

ASSESSMENT OF ENVIRONMENTAL AND THE EFFECT OF DEFORESTATION ON SOCIO-ECONOMIC ACTIVITIES OF PEOPLE OF FUNAKAYE, GOMBE STATE

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Abstract: Human activities, climate change and couple with rural poverty have led to increase deforestation in the rural areas and low productivity of the soil in the tropic, the green environment may be difficult to be sustained. There is a need of awareness on how to understand the constraints and challenges of deforestation especially in the studying area. This study therefore assesses the effects of deforestation on the socio-economic activities of the people of Funakaye Local Government Area, Gombe state. A total number of Three hundred and fifty (350) structured questionnaires were administered to the respondents, tools for data collection, structured questionnaires, interviews, field observation that both the descriptive and inferential statistical methods of data analysis were used. The study is able to identify the causes of deforestation perceived by the respondents in the studied area which includes; Over farming activities (21.2%), Fuel wood (29.3%), Charcoal (45.2%), Over grazing (4.3%). The major cause of deforestation is rural poverty about 92%. It also reveals that 74.2% of the respondents use fuel wood as their source of energy while 14.2% use Charcoal, 5.5% use Kerosene, 4.6% use Gas and only 1.5% use Electricity. Due to the reducing availability of forest products in the nearby forest about 93% of the respondents had to buy their daily needs for fuel woods, charcoal, fodder, and small timber, these increase their household expenditures, also resulted into decrease in the household income of the majority. Deforestation increases Soil erosion, desertification, flooding and atmospheric temperature. This study recommends that government should create public awareness on environmental conservation management and provides another source of energy that substitutes fuel woods and charcoals for daily activities.

Keywords: Human activities, socio-economic activities, green environment, flooding and atmospheric temperature.

1. INTRODUCTION

Deforestation is the process of removing forest areas and using the land for other uses. These other uses can include settlements, industrialization or agriculture. Deforestation also has been described as the cutting down of trees without planting others in their place. It is hard to think that there was a time when 90% of the earth was covered by trees. Even though people are becoming more and more aware of the serious effects deforestation is having on the earth, the number of forests being destroyed is still very high [1]. The main question about the One of the consequences of deforestation is that the carbon originally held in forests is released to the atmosphere, either immediately if the trees are burned, or more slowly as unburned organic matter decays. Cultivation also oxidizes 25-30% of the organic matter in the upper meter of soil and releases that to the atmosphere. Reforestation reverses these uses of carbon. While forests are re growing, they withdraw

carbon from the atmosphere and accumulate it again in trees and soil. Current estimates of carbon emissions from tropical deforestation The emissions of carbon from tropical deforestation are determined by two factors: rates of land-use change (including harvest of wood and other forms of management) and per hectare changes in carbon stocks following deforestation (or harvest) [2]. The causes of deforestation are varied but may broadly be categorized into anthropogenic and natural factors. For the anthropogenic factors, increased wood fuel collection, clearing of forests for agriculture, illegal and poorly regulated timber extraction, social and environmental convicts, increasing urbanization and industrialization are the primary known causes for the loss of forests and woodlands [3]. Because of the variety of ecosystems and land uses, and because annual changes require accounting for cohorts of different ages, bookkeeping models are often used to calculate the emissions and uptake of carbon over large regions By practicing deforestation the forest areas provide lumber for commercial materials, farming and grazing land for the every growing cattle population, charcoal as fuel for cooking and heating. Roads and mines are being built as well as towns and cities. Forests are becoming exhausted in developed nations and our attention is now on the tropical areas, more specially the tropical rain forests. We are dependent on forests for our livelihood. As the forests disappear, resources are becoming scarcer. Third world or underdeveloped nations are being extorted for their forests and are given minimal return for the damage done to their own country [1]. Nigeria could face the possibility of timber and fuel wood scarcity towards the end of the century. It has been predicted that within the next fifty years, unless adequate measures are taken, most humid tropical forestland area in Africa could be transformed into unproductive land and the deterioration of the savannah into desert will be accelerated [4].

People, especially those who live in rural areas where electricity and gas are unavailable, resort to use of redwood as a source of heat. Here, wood is cut down and burnt. Those proximate reasons are accompanied by underlying causes for deforestation. Faced by food insecurity agricultural land is just more valuable to farmers. Individual farmers do not have many other options than converting forests into agricultural land if they are exposed to severe food insecurity. Their time preference rates are low which means they prefer food today over tomorrow and they definitely cannot carry the costs of forest conservation for the larger national or global society [5] A plantation of trees established primarily for timber production to be forest and therefore does not classify natural forest conversion to plantation as deforestation (but still records it as a loss of natural forests). However, FAO does not consider tree plantations that provide non-timber products to be forest although they do classify rubber plantations as forest. Forest degradation occurs when the ecosystem functions of the forest are degraded but where the area remains forested rather cleared [3].

If the society know the impact of deforestation the do not practice the things those have negative effect on forest. Knowing the factors that contribute to deforestation is very important to protect and conserve. Therefore, sustainable forestry management must include safe, stable jobs with adequate wages and working conditions [6]. Generally, deforestation is caused by a variety of factors [7]. However, [8] viewed deforestation as clearing of any area of its natural vegetation cover which is normally lead to decrease in plants population resulting in loss of plant biodiversity Nonetheless, excessive deforestation over a long period has been the cause of many drought like features [9]

2. THE STUDY AREA

The study areas were located within Funakaye local government, Gombe state, Nigeria. Funakaye was located in the Northern Sudan savannah zone of Nigeria falling within longitude of 11⁰43 E and latitude of 10⁰85 N with altitude of 283.43m above sea level. It has an area of 1,415 km² and a population of 236,087 at the 2006 census, it has a tropical climate with a well-defined rainy season, which occurs from April to November and the dry season from November to April. Funakaye is bounded in the east by the Gongola River and Lake Dadin Kowa, beyond which lie Yobe State and Borno State.

3. MATERIALS AND METHODS

The data for this study was generated from field survey conducted in the area and relevant literature on the subject matter through the administration of questionnaire. A total number of 350 Questionnaires were randomly administered to the respondent from selected areas. For the questionnaire administration, checklist was used, and designed with the type of questions that are relevant to the study objectives. These Areas include Bajoga, Wawa, Siddikiyo, and Abuku in Funakaye Local Government Area of Gombe state. Two types of questions pattern were used; these are the structured and semi-structured. Responses were coded and analyzed using Microsoft excel package where frequencies and percentages were derived and the results were presented using tables, bar graphs and pie charts. These methods of analysis were selected to

enable the phenomenon to be assessed without difficulty and to provide basis for the assessment of the problem. The raw information were tabulated and subjected to descriptive statistical analysis to assess the effects of deforestation on socio-economic development in the study sites thereby drawing inferences from the observed frequencies. The questionnaire covered basic information of respondents profile such as age, educational level, occupation, income among others. Other questions raised include primary source of energy for cooking, nature of the effects of deforestation, method of grazing, impact of tree felling, effects of deforestation on socio-economic development of Funakaye Local Government Area. While the secondary data source involved the search into published and unpublished materials relevant to the subject matter.

4. RESULTS AND DISCUSSION

It was deemed necessary to generate information on the profile of respondent to reveal some basic information on their socio-economic activities and thus, information on age, educational Background, occupation, causes of deforestation, source of energy and effects of deforestation on the socio-economic were solicited from the respondents in the selected villages. Survey results indicated that the bulk of respondent are within the age between 41 to 60 years and this constitute 47.8% and the least falls within the age between 18 to 20 being the active age mostly school age group are 7.2%. The respondent that falls within the age group of 41 to 60 are mostly adult and farmers that are engaged in one form of tree felling or the other.

This implies that the age distribution for the respondents were not even.

Table 1. Shows the age distribution of respondents

Age	Respondent	Percentage
18-20	25	7.2%
21-40	123	35.7%
41-60	165	47.8%
>60	32	9.3%

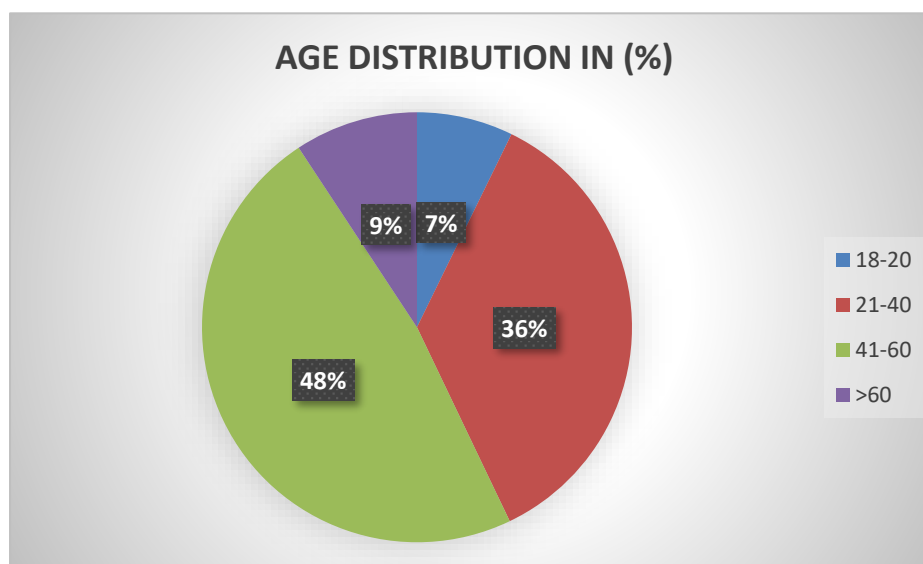
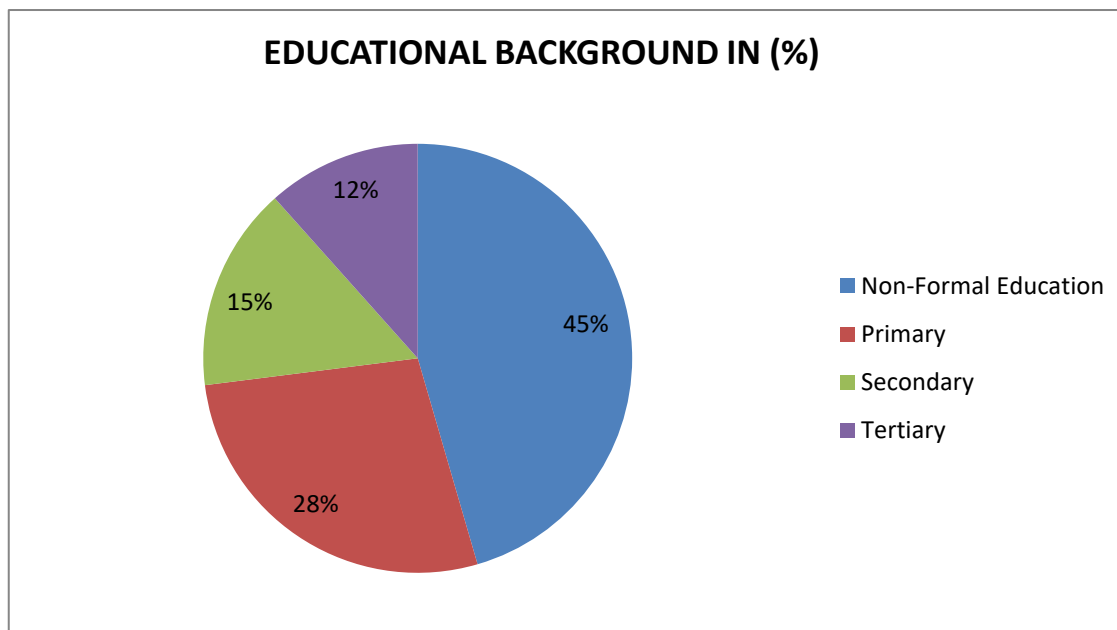


Figure 1. Age distribution of the respondents

On the educational background, survey responses revealed that 45.5% of the respondents have Non- formal education, 27.5% of the respondents attended primary education, 15.4% Secondary school while 11.6% had bachelor's degree and above. The overall scenario reveals that 45.5% of the respondents are illiterates and lack the basic knowledge of modern farming practices. Those that are somehow educated have taken up white collar jobs in bigger cities. Those residing in the villages are farmers who have little or no knowledge of the effects of deforestation on the socio-economic development of the study area, thereby engaging themselves in indiscriminate felling of trees for survival and without any thought of replacing them due to lack of awareness.

Table 2: Provides the educational Background of respondents

Education Background	Respondent	Percentage
Non-formal Education	157	45.5%
Primary	95	27.5%
Secondary	53	15.4%
Tertiary	40	11.6%

**Figure 2: Educational Background of the respondents**

The response on occupation revealed that 51.0% of the respondents are farmers (cultivators and grazers), 21.2% selling Charcoal, 15.1% selling fuel wood, for fuel, 7.2% are civil servants while the remaining 5.5% are in other occupational sector. This shows that the major occupation of the inhabitants is agriculture (farming), Charcoal and fuel wood trade this is due to their low level of education, most of the respondents are subsistence farmers growing crops such as maize, millet, sorghum, rice, beans, groundnuts, cassava, amongst others; and some little cash crops are being grown by the respondents. This practice requires clearing of large tracks of arable land that leads to deforestation due to increased demand arising from population increase. Occupation of the respondents is taken into consideration in order to ascertain how their occupation influences deforestation in the study area. The study has shown that due to the low level of education of the respondents they are oblivious to the fact that deforestation affects the socio-economic development of Funakaye Local Government Area through their unhealthy agricultural practices, the effects of these practices includes the destruction of biodiversity leading to the decline in agricultural productivity and thereby slowing the socio-economic development of the study area, this can easily lead to hunger, starvation and famine if not quickly checked.

Table 3: Shows the occupation of the respondents

Occupation	Respondent	Percentage
Farming	176	51.0%
Charcoal trade	73	21.2%
Fuel wood trade	52	15.1%
Civil servant	25	7.2%
Others	19	5.5%

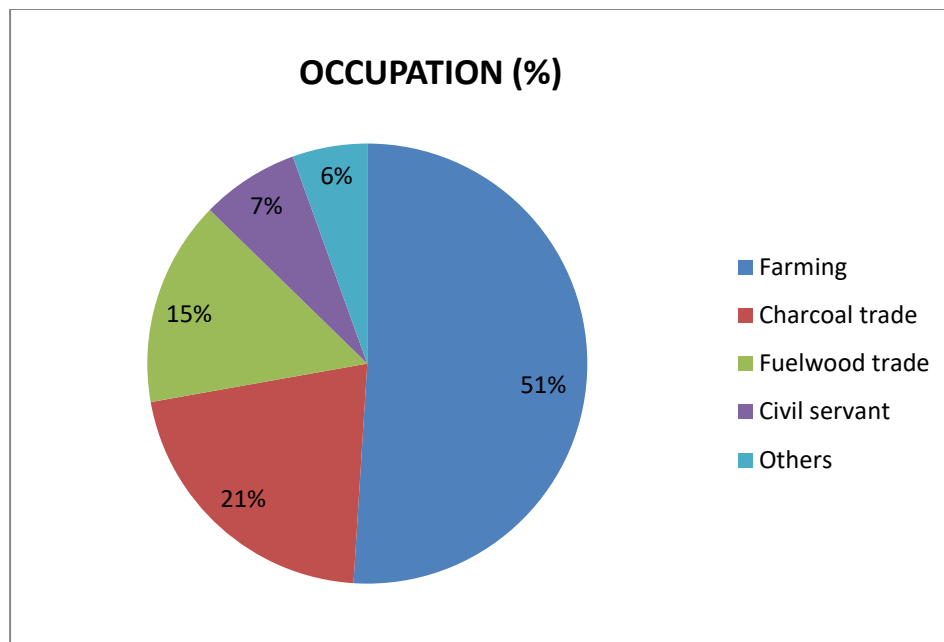


Figure 3: Occupation of respondents

This study reveals that 45.2% of the respondents causes by charcoal, 29.3% of the respondents cause by fuel wood, 21.2% cause by over farming and 4.3% cause by over grazing. Majority of the respondents believe that the causes of deforestation is severe, the impact of deforestation include the loss of biodiversity plants and animals, soil erosion and the distortion of the hydrological circle. All these can lead to the reduction of crop yield since most of the respondents are subsistence farmers thereby affecting their socio-economic development.

Table 4: Shows the level and nature of causes of deforestation on the study area

Causes of Deforestation	Respondent	Percentage
Charcoal	156	45.2%
Fuel wood	101	29.3%
Over farming	73	21.2%
Over grazing	15	4.3%.

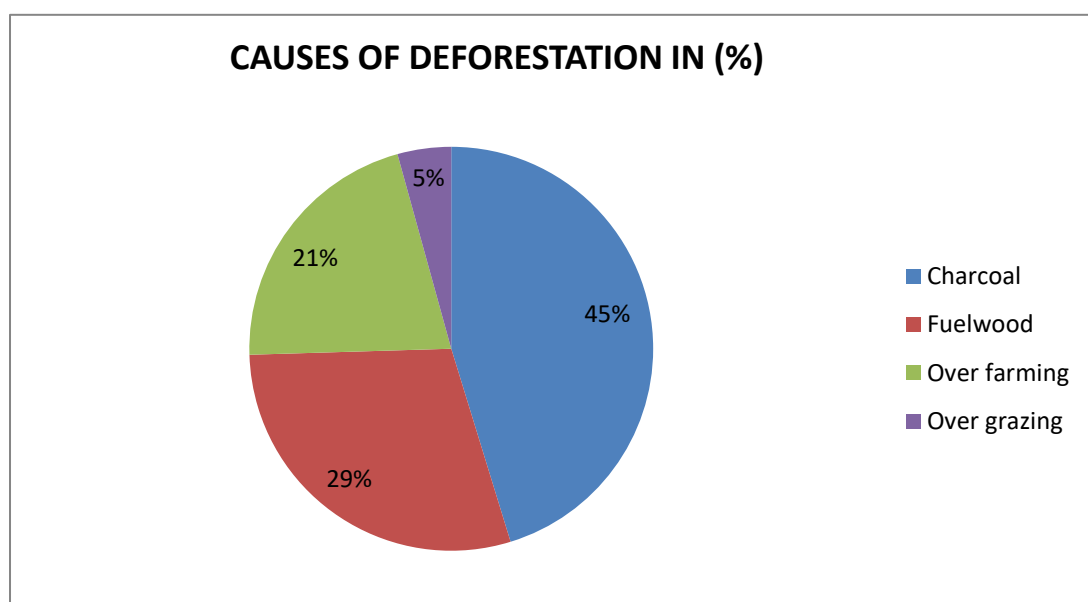


Figure 4: The figure below shows the level and nature of causes of deforestation on the study area.

This reveals that fuel wood constitutes the bulk of primary source of energy for cooking which is closely followed by charcoal a product from trees and few from kerosene, Gas and Electricity. This therefore, implies that the major source of energy consumed in most parts of the study area is closely associated with deforestation because fuel wood and charcoal are basically cheaper and affordable by the respondents. The respondents engage in indiscriminate felling of trees to obtain energy without taking into cognizance its impacts on the socio-economic effects on the environment such as climate change, soil erosion, desertification and flooding.

Table 5: Primary source of energy for domestic activities

Source of Energy for Domestic	Respondent	Percentage
Fuel wood	256	74.2%
Charcoal	49	14.2%
Kerosene	19	5.5%
Gas	16	4.6%
Electricity	5	1.5%

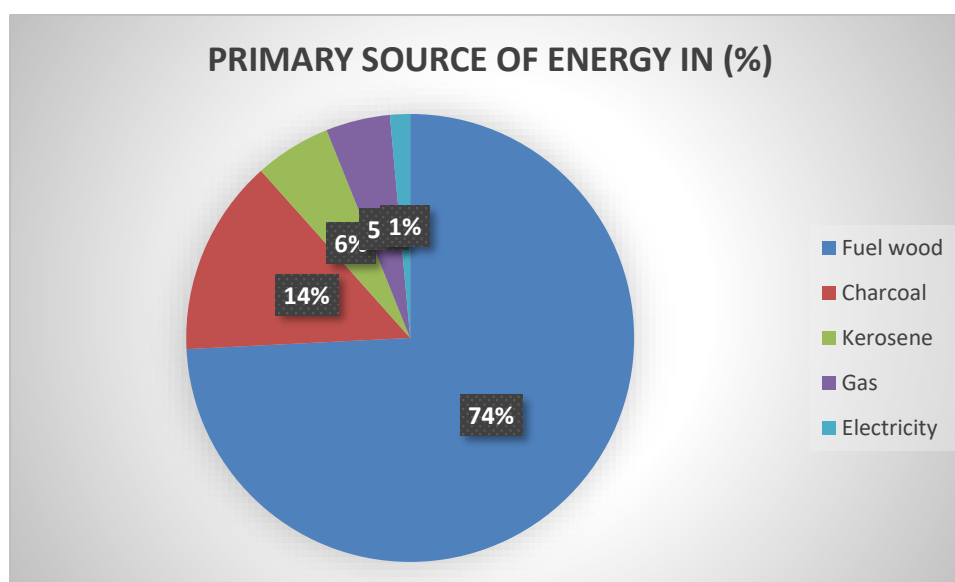


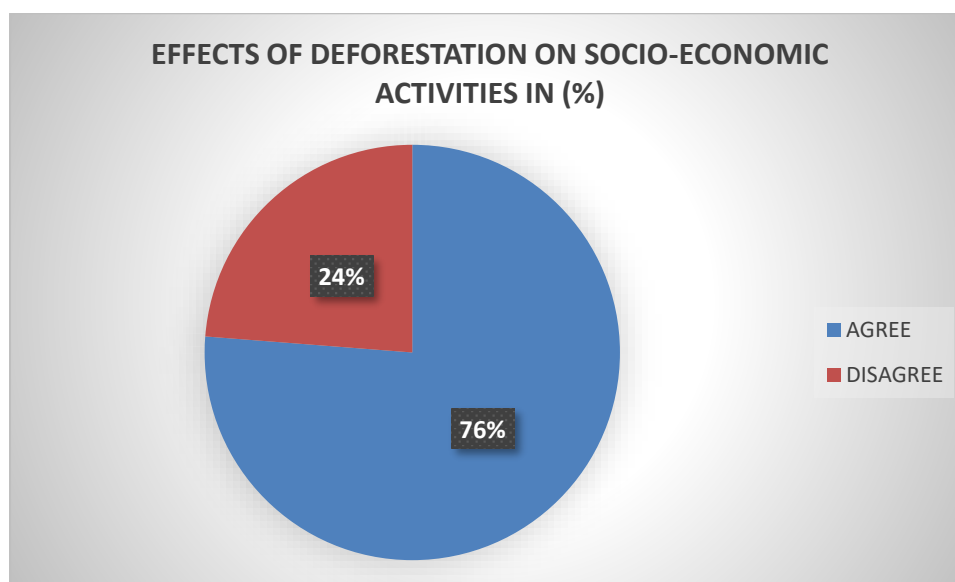
Figure 5: Primary source of energy for domestic activities

Effects of deforestation on the socio-economic activities

On the effects of deforestation on the socio-economic development of Funakaye, about 76.2% of the respondents indicated that deforestation has affected the socio-economic development of Funakaye Local Government Area negatively while 23.8% of the respondents disagreed with the proposition that deforestation negatively affects socio-economic development of Funakaye Local Government Area. Some of the socio-economic changes in Funakaye Local Government that is directly linked to deforestation include the Atmospheric temperature and soil erosion. As a consequence the soil loses its fertility and there is poor crop yield. Also, it leads to accelerated erosion in the study area. Most of the respondents believe that deforestation has reduced crop yield, this is due to the fact that the level of crop production keeps dropping in recent years as farmers are ill-equipped to combat the problem of erosion, the loss of plants that has medicinal potential and animal species that have migrated to other areas because of loss of habitat all contribute negatively to the socio-economic development in the study area. Most of the forested lands in Nigeria are located in the rural areas and in these areas where the level of environmental awareness is very low compared to the highly enlightened populace in the city centres. Therefore, the physical effects of deforestation which are mostly environmental are not foreseen by the rural dwellers. However the economic effects of deforestation which affects their substance directly cannot be over emphasized. It is thus very common to observe the high cost of forage crops and other forest products as deforestation results in their scarcity in communities and settlements where they used to be cheap and available; this is in agreement with (Oguntala, 2000).

Table 6: Effects of deforestation on the socio-economic activities

Effects of deforestation on the socio-economic activities	Respondent	Percentage
Agree	263	76.2
Disagree	82	23.8%

**Figure 6: Effects of deforestation on the socio-economic activities**

5. CONCLUSION

According to the data gathered and analyzed, the most contributing factors to deforestation is expanding agricultural farm land. Because of population growth and the need for food increased people interested to expand farm land which is the base line for enough food availability. As well as cutting trees for charcoal is also another factor contributing to deforestation in Funakaye. Because of peoples used charcoal for cooking food and they uses as an income/ they sell and get money. To have this important charcoal, they are going to cut trees and change it to charcoal by burning. However there are different factors contributing to deforestation, the current deforestation status of Funakaye is decreasing due to lack awareness of the impact of deforestation. Deforestation which gives rise to global warming is instigated by natural and anthropogenic factors but human beings are the major contributory factor to the climate change which has become the new reality environmental degradation especially desertification and soil erosion and loss of biodiversity in the more humid guinea Savanna and rain forest regions.

6. RECOMMENDATIONS

From the collected and analyzed data the investigator has tried to mention the following recommendation for concerned bodies. Since the most factors contributing to deforestation is Expanding farm land for agriculture, the community those are practicing this deforestation should have to have enough knowledge about the impact of deforestation on both living thing and environmental change. There should be controlling and giving immediate solution for peoples those are practicing deforestation for the case of charcoal. Environmental education should be accorded to the general public on the dire consequences of deforestation on people and the society at large, Government should embark on the program of tree planting by enlightening the public and its importance to them, and Environmental education should be accorded to the general public on the dire consequences of deforestation on people and the society at large, Skills acquisition program should be organized for rural women dwellers and the uneducated youths in order to curtail the rate of deforestation, Government should add more effort on poverty eradication program, and the educated unemployed youths should be accorded employment, government should create public awareness on environmental conservation management and provides another source of energy that substitutes fuel woods and charcoals for daily activities.

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