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Socio-economic characteristics of fuelwood cutters in gadam, kwami LGA Gombe State, Nigeria

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Abstract
The paper tries to explore the Socio-economic Characteristics of Fuelwood Cutters in Gadam. The socio- economic status of fuelwood cutters were studied, the nature of fuelwood cutting as well as the possible measures that are put in place to halt the reckless felling down of tress in the name of fuelwood. Both qualitative and quantitative data were used in the study. Questionnaire and interview schedule methods are the tools used in data collection. The data were analysed using simple statistical techniques, percentage tables. The result revealed that majority of the fuelwood cutters are men within the age bracket 25-35 mostly married with Qur, anic and primary level of education. The study further discovered that trees are cut indiscriminately. Mostly fresh ones are been cut and allow to dry before taken to nearby town for sale. Finally the study suggested that such measures should be put in place to halt the indiscriminate cutting down of tress, government to provide alternative sources of energy such as affordable and reliable electric, solar and kerosene stoves, Public enlightenment campaign should be intensified among others.

Keywords: fuelwood, forest, economic, income, fuelwood cutters

Introduction

Fuel wood is any wooden material used as fuel (FAO, 2010) [12]. Almost two-third (2/3rd) of the world population cooks and heat with wood and or charcoal. Fuelwood is more important as an energy source than oil for the biggest part of humanity (AIAE 2005) [4]. In less developed countries, fuel wood has been the major source of fuel to many countries; in fact it is the primary source of energy for nearly half of the world population (Bashir 2015). Because fossil fuel and electricity is very expensive for both rural and urban poor, couple with increasing population growth, fuel wood exploitation inevitably, become the most attractive and therefore an alternative source of energy for this category of people. (Bashir, 2015). About 90% of the household in sub-Saharan Africa use fuel wood as a stable energy source for domestic heating (Ehiemere *et al* 1996) [11] noted that, fuelwood and charcoal account for over 80% of natural energy consumption in Nigeria.

Modern society is cough between urgent demand to cater for the needs of growing population while preserving the earth`s natural resources and its environment for future generations (Adebimpe, and Ibrahim 2008) [3]. Most poor rural communities meet their energy need through fuel wood. This led to excessive exploitation of fuel wood for domestic use and for sales (Abdulrasheed, 2015). Generally, rural house hold income in South Africa and most developing countries are not restricted to wages or crop production. But on a complex mix of different activities, many of which depend on forest resources available to them. (Cline-cole *et al*, 1990) [8]. Unsustainable use of wood fuel resources according to FOA "is therefore, a threat not just to the resources base and ecology but also to the entire rural socio-economic system (Ebe 2006) [10]. This includes decrease in soil fertility which in turn can reduce crop yield.

The collection of fuel wood has turned environment into ecological nightmare within the last three decades, historical forest have varnished or were reduced to mere shrubs (Dovie *et al* 2004) [9]. The damage was not unconnected with high demand for the fuelwood as alternative energy source which are not within the reach of the teeming population (Ali and Benjamen 2004) [5].

Aim and Objective

The aim of this paper is to find out the socio-economic characteristics of fuel wood exploiters in Gadam. These are to be achieved through the following objectives.

1. To find out the socio-economic characteristics of fuel wood exploiters in Gadam.
2. To find out the nature of fuelwood cutting in the study area.
3. To suggest some possible measures to be employed in controlling the activities of fuel wood cutting.

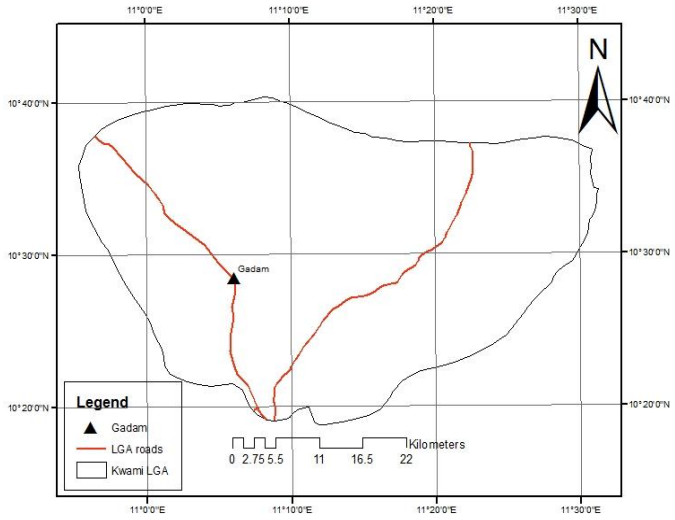
Justification of the Study

The environmental impact of reckless felling of trees for fuelwood is spelling doom to the entire business. In recent years there has been a sharp increase in human population which led to commercialization of various renewable energy sources. High need of domestic energy in both rural and urban areas in northern Nigeria threaten environmental sustainability especially in areas where single source (fuelwood) is constantly used due to poverty and human lots. Various environmental degradation are accentuated by man's relation with resources such as deforestation, soil erosion and pollution these have manifested in many northern state of Nigeria, there is need for restrain and proper actions to avoid bleaking the future.

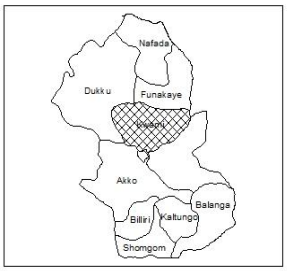
The Study Area

Gadam is located in Kwami local government area of Gombe state. It is located at latitude and longitude $11^0\,06^1$ and $10^0\,28^1$ respectively, at the northern part of Gombe, the headquarter of

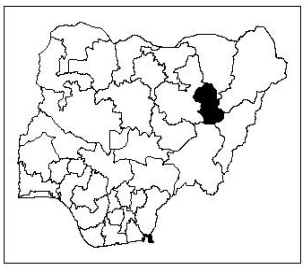
Gombe state about 18km along Gombe-Kano road (GSGD 2012) [13]. It is bordering with Bojude in the north, Kafareti in the south, Akko local government in the west and south west, Malam sidi in the south east and Funakaye local government in the east all in Gombe state. The average altitude of Gadam ranges from 360-400m above mean sea level. The topography of the area is generally open plain and undulating in the eastern part. It has a population of 94,217. (NPC 2006). The minimum and maximum temperature (www.googlescholar 2016) [15] e ranges from 15 to 33 degree Celsius. The predominant ethnic group in Gadam is Bolewa. Other ethnic groups are Hausa, Fulani, and Kanuri. The dominant occupation is agriculture. The natural vegetation of the area is the savanna parkland type of vegetation. The natural vegetation consists of various species of trees, shrubs and grasses. But intensive cultivation of farm lands, grazing by animals and fuel wood extraction have considerably changed the vegetation and tended to prevent natural succession. The predominant species consist of Anageissus leiocarpus (Marke), Deterium microcarpus (Taura), Khaya senegalensis (Madaci), Parkia biglobosa (Dorowa), Ziziphus mauritiana (Magarya), Vitex doniana (Dinya), Adansonia degitata (Kuka). Also, in the study area, there are some perennial and annual shrubs, herbs and grasses.



Kwami LGA Showing Gadam



Gombe State Showing Kwami LGA



Nigeria Showing Gombe State

Materials and Methods

The main instruments of the study are the questionnaire and interviews. The questionnaires are to collect quantitative data while the interviews are meant to measure the qualitative information. The two instruments can supplement one another and can serve as triangulation method where errors and mistakes can be detected and corrected.

Sampling Techniques and Sample Size

Gadam has about 21 villages which were politically demarcated by Independent National electoral commission (INEC), Six out of the villages were sampled using purposive sampling method. Purposive sampling method was used to sample the villages. This is because of the higher concentration of fuel wood extractors in those villages. The six villages that were sampled include; Dawo, Dawo Kaba, Gadam, Jauro Gambo, Tappi and Yame. For selection of respondents, simple random sampling techniques were adopted. Some samples of sixty (60) respondents were drawn from the study area.

Samples of 10 respondents were drawn from Tappi, Jauro Gambo and Dawo, 7 respondents from Yame, 8 from Dawo Kaba and 15 respondents from Gadam. This is due to differences in the concentration of fuel wood extractors in the villages as observed during reconnaissance survey. The interview was conducted around 2-3pm when the respondents go to rest and take their lunch.

Method of data analysis

Both descriptive and inferential statistical techniques such as mean and percentages were employed to analyze the data collected. However, data were also tabulated such that different values of variables were presented in one column with entries in other column showing the frequency of the classes. The frequencies were then converted in to percentages to show comparisons between the variables.

Presentation of Results

The section analyzes the findings of responses of the questionnaires sets of interview schedule administered to the fuel wood cutters and fuel wood vendors in Gadam. Information obtained from the interview is summarized using appropriate descriptive statistics such as pie charts, bar graphs, frequencies and percentages.

The interview conducted and responses from the respondents revealed that majority of people involved in the fuelwood business are men, almost hundred percent of the respondents were involved in the cutting of wood logs, resizing, tightening and transporting the product into town (table 4.1). From the study conducted, it was observed that geographical settings, religious and cultural factors play a vital role in tilting the business towards men in Gadam area. Adults within the age bracket of 26-35 years constitute more than half of the sampled respondents. More than half of the participants in fuelwood related business in the study area are people with Islamic education or non-formal education. They do not enjoy the benefits of western or formal education even though the area has numerous public and private schools. Close to half of the respondents who claimed to have formal education few of them have primary and secondary school leaving certificate. The occupational and income distributions are closely related. The nature of occupation determines their level of income. More than half of the respondents are engaged in fuelwood related business activities, less than half in different activities like farming, driving, wood carving and the civil service. The findings here revealed that the general income is below the national minimum wage of N18,000 per month, this is too low for the fuelwood cutters to gather money to start up another business.

Table 1: Socio-Economic Characteristics of Respondents

*Gender	Respondent	Percentage
Male	57	95%
Female	3	5%
***Marital Status**		
Married	46	76.7%
Single	14	23.3%
***Age**		
15—25yrs	18	30%
26--35yrs	23	38.3%
36--45yrs	15	25%
46 and above	4	6.7%
***Level of Education**		
Islamic	19	31.6%
Primary	25	41.6%
Secondary	15	25%
Tertiary	01	1.6%
***Occupation**		
Business (fuelwood)	46	77%
Civil Servant	14	23%
***Income Level Per Month**		
Below N 18,000	25	41.7%
N18,000- N30,000	15	25%
N30,000- N50,000	12	20%
Above N50,000	08	13.3%

***Source*:** Field Survey, February 2014

Nature of Fuel Wood Cutting In the Study Area

Table 2: Type of trees felled (method of collection)

Method of collection	Frequency	Percentage
Live ones	20	33.3
Dead ones	16	26.7
Both	24	40
Total	60	100

***Source*:** Field work 2014.

The study discovered that majority fuelwood cutters cut both dead and live ones. Close to halve of the respondents cut live ones and few of the respondents concentrate on the dead trees. This is an indication that fresh trees are cut down more than dead ones. This portent serious concern about the dangers facing the forest reserves in the study area. It is therefore, observed that, the forest area will become history in the near future if the activities of tree cutting continues unchecked as it is as at the time of this research.

Possible measures to be employed in controlling the activities of fuel wood cutting.

This section looks at the possible measures when put in place will reduce the quantum of fuelwood exploitation in the study area. Since majority of people depends on fuelwood for cooking and heating, there is need for government to provide alternative sources of energy such as affordable and reliable electric, solar and kerosene stoves at a reasonable price. These will reduce the pressure and salvage our forest from further damage.

People should be encouraged to patronize raw food and those that requires low amount energy to cook or heat as an alternative. Public enlightenment campaign should be intensified to sensitize and educate people on the importance of safeguarding the remaining savanna parkland and environmental quality so that all actions that are detrimental to our natural ecosystem are reduced, checked or avoided.

Conclusion

The activity of fuelwood cutting is a long profitable business that generates income to rural dwellers due to ever increasing demand for the product in the urban centers. Fuelwood exploitation in the study area which have been taking place for quite a long time and has been on the increase will cause a serious damage to the natural ecosystem in the area. With current dependence of people on the forest resources for fuelwood and other day to day activities with attendant population growth rate this situation will worsen unless measures are put in place to tackle the activities of fuelwood cutters.

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