestation on economic development of farmers.

## **1.4. Objectives of the Study**

The study was be guided by the following objectives;

1. To find out the types of trees farmers are planting in their fields (lands)
2. To establishing the benefits farmers are getting as results of afforestation.
3. To assess the attitudes of farmers towards afforestation.
4. To examine the challenges farmers are getting in practicing Afforestation.

### **1.5. Research Questions**

These are questions that are set, that the researcher sought to answer so as to address the research problem and objectives stated.

1. What types of trees do farmers plant in their fields?
2. what benefits do farmers get as a result of afforestation(planting trees)
3. What are the attitudes of farmers towards afforestation?
4. What challenges do farmers get in practicing afforestation?

### **1.6. Scope of the Study**

This study was carried out in Etam sub county, Amolatar District. The study examined the effects of afforestation on the economic development of the farmers in Etam Sub-county. It also assessed the contribution of forest in economic development and the challenges be faced in forestry management. The study was conducted in a period of 4 months (April to July 2019) which enabled the researcher to interact fully with the respondents in the sample, as he collected and recorded the data for presentation, interpretation and discussion.

### **1.7. Significance of the Study**

This study lead to the acquisition of new knowledge which helped in addressing the plight of farmers practicing afforestation.

It acted as a source of reference for future phenomena.

It also enabled the Sub County, the District leadership and operation wealth creation and any other organization to support farmers by bringing the required tree species and any other support to the farmers hence increasing afforestation in the sub county, District and the Country as a whole.

In addition, the study also enabled the farmers who practiced afforestation to appreciate the fact that they are practicing afforestation and improved on their economic status hence economic development.

### **1.8. Limitation of the Study**

Some of the limitations of this study included:-

Some respondents demanded for money in order for them to participate in the study.

Other respondents hesitated to participate with the reason best known to them.

### **1.9. Delimitations**

The following strategies were employed to cover the limitations foreseen in 1.8 above

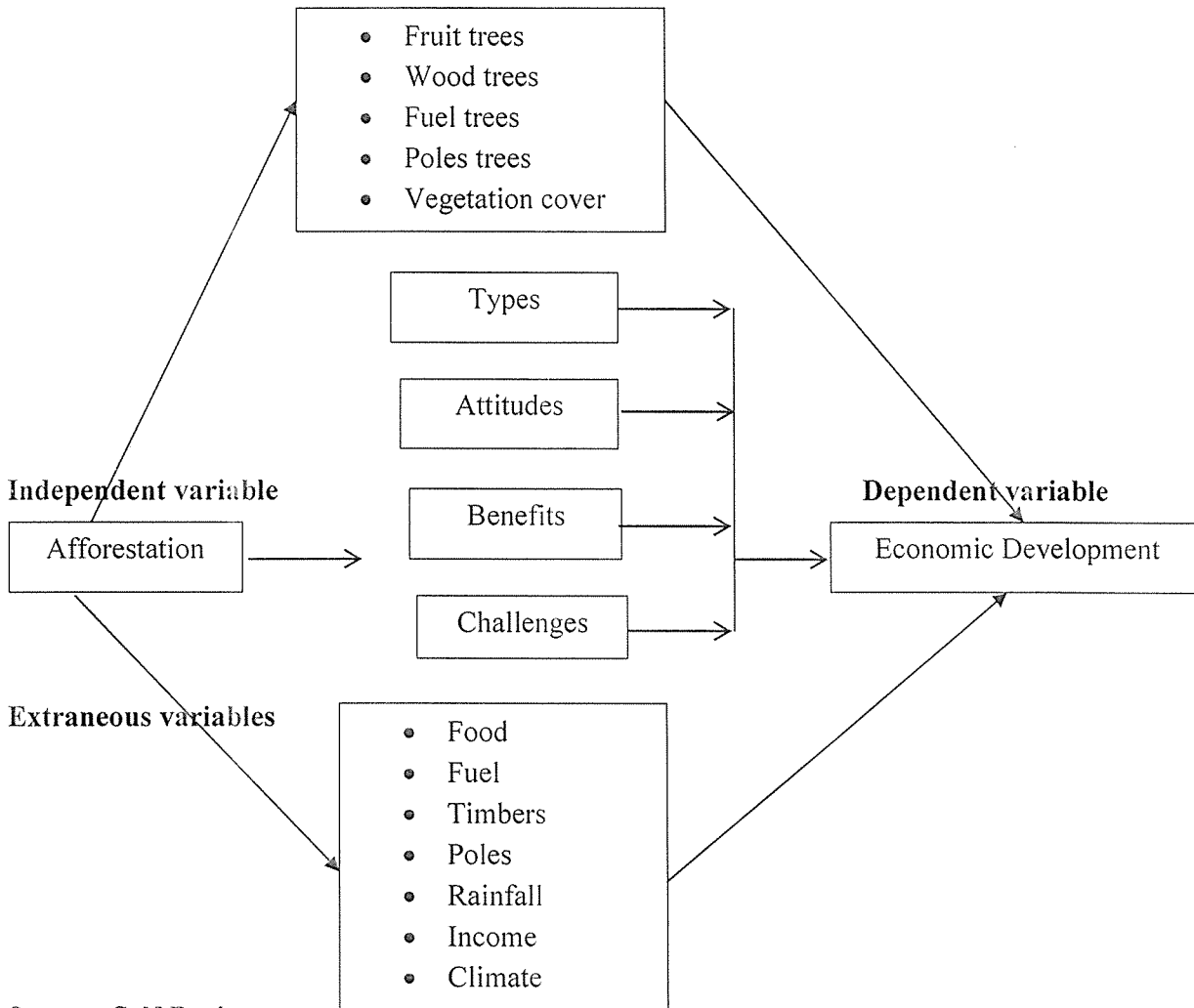
The researcher had to make the respondents understand that is not for money making but was meant to find out effects of afforestation in economic development of farmers and to find ways of overcoming the challenges faced in practicing afforestation.

The researcher simplified himself to the level of the respondents and put on their shoes such that they would not hide or hesitate giving any necessary information.

### 1.10. Conceptual Frameworks.

Figure1. Conceptual framework

Extraneous variables



Source: Self-Design

### 1.11. Definition of Terms

Some of the key words defined among others were:-

**Afforestation:** is the process of planting trees or sowing seeds in a battle land devoid of any tree to create forest.

**Economic:** it is connected with trade, industry and development of wealth of a country, an area or a society.

**Development:** it is the gradual growth of something so that it becomes more advanced, stronger, stable, better.

**Economic development:** is the growth or increase in the status of well-being of a person, family, Community, District, country and the world over.

## CHAPTER TWO

### REVIEW OF RELATE LITERATURE.

#### 2.0. Introduction

In this chapter, the researcher reviewed what authors have written in relation to the under study.

The review was carried out basing on the study objectives formed in Charter One. These are;

Find out the types of trees farmers were planting in their fields (lands)

Assess the benefits farmers were getting as results of afforestation.

Examine the attitudes of farmers towards afforestation.

Find out the challenges farmers were getting in practicing Afforestation.

#### 2.1. Types of Trees /Forest that are grown:

Ni Dhubhain and Gardiner (1994), said that there are different types of trees which include; mango trees. This trees grow in tropical climate, Jackfruits is also a very popular food in most parts of the world. In Uganda it grows so well in Mukono and Busoga areas; pawpaws which is grown and eaten by many people throughout the world, oranges are also grown and eaten by many people throughout the world. All these are fruit trees.

Co Offaly (1998), said palm trees are grown in Ssesse Island, Kalangala, Entebbe, Jinja, West Nile, Eucalyptus trees are also grown because of its economic importance.

Co Mayo (1995) pointed out that trees are grouped in Musisi trees, compound trees, natural trees, local trees, Agro forestry trees, shade trees, trees for the future and Oak trees.

Co Mayo (1995), many indigenous species are also very difficult to grow in a plantation Mvule and *Prunus africanum*. The expectation of this is Musisi *Imaesopsis Eminii*, which s a fast growing indigenous trees with considerable promise for timber plantation on suitable sites in Uganda.

Umbrella tree, Misisis in Uganda in addition to naturally growing trees in the forests and woodland. M. Emilli, Ndunga (Zaire), N'Kanguille (Gabon), N' Kanguelle (Cameroon),

Musisi (Uganda), Musisi (Kenya), Onwa Omuside. Many tree farmers are planting pine for timbers. The tree main pine sub-species are pine Caribbean, Orcapa and Patula. Other timber species include; Aravcaria, Terminalla, Cypress, Teak, Musisi and Mvule.

Word problems and development, advanced level Geography by Henrie M. Kichodo pointed out the following types of trees in Uganda;

Musisi trees in Uganda

Compound trees in Uganda

Natural tree species in Uganda

Local tree species in Uganda

Agro forestry tree species in Uganda

Shade trees in Uganda

Trees for the future Uganda

Oak trees in Uganda

Henrie M. Kichodo (2008), mango trees grow well in tropical climate, jackfruits are very popular foods in Uganda and grow so well in Mukono and Busoga areas, pawpaws and orange trees.

Henrie M. Kichodo (2008), mango trees was planted since they grow well in tropical climates. Jackfruit is a very popular food in Uganda and grows extremely well in Mukono area, Moringa Oleifera, pawpaw, orange trees.

In Uganda suitable areas for growing palm trees are; Ssese Island, Kalangala, Entebbe, Jinja, West Nile. Africa including Uganda grows Eucalyptus trees because of its economic importance

Many indigenous species are also very difficult to grow in a plantation (e.g. Mvule and prunus africanum. The expectation of this is Musisi Imaesopsis eminii) which is a fast growing indigenous tree with considerable promise for timber plantation on suitable sites in Uganda.

## **2.2. Attitudes of Farmers towards Afforestation**

According to Ni Dhubhain and Gardiner (1994), a survey of farmers, concentrated in the ideas of Ireland was carried out in 1992 and set out to establish the factors that influence farmers' decisions to plant trees.

It also determined farmers' attitudes to forestry in general. The impact of the conversion of agricultural land to forestry on agricultural output and workload on the farm was also established.

Only 12% had then planted trees on their land, most of the farmers who had planted had done so on bog land or on land that previously had been used for rough grazing. The respondents were asked their main reason for planting trees.

The majority stated that they had planted in order to provide shelter. A further 23% gave financial reasons.

The 82% of respondents who had not planted trees were asked to give their reasons for not planting. Lack of suitable land and a limited resource were the two most popular reasons given (35% and 15% of the respondents respectively). (Ni Dhubhain and Gardiner 1994).

Only 10% stated that they would plant in the future. A further 31% said that they were unsure about planting while the remaining 59% would not plant trees. The most popular reason given for future planting was to use up poor ground which was good for nothing else.

Ni Dhubhain and Gardiner (1994), a series of statements of frequently expressed attitudes to various forms of forestry development were presented to the respondents who were asked to indicate whether they agree or disagree with the statements. Analysis of the responses showed that the number of respondents who felt that State forestry generated employment was significantly greater than those who felt that commercial private forestry (CPF) generated employment in addition, more respondents considered that CPF caused population decline.

60% of the respondents agreed that forestry on farms generated additional income for farmers but only 36% agreed that it kept people on the land.

Faraway and Leavy (2001), pointed out the following attitude of the farmers.

The factors which influence land availability of forestry.

The factors influencing individual land owners to plant trees.

The relative economic returns to landholders from forestry.

Co mayo (1995), an examination was undertaken of farmers' attitudes towards afforestation as well as the reason proffered for negative options more than half of farmers indicated a favorable attitudes towards forestry in general, while another 20% had no view either way conversely almost 25% would not welcome forestry development in their area. Only 3% had some forest planted. However, the vast majority of farmers in the country were not considering afforestation on their own farm despite the incentives available. The main difficulty with the idea of farm forestry was that farm were seen as too small to allocate some land for forestry because existing enterprises would have to be scaled back.

Co Offaly (1998), 370 farmers indicated broadly similar views county estimates show that 6% of farms had forest enterprise with another 4% considering afforestation. Farmers' ratings of forestry as a farm enterprise on their own farm were mixed, with 38% (of those who had not planted nor intended to plant) not in favour and another 22% neutral or indifferent. Favorable attitude was indicated by 30%.

wall (1997), in the context of the strategic plan for the development of the forestry sector in Ireland published in 1996, a survey of private forest owners in the forest service's records of great recipients was carried out during 1995-1996. Wall investigated private forest owners' objectives for their woods and sought to determine their level of participation in forest management activities, including extension activities such as courses and field days.

Frawley (1998), more than 90% of those who had planted trees were satisfied with forestry and this view held in both regions. Financial gain and a good investment were most often mentioned by more than one in five. When taken together those responses indicated that two third of those who planted regarded the economic aspect as the main justification.

Wall (1997), most forest owners have no tradition experience or knowledge of woodland management, as private forestry in Ireland is a recent not taking advantage of the avoidable extension services. Their poor tendency at course may be due to lack of time or inconvenience of the course but perhaps course and demonstrations are not the preferred means of information transfer. Most private forest owners indicated that they would prefer a visit from the Forest Service Inspector.

Kearney and O'Connor, (1993), a sample of 570 names were drawn from the Register of Electors to identify households and their characteristics.

All persons in the sample household were asked their opinions on development in their area. There were large differences in attitudes detected between forested and relatively un-forested areas. In Wick low 53% of respondents expressed themselves as strongly in favour of forestry development compared with less than 6% in Mayo were in favour.

The perception of forestry is strongly correlated with its stage of development and with the rate of afforestation. Thus mature forests areas offer an opportunity of observing the significance of forestry in rural development which an incipient forestry programme cannot.

A negative attitude to forestry was expressed by 5.7% of respondents in Wick low but this response rate increased to almost 31% in Mayo with about one quarter in this category expressing a strong opposition to forestry development. The difference in attitude are matter of concern and interest.

The overwhelming reason given in Wick low by those in favour of forestry was that it gave employment (C.75%) followed by its positive contribution to the environment (10%). By contrast the dominant reason (70%) given by this category of respondents in was that forestry provided a good way of using marginal land with a significant proportion (13%) stating that forestry development give employment in the area.

The dominant reason given by those opposed to forestry in Mayo was that it was inimical to agriculture (C.60%), while other reasons most frequently mentioned were that it caused depopulation and isolation or gave little employment.

Clinch (1999); carried out the first nationwide survey of the Irish public's attitudes to increase in the afforestation was assessed by surveying a representative sample of households in Ireland. Due to a restriction as space, it was possible to ask respondents only a few questions on their attitudes towards afforestation. It was therefore decided to ask them about their impressions regarding the impact of the present afforestation program upon the environment.

O Leary Et Al (2000), the survey was carried out on the perceptions and attitudes of two case study population.

One of which was positively disposed towards forestry and other highly critical. The core objective of the paper reporting the results was to reduce a social distention to landscape planning and design combining the results of the four investigations concerning historical relevance, degree of involvement, artistic association and recreational involvement, it would appear that the wick low respondents have a closer cultural relationship with forests and forestry than those interviewed in Lei trim.

### **2.3. Benefits got from Afforestation**

According to Henrie M. Kichodo (2008) in his book problem and Development; Advanced level Geography, he pointed the importance of forests as being;

#### **Building materials;**

Tropical rainforests contain hard woods, which are durable and therefore used in the building and construction industry. In many parts of tropical Africa, Poles are used to make the mud, walls are built, and Timber is also used in roofing.

#### **Source of raw materials for industries;**

Forests are a source of raw timber used in the making of furniture. Apart from this, there are also many useful materials from the forests used in the industries. In Liberia, palm kernels from which oil for soaps are products.

A large ply wood factory and a cellulose factory based on forest resources are found at Port Gentil in Garbon. In Ghana, the Obeche wood is widely used in the boats making industry.

Gutta-percha and balata are saps obtained from Malay Archipelago forests used in the making of machine belting electrical installation and casing of golf balls. Chicle which is used in the manufacture of chewing gum is obtained from the Central American forests.

#### **Fuel;**

In the tropics, vast quantities of wood are cut annually for fuel. In many developing countries wood is still the main source of fuel consumed either directly in form of firewood or indirectly in the form of charcoal.

The bulk of Nigeria's forest production is wood fuel, consumed either as wood or charcoal.

In 2001, the country fuel wood production was 60 million cubic meters, harvested mostly near dense urban areas. By contrast, annual lumber production, mostly hard woods such as mahogany, Iroko and Obeche averaged 2 million cubic meters almost all from the tropical forest zone. In Ghana, Nigeria, Liberia and other West African countries, wood is an important fuel for fish smoking while in Zimbabwe wood is used in the firing of tobacco curing kilns.

### **Source of food;**

Many fruits and nuts in many parts of tropical world are still gathered from the tropical rainforests.

Rainforests also offer bounty of foods.

Food that we use today which originated in rainforest include coffee, cocoa, many fruits and nuts, spices, rice, mushrooms and yams.

In Brazil, various nuts are gathered from the Amazon forests and exported to Europe and North America where they are eaten as whole nuts or used in confectionary.

**Clinch, J.P (1999)**, Rain forests also play a critical role in global climate regulation by absorbing carbon dioxide, a gas believed to partially responsible for global warming. Plants naturally absorb carbon dioxide and give off oxygen gas in the process of photosynthesis; there is general agreement among the scientific community that by absorbing some of the gas, rainforests play a vital role in lessening its impacts.

In many climates, rainfall evaporation is carried away to fall as rain in distant places, but in rain forests nearly 50 percent of the precipitation comes from local evaporation.

The warm humid air surrounding a rain forest forms a micro. Much of the rain that falls on rainforests is intercepted by the trees in the canopy.

**Mc Carthy S (2001)**, tropical rainforests provide the most effective anti-erosion control than any other type of vegetation. The tree canopies reduce the force of the falling rain drops before they reach the ground. The litter of the decaying on the floor of the forest act as a sponge, absorbing the large part of the water falling on it and releasing it slowly and harmlessly to the underlying soil. The tree roots help to bind the soil particles together it is

therefore of great importance that forests cover should be maintained on steep watershed areas especially in regions where the rainfall is heavy and torrential in nature.

**Walls (1997) said that,** drugs that originated in the forest range from early forms of the birth control pill, first manufactured from wild yams growing in Central America, to highly specialized medicines derived from the Madagascar rosy periwinkle used to treat a rare form of leukemia. The drugs already in the use represent just a fraction of the potential medicines the rainforests may hold of the thousands of plants identified as carrying potential anti-cancer compound, more than half are native to rainforests. Thechchona tree which goes in the Amazon, Columbia and Bolivia tropical rainforests is of importance for its bark, which is the natural source of the drug quinine used in the treatment of malaria.

**Walls and A. Ni Dhubhain (1998),** forests are habitats of wildlife such as bird, various animals and plants. These wildlife resources attract tourists thus earning the respective country's valuable foreign exchange. Among the various animals found in Berin's forests are elephants, buffalo, antelope, panthers, monkeys, crocodiles and wild ducks. In addition, Rainforests are also home to a number of exotic animals, such as parrots and monkeys which bring high prices when captured and sold as pets.

**Ni Dhubhain A and J.J Gardiner (1994),** timber from the forests is exported and earns foreign exchange to the respective countries. The timber is exported in form of logs, sawn timber and veneers. Major exporting countries include Gabon, Democratic Republic of Congo, Ghana, Cameroon and the Central African Republic. Gabon is the world's largest producer of Okoume, softwood that is used to make plywood. In 2001 the timber cut in Gabon was 3.1 million cubic meters (110 million cubic feet) and most of it was exported. In Cote D'Ivoire, timber is one of the country's major export and logs are often seen floating near the port of Abidjan for export. The most important export timbers are mahogany Iroko, Sipo, Obeche and Makore. Timber is also an important export item in the countries of Burma, Philippines, Indonesia and Malaysia.

**Walls (1997) said that,** the exploitation of tropical rainforest has attracted foreign investors who bring in not only capital but also technical skills. Exploitation and processing of timber in countries such as European firms.

Kearney B and R. O Connor (1993), the exploitation of tropical rainforests has led to the generation of revenue to the respective countries through taxes imposed on lumbering, companies, workers incomes and other related activities.

Kearney B and R. O Connor (1993), the many countries in the tropics depend on the agricultural sector. The presence of tropical rainforests has helped in the diversification of their economic and to reduce over-reliance on the agricultural sector.

HMK (2008), the presence of tropical rainforests has generated employment opportunities to many people in the field of lumbering, timber related industries, forest officers and such.

HMK (2008), forests are used for research purposes, indigenous tribes often possess a great wealth of knowledge about the rainforests including the medical uses of different plant species, the habits of breeding birds and the rainfall pattern. This knowledge has been passed down verbally from generation to generation. This knowledge is in the process of being lost, as the older generation is phased out. However, today many researchers are gathering this information and documenting. This includes lecturers and students of higher institutions of learning such as universities and forest colleges.

HMK (2008), some indigenous people live deep within the rainforests in areas that to this day, are accessible only by river.

Anthropologists believe that as many as 1,000 different cultures of indigenous people may be living in rainforests worldwide. Among the many small groups are the Yanomomo, the Ashaninka and the Kayapo of South America; the Baka Pygmies of Cameroon, and the Penan and Bentian Dayak of Borneo. Although each indigenous group has a different culture and customs, they all share a dependence on the rainforest habitat in which they live. Many indigenous people collect fruits, nuts, firewood, construction materials and game meat from the rainforests. Most also depend on small-scale agriculture for food and medicinal plants.

#### **2.4. Challenges Facing Afforestation**

Ni Dhubhain and Gardline (1994), said that the challenges facing Afforestation are: Lack of suitable land and limited land resource were the two most popular reasons given (35% and 15% of the respondents respectively)

HenrieM.Kichodo (HMK 2008), pointed out the following challenges facing afforestation:

**Weather;**

Sometimes young trees (seedlings) are faced by prolonged sunshine and this is worst in desert areas and semi-arid areas.

**Markets;**

Limited market for some species of trees because of their relatively low value especially to markets in Europe and U.S.A.

**Population increase;**

increase in the number of people in an area is also affecting afforestation since this people need land for settlement and crop production and this is why natural tree species have disappeared so much people cut them down create space for human settlement, crop production and animal production. This is therefore affecting afforestation.

**Land tenure;**

Afforestation need some good piece of land where the land is fragmented, it becomes a challenge in afforestation.

Clinch, J. P (1999), said that afforestation needs skill full people most especially when dealing with modern tree species. Most of the people who practice afforestation in small scale are not skillful enough to manage modern tree species

Frowely (1998), said that some tree species take long to mature this is also challenge to farmers sometimes since they need immediate return (Output) and that is why many farmers prefer annual crop production to tree planting (afforestation).

**Hannan**, D.E and P. Commins (1993), said that most farmers have got negative attitudes towards planting trees (afforestation) in many parts of the world that is why desertification is increasing daily worldwide.

IFIC (1997), also said that most farmers have got poor attitudes towards afforestation.

Kearney B. and R.O Connor (1993), said that afforestation can only be practiced better by farmers who have some better financial position who can raise the seedling or buy and manage the plants properly. A peasant farmer who do not have enough land and lacks capital cannot manage afforestation.

### **Solutions to the challenges in afforestation.**

Ni Dhubhain and Gardiner (1994), said that the challenge of lack of suitable land and limited land resource would be solved when the government gazettes/creates land for afforestation and the farmers are allowed to plant trees in those government land the later the products would be sold to the government at a fair price.

Henrie M. Kichodo (HMK 2008), suggested that irrigation should be done in places with no or little rainfall to support young plants and seedlings.

(HMK 2008), suggested that the government should provide market, transport means and technical support including financial support inform of loans in order to motivate farmers such that they may practice afforestation effectively.

Clinch J.P (1999), said that farmers need to be trained and extension services on afforestation should always be available to assist farmers with necessary skills needed in afforestation.

Hannan D.E and P. Commins (1993), farmers have to be educated since most of them have poor attitudes towards afforestation. This will encourage them to plant more trees.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.0. Introduction**

In this chapter, the researcher discussed the research design, research area, study population, sample size and selection techniques, data collection instrument, validity and reliability, data collection procedure, data analysis procedure and ethical issues.

#### **3.1. Research Design**

Robson (1993) defined research design as all the styles of a researcher's own preference of ideas on certain topics. Creswell (2012) further clarifies that the major approaches used are; qualitative, quantitative and mixed. For this study therefore, the researcher used the case study research design because it was flexible and less rigid to definable variables. Patton (1982:22) and Koul (1998) emphasizes that qualitative data provides depth and details which emerge through direct quotation and careful description.

#### **3.2. Research Area**

The study was conducted in Amolatar district, Kioga County, Etam Town Council in the parishes of Arwot, Chakwara, Etam, Arwotcek, Anamido and Abwockwar.

#### **3.3. Research Method**

Berg and Howard (2011) define research methods as the particular strategies researchers use to collect the evidence necessary for building and testing theories. Howell (2013) also defined research methods as the general research strategies that outline the way in which the research is to be undertaken. For this case, study was used. A Koul (1998) point out that case study is a method of collecting or gathering data through questionnaire, observation and interviews.

#### **3.4. Population of the study**

Mclead (2014) defined target population as a total group of individuals from which a sample is drawn. Koul (1998), target population refers to any collection of special group of human beings or of non-human entities such as objects, educational institutions, time units and geographical areas.

For this study the non-human resources are six (6) parishes in Etam Town Council. In addition, the human resources include;

Ten farmers from each parish (6)

Town agents or these parishes (6)

Community development officer (CDO) (1)

Senior Assistant Secretary (1)

L.C.III Chairperson (1)

### 3.5. Sampling Procedure and Selection Techniques

Patton (2002) defined it as a process of selecting units from the population so that by studying that sample, we are able to generalize our findings of results. The researcher used purposive sampling of results. The researcher used purposive sampling technique to obtain the relevant respondents which included; farmers, Town Agents, CDO, Senior Assistant Secretary and Chairperson L.C.III.

### 3.6. Sample

Dessel (2003), pointed out that using correct sample size from the target population is crucial for one's research because it avoids wastage of precious resources in case the sample is too big and failing to get a reliable insight incase the sample is too small. For this study therefore, the researcher selected 75% of the total number of respondents.

This is shown in the table below.

**Table 1. Selection of study sample.**

| Resources          | Category            | Population | Sample |
|--------------------|---------------------|------------|--------|
| Non-human resource | Parishes            | 6          | 4      |
| Human resources    | Farmers             | 60         | 40     |
|                    | CDO                 | 1          | 1      |
|                    | SAS                 | 1          | 1      |
|                    | L.C.III Chairperson | 1          | 1      |

*Source: self designed*

### 3.7. Research Instruments

Pierce (2009) defined a research instrument as a device used to measure variable, characteristics, or information of interest often behavioral and psychological. Cohen, Manion and Morrison (2011), identified different study instruments as follows;

For qualitative methods, they include; interviews, observation questionnaire, focus group and documentary analysis. For qualitative approach, they include; survey, questionnaire and standardized scales.

For this study, the interview guides were preferred which is face to face conversation or interaction between researcher and respondents for the purpose of getting information.

### **3.8. Interviews have the following advantages**

During interview, further explanations can be given to the researcher as well as the respondents. The researcher can ask questions to obtain enough information about the topic. During interviews, some actions by the respondents can help to add meaning on the issue being discussed.

### **3.9. Validity and Reliability**

Mouton (2001) said that the data collected and the instrument being used should give the correct information which one can rely on and when tested or examined, it should give the correct information.

Interview guide is so valid and very reliable when conducting a study.

Questionnaire or if well handled through proper guidance also gives correct information which you can believe in.

### **3.10. Data Collection Procedure**

Mouton (2001) advised that data collection is a process of collecting and measuring information on variables of interest in an established systematic fashion that enables one to answer stated research questions, tests hypothesis and evaluate them. Adams (2007) also pointed out that a researcher should allow time for questions asked by respondents or participants and that answers given should provide sufficient information without compromising the study. For this study therefore, the researcher obtained an authority letter that introduced him to the respondents and enabled him to obtain consent from them.

### **3.11. Data Analysis Procedure**

Being a qualitative research design, data was analyzed from the study in order to make sense of it and be accessible to the researcher, and people would read the research report. Large amount of textual data was generated. Data analysis consisted of examining, categorizing,

tabulating and recombining the evidence obtained from the research, all these was concerned with the organization and interpretation of information rather than numerical information.

### **3.12. Ethical Issues**

It is true that I read what others wrote and picked some information from their writings but there was no copying and pasting. This is truly my own work.

I have also been very confidential as I was carrying out this study.

## CHAPTER FOUR

### DATA PRESENTATION, ANALYSIS AND INTERPRETATION

#### 4.0 Introduction

This chapter focused on the presentation, analysis and presentation of data which were collected from a number of farmers and community leaders in Etam Town Council, Amolatar District. The chapter is divided into two parts; the first part involved presentation of the background information on the sample data and the second part was mainly for data analysis and interpretation based on research objectives. The objectives included type of trees planted, benefits got from planting trees, attitudes of farmers and challenges farmers are facing in afforestation.

#### 4.1 Background Information

As illustrated in Table 2, a detailed biographical data is provided including the nature of the data collected on the basic background information. These are made up of Parishes covered, a number of general farmers, Community Development Officers (CDO), Senior Assistant Secretary (SAS) and the L.C.III Chairperson. The details are as indicated on Table 2.

**Table 2. Data on Biographical Background.**

| Parishes covered                   | Parish 1  | Parish 2  | Parish 3  | Parish 4  | Total     |
|------------------------------------|-----------|-----------|-----------|-----------|-----------|
| Number of general farmers          | 3         | 4         | 3         | 2         | 12        |
| Number of parish leaders           | 2         | 2         | 2         | 2         | 08        |
| CDO                                | -         | -         | -         | -         | 01        |
| SAS                                |           |           |           |           | 01        |
| Chairperson L.C.III                |           |           |           |           | 01        |
| <b>Total number of respondents</b> | <b>05</b> | <b>06</b> | <b>05</b> | <b>04</b> | <b>23</b> |

*Source: Self designed*

The comprehensive sample in Table 2 is to assist in the interpretation of the cardinal data based on objectives.

As illustrated, parishes included are 4 (four) in number. The main purpose of having these different parishes was to ascertain how each parish practiced afforestation.

Within the parishes as illustrated in Table 2, there are categories of farmers, those who practiced afforestation and those who are not practicing afforestation.

The data also includes the Community Development Officer (CDO), the Senior Assistant Secretary (SAS) or the Sub-County Chief and the Chairperson L.C.III.

Having seen the background information, in the next section analysis of data is focused on research objectives.

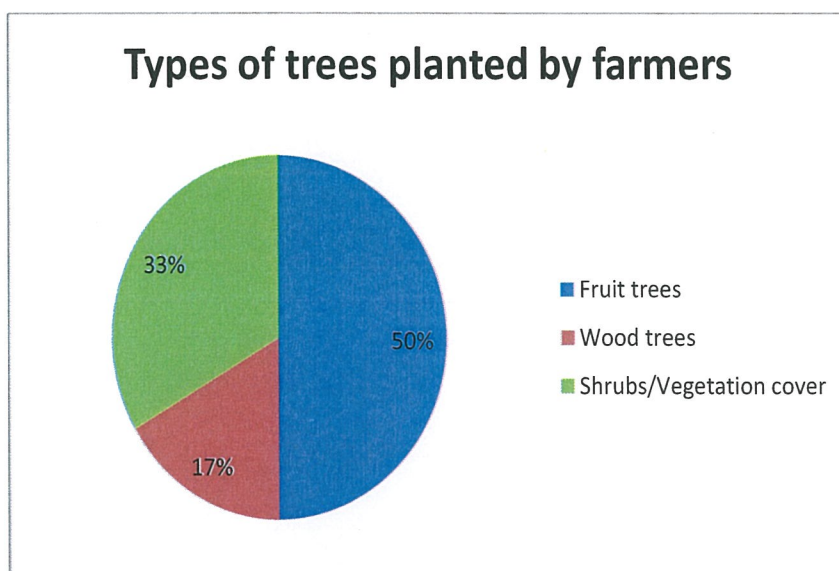
The presentation and interpretation of the analyzed data have been provided with the help of pie-charts and graphs which show the identified themes and sub-themes, responses and respective scores in terms of percentages. The presentations are divided into two categories; one is for information provided by farmers and the other by the community leaders.

#### **4.2 A. Data analysis, presentation and interpretation based on information provided by farmers on objective one.**

Data analysis presentation and interpretation on objective one sought to find out the types of trees farmers are planting in the fields (land).

**Table 3. Types of trees farmers are planting in their fields.**

| Response    | Frequency | Percentages (%) |
|-------------|-----------|-----------------|
| Fruit trees | 6         | 50              |
| Wood trees  | 2         | 17              |
| Shrubs      | 4         | 33              |
| Total       | 12        | 100.0           |



**Fig.2. Types of trees planted by farmers**

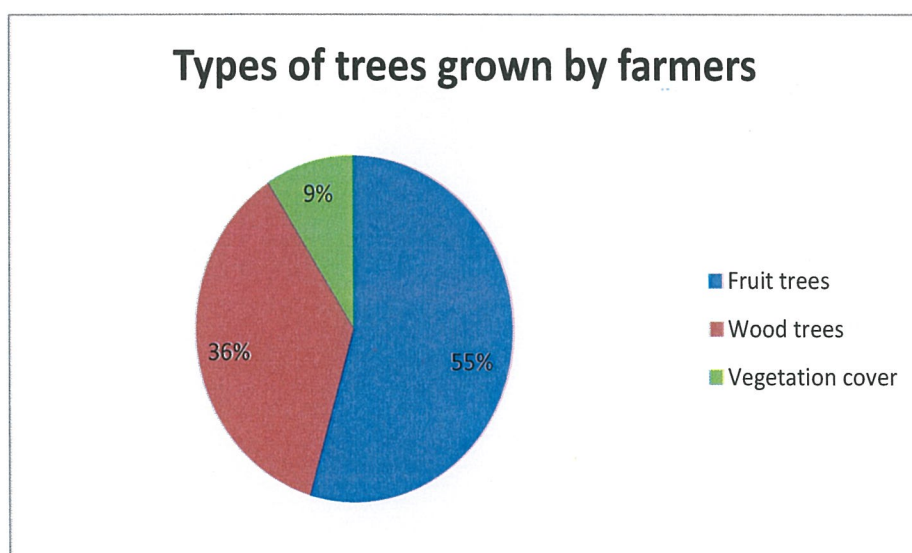
*Source: Self designed*

From Table 3 and figure 2 above, it was found out that majority of the farmers/respondents (50%) said that fruit trees are very essential in the lives of farmers. Other respondents (33%) said that vegetation cover should be planted by farmers and only 17% of the respondents said that wood trees were types of trees being planted/grown.

**B. Data analysis, presentation and interpretation based on information provided by community leaders** that is to say; parish leaders, Community Development Officers (CDO), Senior Assistant Secretary (SAS) and the L.C.III Chairperson.

**Table 4. Types of trees farmers are planting in their fields.**

| Response     | Frequency | Percentages (%) |
|--------------|-----------|-----------------|
| Fruit trees  | 6         | 55              |
| Wood trees   | 4         | 36              |
| Shrubs       | 1         | 9               |
| <b>Total</b> | <b>11</b> | <b>100.0</b>    |



**Fig.3. Types of trees grown by farmers**

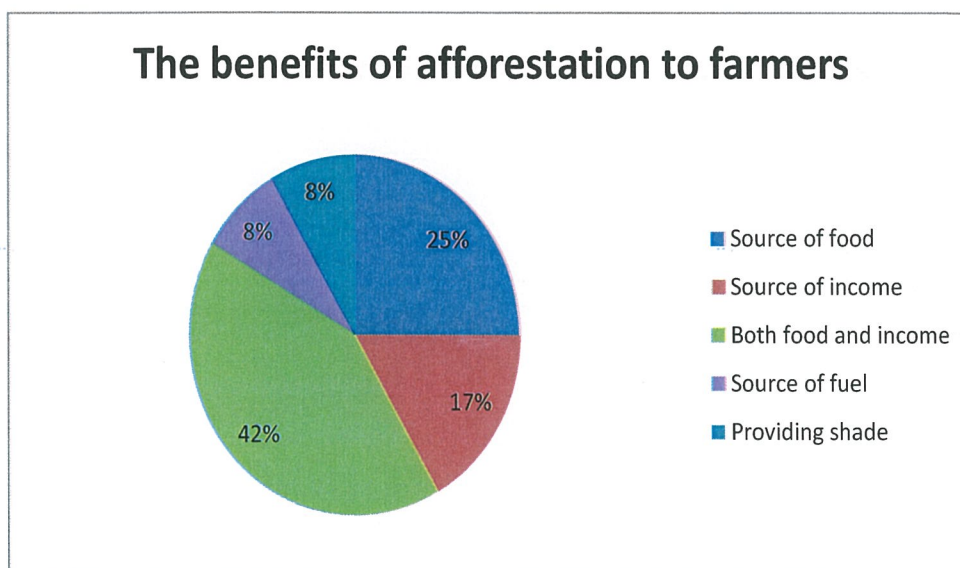
*Source: Self designed*

From Table 4 and figure 3 above, the researcher found out that fruit trees with 55% was the most common type of trees grown by farmers, followed by wood trees with 36% and lastly shrubs/vegetation cover with 9% was being planted or grown by the least number of farmers.

### 4.3 Benefits got from Afforestation

**Table 5: Data analysis, presentation and interpretation based on information given by farmers.**

| Responses            | Frequency | Percentages (%) |
|----------------------|-----------|-----------------|
| Source of food       | 3         | 25              |
| Source of income     | 2         | 17              |
| Both food and income | 5         | 42              |
| Source of fuel       | 1         | 8               |
| Providing shade      | 1         | 8               |
| <b>Total</b>         | <b>12</b> | <b>100.0</b>    |



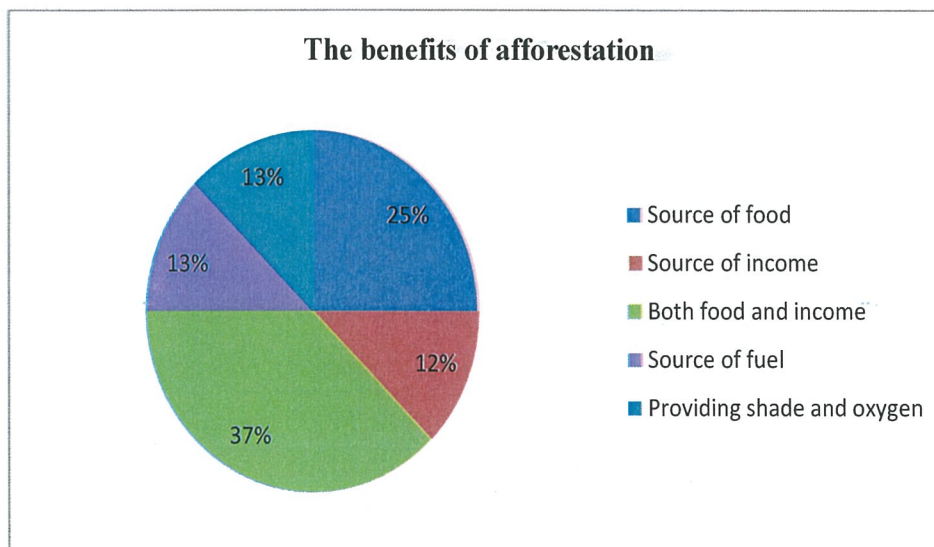
**Fig.4. The benefits of afforestation.**

*Source: Self designed*

From Table 5 and Figure 4 above, the researcher found out that both source of fuel and income (42%) was the most outstanding benefit farmers are getting from afforestation. This was followed by source of food (25%), source of income (17%) while source of fuel and shade were said to be the least benefits farmers are getting from afforestation.

**Table 6: Data analysis, presentation and interpretation based on information given by Parish leaders.**

| Responses            | Frequency | Percentages (%) |
|----------------------|-----------|-----------------|
| Source of food       | 2         | 25              |
| Source of income     | 1         | 12              |
| Both food and income | 3         | 37              |
| Source of fuel       | 1         | 13              |
| Providing shade      | 1         | 13              |
| <b>Total</b>         | <b>8</b>  | <b>100.0</b>    |



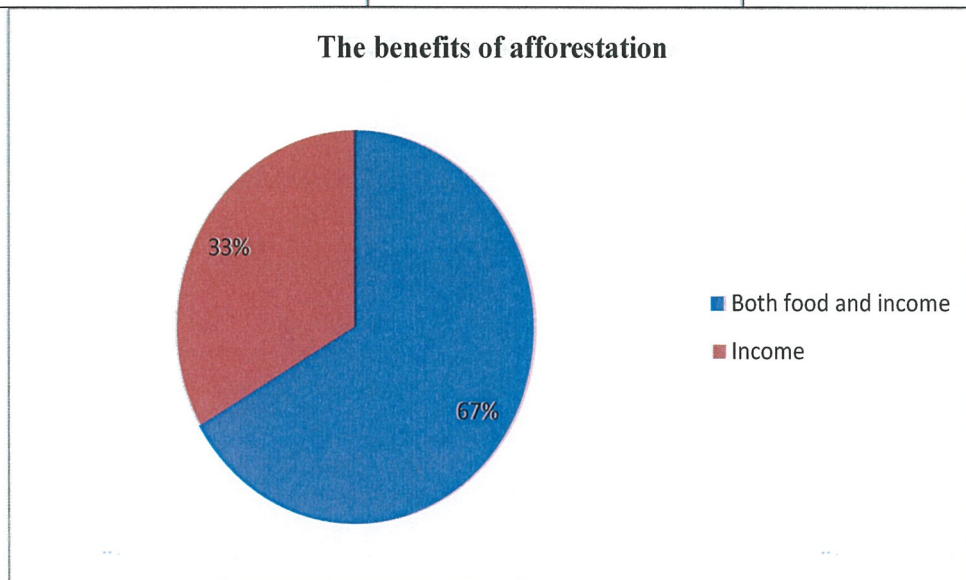
**Fig.5. The benefits of afforestation. The common benefits of education to farmers**

**Source: Self designed**

From Table 6 and Figure 5 above, the researcher found out that the most outstanding benefit of afforestation was both food and income (37%), followed by source of food (25%) source of fuel and shade and provision of oxygen represented by 13% each while source of income, was seen as the least importance of afforestation by 12 %.

**Table 7: Data analysis, presentation and interpretation based on the responses given by the Sub-County leaders.**

| Reponses             | Frequency | Percentage (%) |
|----------------------|-----------|----------------|
| Both food and income | 2         | 67             |
| Income               | 1         | 33             |
| <b>Total</b>         | <b>3</b>  | <b>100.0</b>   |



**Fig.6. The benefits of afforestation. The most important benefits.**

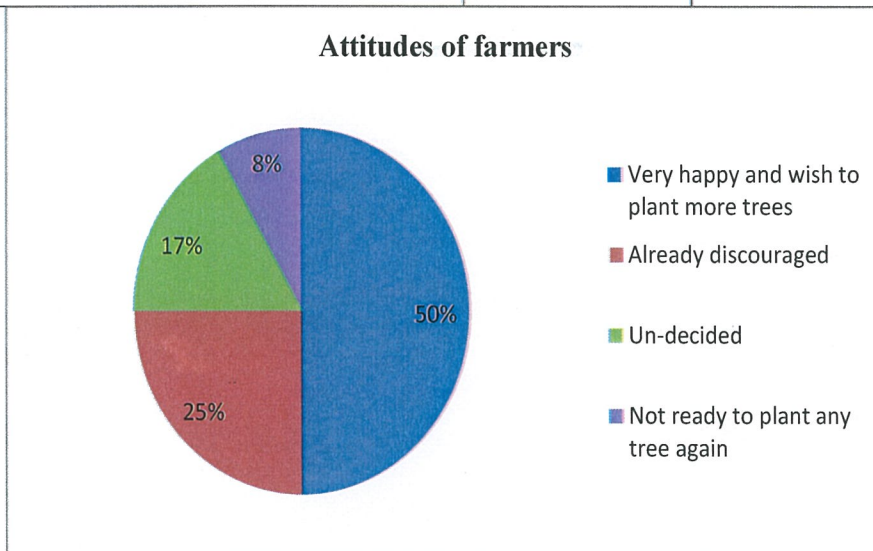
*Source: Self designed*

From table 7 and figure 6 above, the researcher found out that both food and income was the most common benefit of afforestation represented by 67% and source of income the lowest by 33%.

#### 4.5 Attitudes of Farmers towards Afforestation

**Table 8: Data presentation, analysis and interpretation based on the responses of the farmers.**

| Responses                               | Frequency | Percentage (%) |
|-----------------------------------------|-----------|----------------|
| Very happy and wish to plant more trees | 6         | 50             |
| Already discouraged                     | 3         | 25             |
| Un-decided                              | 2         | 17             |
| Not ready to plant any tree again       | 1         | 8              |
| <b>Total</b>                            | <b>12</b> | <b>100.0</b>   |



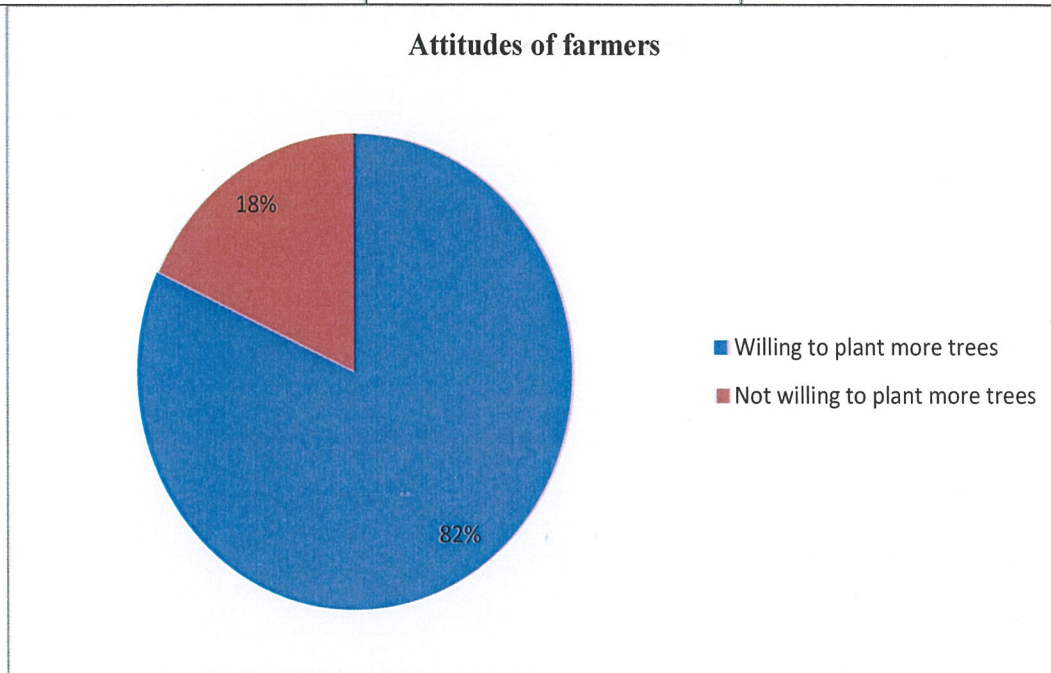
**Fig.7. The attitudes of farmers in Afforestation.**

*Source: Self designed*

From table 8 and figure 7 above, it was found out that 50% of the farmers were very happy with what they were getting from their trees and they were so much willing to plant more trees while 25% of the farmers were already discouraged with the challenges being faced like pests and diseases, lack of land and unreliable rainfall, 17% were not decided whether to plant or not and then 8% were not willing at all to plant any tree again.

**STable 9: Data analysis, presentation and interpretation based on the responses of the parish and Sub-county leaders.**

| Responses                       | Frequency | Percentages (%) |
|---------------------------------|-----------|-----------------|
| Willing to plant more trees     | 9         | 82              |
| Not willing to plant more trees | 2         | 18              |
| <b>Total</b>                    | <b>11</b> | <b>100.0</b>    |



**Figure 8: Attitudes towards afforestation**

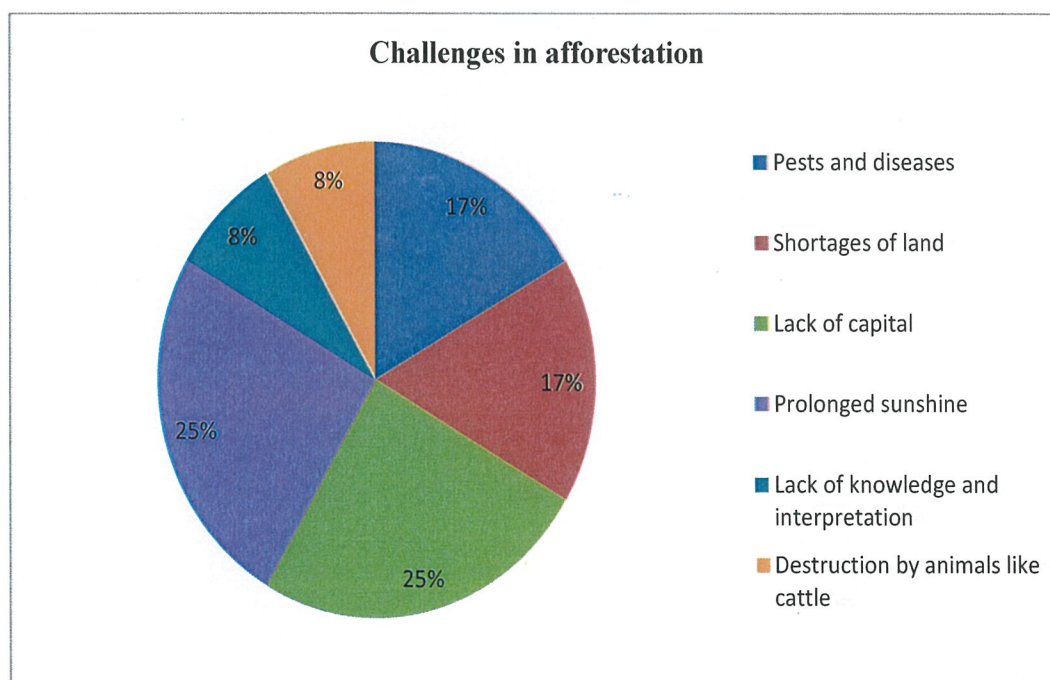
*Source: Self designed*

From table 9 and figure 7, the researcher found out that 82% were already discouraged and were not willing to plant any tree in their fields.

#### 4.6 Challenges being faced in Afforestation

**Table 10: Data analysis, presentation and interpretation based on the responses of farmers on challenges in afforestation.**

| Responses                            | Frequency | Percentages (%) |
|--------------------------------------|-----------|-----------------|
| Pests and diseases                   | 2         | 17              |
| Shortages of land                    | 2         | 17              |
| Lack of capital                      | 3         | 25              |
| Prolonged sunshine                   | 3         | 25              |
| Lack of knowledge and interpretation | 1         | 8               |
| Destruction by animals like cattle   | 1         | 8               |
| <b>Total</b>                         | <b>12</b> | <b>100.0</b>    |



**Figure 9: Challenges in afforestation**

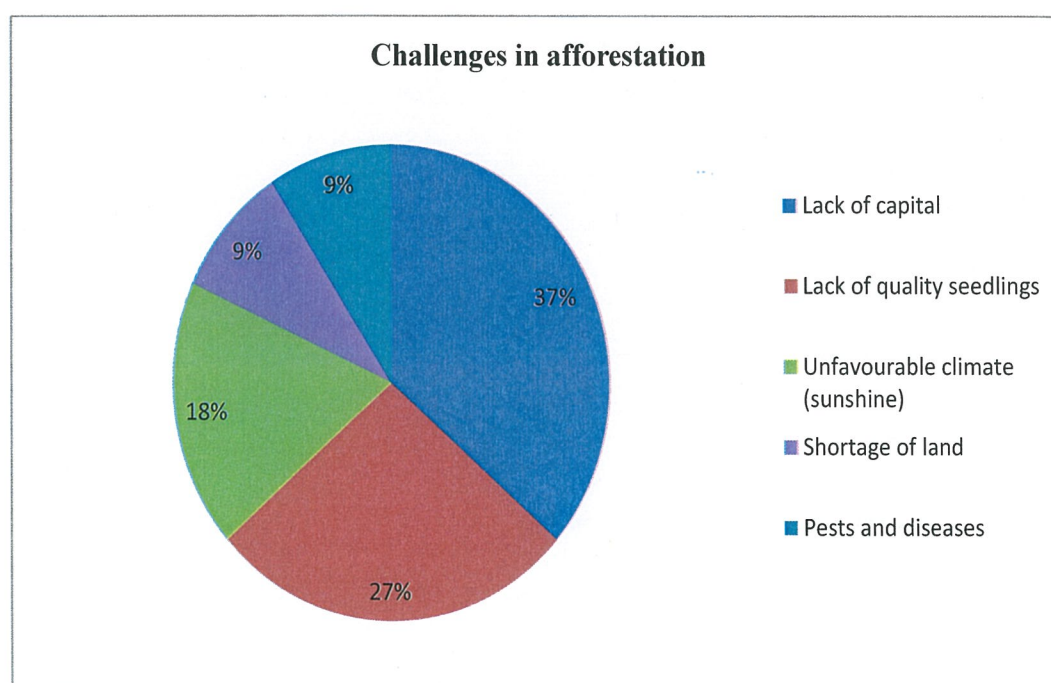
*Source: Self designed*

From table 10 and figure 8, the researcher found out that lack of capital and prolonged sunshine each represented by 25% were the most common challenges facing afforestation in Amolatar, while pests and diseases and shortage of land each represented by 17% were also seen as the challenges facing afforestation. Lack of knowledge/ignorance or interests and

destruction by wild animals each represented by 8.% were found to be the least challenges faced in afforestation.

**Table 11: Data analysis, presentation and interpretation based on the responses of the parish and Sub-county leaders on challenges in afforestation.**

| Responses                       | Frequency | Percentages (%) |
|---------------------------------|-----------|-----------------|
| Lack of capital                 | 4         | 37              |
| Lack of quality seedlings       | 3         | 27              |
| Unfavourable climate (sunshine) | 2         | 18              |
| Shortage of land                | 1         | 9               |
| Pests and diseases              | 1         | 9               |
| <b>Total</b>                    | <b>11</b> | <b>100.0</b>    |



**Figure 10: Challenges in afforestation**

*Source: Self designed*

From table 11 and figure 9, the researcher basing on the responses by the parish and the Sub-County leaders, found out that the most outstanding challenge in afforestation was lack of capital represented by 37%, followed by lack of quality seedlings represented by 27%,

unfavourable climate (sunshine) represented by 18%, shortage of land and pests and diseases seen as being the least challenges in afforestation each represented by 9%.

## **CHAPTER FIVE**

### **DISCUSSIONS, CONCLUSIONS, RECOMMENDATIONS AND SUGGESTIONS**

#### **5.0. Introduction**

In this final chapter of the study, focus was put on discussions, conclusions, recommendations and suggestions. All these are based on objectives.

#### **5.1. Discussions**

##### **Discussions of the findings on objective one.**

Objective one was meant to find out the types of trees farmers were planting in their fields. The major finding on this objective was that fruit trees were the most common types of trees planted by most farmers (50%). This finding was in line with that of Ni Dhubhain and Gardiner (1994), who said that trees like mango trees, jack fruit trees, pawpaw trees and orange trees (fruit trees) were in tropical climates and are very popular food in most part of the world. Another finding of the same objective was that wood trees were other common types of trees being planted by farmers (17%). This finding concurs with that of Co-offaly (1998) who pointed out that palm trees, eucalyptus trees provided wood for different purposes. This shows that farmers also had the idea of co-offaly in their minds.

Another finding on the objective was shrubs or vegetation cover. It was found out that shrubs/vegetation cover (33%) was also another type of trees being grown. This includes shade trees, local trees and compound trees. This was also in agreement with that of Co Mayo (1995), who said that trees are grouped into Musisi trees, compound trees, natural trees, local trees, Agro-forestry trees and shade trees.

##### **Discussions of the findings on objective two.**

Objective two was to establish the benefits farmers are getting from afforestation.

The major finding on this objective was that both food and income was the most important benefit farmers were getting from afforestation (42%). This was in line with Henrie M. Kichodo (2008) who pointed out the importance of forest as being source of food, income, fuel and raw materials. This shows that farmers have more than one benefit from afforestation.

Another finding was source of food (25%), source of food was found to be a very important benefit farmers are getting from afforestation. This was also in line with that of Henrie M. Kichodo.

It was also found out that another important benefit from afforestation is source of income (17%). This was in line with Ni Dhubhain A and J.J Gardiner (1994), who said timbers from the forests are exported and earns foreign exchange to the respective countries and locally trees are sold to get money. This shows that farmers plant trees and trees are a source of income to farmers.

Another finding on objective two was that trees are sources of fuel. Trees are a source of fuel and can be used as firewood and charcoal. This was in line with Henrie M. Kichodo (2008), who emphasized that vast quantities of wood are cut annually for fuel in tropics.

This shows that forests are good sources of fuel both locally and internationally.

In this objective still, it was found out that trees provide shade and oxygen to people (animals). During hot weather, people come to rest under the trees where there is shade and fresh air (oxygen), this was in line with different scientific authors who wrote about importance of trees like Walls (1997).

### **Discussions of the findings on objective three.**

Objective three was to assess the attitudes of the farmers towards afforestation. The major finding on this objective was that many farmers were very happy and willing to plant more trees (50%). This is because they were getting so many benefits from afforestation like building, raising fund for educating the children, building houses and many others. This was concurring with Ni Dhubhain and Gardiner (1994) who said that series of statements of frequently expressed attitudes to various forms of forestry development, forestry generated employment.

Another finding here was that some farmers were already discouraged (25%). This was due to the challenges being faced which included; pests and diseases, poor climate/weather or prolonged sunshine causing seedlings to dry up every time they plant tree seedlings. This was just in line with Ni Dhubhain and Gardiner (1994) who said only 10% plant trees in future, 31% were not sure about planting more trees while the remaining 59% would not plant any tree according to the study he conducted.

## **Discussions of the findings on objective four.**

Objective four was to find the challenges that farmers are facing in practicing afforestation.

The major findings on this objective were;

Lack of capital (25%). It was found out that most farmers do not have enough capital to manage afforestation. Afforestation needs much capital to buy seedlings, insecticides (chemicals), land preparations and maintenance of forestry.

This was in agreement with Kearney B and R.O Connor (1993), who said that afforestation can only be done better by farmers who have got some better financial position.

Another finding was prolonged sunshine. The rate at which the sun is shining these days has changed and it is seriously affecting crop plantation above all tree seedlings which are drying off after planting. You can plant and the seedlings all dry off unless you irrigate your seedlings. In the past rainfall could come at the right time but now the season has changed.

In this objective another finding was shortage of land. Afforestation needs much land and this does not favour most people in urban setting since there is no much land in towns and big trading centers. Even in rural areas, most people do not have enough land to practice afforestation. Most people are only living on plots of land. This was in line with Henrie. M Kichodo (HMK 2008) who emphasized that the increase in the number of people in an area is also affecting afforestation since people need land for settlement and crop production.

Another finding on this objective was pests and diseases. It was found out that crops are seriously being affected by pests and diseases which lower their quality and kills the plans if not properly managed. This was also in agreement with many other researchers on crop pests and diseases.

In this objective, another finding was lack of skills and knowledge in planting, managing trees. Many farmers lack skills of managing trees right from nursery bed up to the time of harvesting. This concurs with Clinch J.P (1999), who said that afforestation needs skilful people most especially when dealing with modern tree species.

It was also found out that another challenge was negative attitudes in the side of farmers. Most people since they lack knowledge also have no interest/negative attitudes in

afforestation. This was in agreement with IFIF (1997) who said that most farmers have got poor attitudes towards afforestation.

## 5.2. Conclusions

### Conclusion on objective one.

Conclusions of findings on objective one, the major types of trees planted were; **fruit trees** which included; mango trees, citrus trees, avocado, pawpaw trees. **Wood trees** which included; pine trees, eucalyptus trees, Mvule trees, Musisi trees. **Shade trees** which included umbrella trees, mango trees. **Vegetation cover** which included some weeds and thorn trees like thorn apple.

### Conclusion on objective two.

Objective two on the benefits of afforestation which included building materials, poles, and timbers and rids used in building are all got from forests.

Raw materials for industries, woods are source of raw materials for wood and timber industries.

Fuel from afforestation. We can get fuel like charcoal, firewood, saw dust which help so much in cooking at home.

Source of food, fruit trees help so much in providing food to people and animals like monkeys e.g. pawpaws, mangoes, guava.

Afforestation also helps in global climate regulation by absorbing carbon dioxide and give off oxygen gas in the process of photosynthesis.

Afforestation also helps to control soil erosion.

Forest are also a source of drugs. Most drugs originated from plant and we also have local herbicides which are used as drugs.

Forests are the habitat for wild animals.

Forests are also a source of income to farmers and foreign exchange for government.

Afforestation provides employment opportunities to people.

Forest are used for research purposes.

Some indigenous people live deep within the rain forests.

Forests help to conserve soil.

Forest provides medicine.

### **Conclusion on objective three.**

The attitude of farmers can be concluded as;

Greater percentages were so much impressed with afforestation (about 50%).

Some were already discouraged because of the so many challenges they were facing in afforestation (about 20%).

Some people were not yet decided whether to plant trees or not (about 30%).

### **Conclusion on objective four.**

The challenges being faced in afforestation included; lack of capital, shortage of land, pests and diseases, prolonged sunshine, lack of skills and knowledge of how to plant trees and maintain trees, limited market for some tree species, population increase which leads to deforestation since people need fuel, land for settlement. Lack of financial support, some people has poor/negative attitudes towards afforestation. Some tree species take long in the garden before maturing, land tenure system in some areas do not support afforestation, topography in some areas also affect afforestation.

## **5.3. Recommendations**

The following recommendations have been made for improvement of afforestation. Farmers should always make;

Careful selections of the types of trees to be planted, put in mind the challenges in afforestation and plan to overcome the challenges.

Where possible, irrigation should be done in case of little or no rainfall at all.

The Sub-County leaders and community leaders including the district and NAADS (Operation Wealth Creation) should supply farmers with quality seedlings of good species.

Seedlings should always be planted early enough between March and May when rainy season has just started such that the seedlings may not dry up.

Farmers should be given agricultural loans to enable them manage their trees well most especially when they are still young.

Markets for the trees, poles and timbers should be provided for farmers.

Transport means should be availed to the farmers to enable them transport their trees to the market.

Farmers should be trained and supported in planting and managing trees.

#### **5.4. Suggestion**

Besides the recommendation given above, the following suggestions are made for improvement.

1. Continuous refresher course on afforestation should always be done.
2. Government should gazette some pieces of land for afforestation. All government lands in every place should be given to people who can use to plant trees.
3. Community Development Officers in the Sub-Counties should supply tree seedlings to every household.
4. Law should be enacted such that people plant trees by force, because if it is left at will like now, all trees will not be seen in a near future from now.

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## **APPENDIX I: SELF FORMULATED LETTER TO RESPONDENTS**

Dear respondent,

I am a student of Kampala International University (KIU), currently pursuing a Bachelor Degree in Education Primary. I am also conducting a research study on Afforestation and economic development of farmers. This research is part of the requirements for the award of Bachelor Degree in Education of Kampala International University.

You have been identified as one of the key participants in this study because of our expertise in agriculture (afforestation).

I am therefore requesting you to provide information as free as you can. The information you will give was treated with maximum confidentiality and was solely for the purpose of this study. For confidentiality purposes, you need not to write your name.

Thanks.

May God bless you as you participate.

**EBONG GEOFFREY**

**1174-07174-14722**

## APPENDIX II: INTERVIEW GUIDE FOR ENVIRONMENTAL OFFICERS

### A. Types of trees being planted by farmers.

1. Are farmers in your area practicing afforestation?

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.....

2. Do all farmers plant trees?

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.....

3. What types of trees do they plant (have planted)?

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.....

### Benefits of afforestation to farmers.

4. What benefits do farmers get from planting trees in your area?

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5. Do they sell enough?

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6. Do they cut timber/poles and sell?

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7. In what ways have /are these farmers benefiting from afforestation?

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### Attitudes of farmers towards afforestation.

8. Are these farmers who are practicing afforestation interested in their practice?

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9. Do they talk of planting more trees or not?

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.....

10. Are those people caring for their trees?

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**B. Challenges which are being faced in afforestation.**

11. Do these farmers have enough land to plant more trees?

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12. Do they complain of pests and diseases in their trees?

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13. Do these farmers have markets for the products?

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14. In your own analysis, what are the challenges this farmers are facing?

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*Thank you for answering these questions.*

### APPENDIX III: QUESTIONNAIRE FOR FARMERS.

#### A. Types of trees being planted by farmers

1. Do you have trees in your garden?

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.....

2. Do you have local tree species or modern tree species?

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.....

3. What type of trees do you have in your garden?

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#### B. Benefits farmers are getting from planting trees.

4. What benefits do you get from these trees in your garden?

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.....

5. Do you sell these trees?

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.....

6. Do you sell fruits from your garden?

.....  
.....

7. What development have you made so far from afforestation?

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.....

#### C. Attitudes of farmers towards afforestation.

8. Are you interested in this work of growing trees?

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9. What are the reasons for your interest in this practice of afforestation?

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10. If **NO**, what disappoints you with this experience of planting trees?

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.....

11. What development have you made since you started this exercise of tree planting (afforestation)?

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**D. Challenges being faced in afforestation.**

12. What are the challenges you are meeting in this exercise of afforestation?

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13. Are your trees being disturbed by too much sunshine?

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14. Do you have enough land for planting more trees?

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15. Are your trees also attacked by pests and diseases?

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16. Do you have ready available markets for your tree products?

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*Thank you for answering these questions.*

APPENDIX IV: MAP OF AMOLATAR SHOWING ETAM TOWN COUNCIL.

