GLOBAL JOURNAL OF PURE AND APPLIED SCIENCES VOL. 14, NO. 1, 2008: 131 - 134

 1SSN 1118-0579

WOMEN AND HOUSEHOLD ENERGY USE IN CROSS RIVER STATE

D. A. OGAR, H. M. DENGA AND P. O. OGAR

(Received 2 December 2006; Revision Accepted 20 June 2007)

ABSTRACT

A study was carried out in two urban areas namely Calabar Municipality and Calabar South and three peri-urban communities namely Ugep, Ikom, and Ogoja in Cross River State, Nigeria in 2003 to evaluate household energy use available to women and their knowledge of the environmental implications of each household energy. A seven-(7) items close ended structured questionnaires (150) was used to elicit information from the women. The results showed that kerosene represents 40%, fuelwood 20%, electricity 20% and charcoal and gas 10% each of the household energy used by women. A greater percentage 70 (χ^2=75·520 P ≤ 0.05) of the women were aware of the environmental implications of the household energy used in cooking, heating and lighting. This study has shown that household energy available to women for use in Cross River State include kerosene, fuelwood, electricity, charcoal and gas.

KEYWORDS: Women, Household Energy, Urban and Peri-Urban.

INTRODUCTION

Women in Nigeria are the major users of household energy. Women use firewood, charcoal and cooking gas, kerosene and electricity either for cooking, heating or lighting. FAO (2003) stated that fuelwood is one of the energy sources in the country and form over 80 percent of the total wood consumed and more than 60 percent of the total household energy consumption in tropical Africa. Ojo (2001) stated that women are closer to their immediate environment. Majority of rural Nigerians depends on fuelwood for cooking and heating for both domestic and non-domestic purposes. The demand for fuelwood is high in developing countries of the world (Akachuku, 2001). This could be attributed partly to the fact that a lot of people in these countries cannot afford other forms of energy sources such as kerosene, cooking gas and electricity.

Women face several hazards in an attempt to collect fuelwood and often they are the first to feel the impact of environmental degradation such as deforestation. The structure of the society determines the extent and sources of energy consumption. Between 1975 – 1985, the dependence on kerosene and cooking gas in Nigeria increased as a result of the increase in the country's per capita income (Ogar, 2001). With the frequent increase in the prices of petroleum products particularly kerosene and cooking gas, an average Nigerian cannot afford to use kerosene and cooking gas. The prices of petroleum products in the last ten years have more than doubled (Ogar, 2001).

The use of a particular energy source depends on the availability, cost of such energy, cultural values and environmental hazard of such energy source. The attitude of people toward a particular energy source is an evaluative deposition towards that energy source, which determine the interest of the individual in the energy type. Also, the availability and cost of household energy determine the type of diet taken and the number of meals a family take in a day Akacukwu (2001). Further more, family size determines the rates and types of meals a family consumes and the energy they use for cooking. When the prices of kerosene and cooking gas rises, the consumers of household energy, which women are in the majority, tend to shift from the consumption of petroleum products to fuelwood, which is relatively common and cheaper energy source in the country. Government has recently withdrawn subsidies on petroleum products leading to increase in the prices of kerosene and cooking gas.

Another forms of wood used by women in the country include sawdust and wood chips. Kura (1996) stated that about ninety (90) percent of Nigerian population depend on wood energy, which account for about 60-90 percent of the total energy use in the country. For instance, in Kano state, a total of 92.2 percent of households use fuelwood as domestic energy source, while 6.5 percent, 1.3 percent use kerosene and cooking gas respectively as household energy. Kura (1996) indicated that on average, 33.2kg of fuelwood are used daily in a household.

In Oyo State, over 35% of those who collect fuelwood from Gambari Forest Reserve were women. Madon (2000) reported that people in Ethiopia, Madagascar, Mali, the Niger and Senegal dislikes cooking with wood because it is awkward and difficulty to kindle.

The price of household energy influences the type and quantity of energy consumed by any household. The various household energy have different negative impact on the environment, which include deforestation, soil erosion, pollution, global warming, ozone layer depletion and health (NEST, 1991). Some household energy such as firewood, charcoal and kerosene emit considerable amount of smoke, smog particulate and many kinds of harmful gases, which are potential hazardous products that pollute the environment. Albelaka et al (1999) stated that the World Health Organisation estimated that two (2) million people in developing countries (the majority under five years) die prematurely every year from the exposure to the combustion products of household fuels. The paper examines the household energy types available to women in Cross River State for cooking, heating and lighting. It also examine the reasons for women choice of household energy types in the state and the environmental implications of the household energy.

MATERIALS AND METHODS

A two stages samplings schemes was adopted in 2003 in which, first, two Local Government Areas (LGAs) were selected from the urban areas – Calabar Municipality and Calabar South and three Local Government Areas were also selected from the Peri-urban areas (Yakourr, Ikom and Ogoja). Through the use of a random number table two communities were selected from each Local Government Areas for detailed study. Then fifty households were randomly selected from each LGA. A total of two hundred (200) questionnaire were

D. A. Ogar, Department of Forestry and Wildlife Resources Management, University of Calabar, Nigeria.
H. M. Denga, Department of Environmental Education, Institute of Education, University of Calabar, Nigeria.
P. O. Ogar, Department of Environmental Education, Institute of Education, University of Calabar, Nigeria.

administered to the respondents but only one hundred and fifty (150) of them were used for data analysis. Questionnaires were administered to women of each household. The communities were sampled once every six months for one year. Apart from the questionnaires, verbal interviews were held with the respondents to elicit information. Questions asked ranged from the types of energy sources women use in cooking, heating and lighting and the sources of such household energy to them. The knowledge women have on the environmental implications of household energy was also examined. Primary data collected was subjected to frequency and simple percentage analysis while chi-square was used to test for significant differences between the means.

RESULTS AND DISCUSSION

Marital status

Table 1 showed that 60% of the women interviewed were married and had children. It is observed that much household energy was consumed in the household with children than in a household with only husband and wife. Large family size entails high demand for household energy necessary to maintain the family through increases in household energy use.

Age of respondents

Table 1 indicated that 70 percent of the respondents were in the age bracket of 20-31 years old. This age bracket is the active productive age. In this age bracket, a lot of household energy was consumed. It appears that the larger a family size is, the greater the household energy consumed by the household. Omorah (2000) observed that family size tend to influence the choice of household energy. A single household tends to consume less household energy and prefer the use of kerosene to fuelwood.

Educational status and occupation of respondents

Educational levels of respondents do determine as well the type of household energy source used by respondents, with 30 percent of the respondents having primary education. Forty (40) percent of the respondents had at least first degrees (Table 1). The income determines the type of household energy source consumed. Kura (1996) stated that women with low educational level, and low income status depend more on fuel wood than on petroleum products such as kerosene and cooking gas. This is so, because as shown in the study the people with low educational status, earn no substantial income.

Table 1: Marital Status, Age And Educational Level Of Respondents

	Frequency	Percent (%)
(I) Married status		
Married	90	60
Single	80	40
Total	150	100
(ii) Age of respondents		
Less than 19	30	20
20-25	75	50
26-31	30	20
32-and above	15	10
Total	150	100
(iii) **Education status**		
Primary	45	30
Secondary	15	10
NCE/OND/HND	30	20
University Degree	60	40
Total	150	100

Field Survey, 2003.

Household Energy Available to Women in the study Area

Table 3 showed that woman in the study area used five (5) major types of household energy for cooking, heating and lighting. This energy includes firewood, charcoal, kerosene, cooking gas and electricity. Among all, kerosene remains the preferred energy source by majority of the women in the study area. The study indicated that fourty percent (40%) of the respondents used kerosene for cooking and lighting. Charcoal and cooking gas were hardly used by women in the study area. It was observed that only 10% of the respondents used cooking gas, this could be attributed to the high cost of gas. While only 10% of the women opined that they used charcoal. It was observed that majority of the women in the sub-urban areas used fuelwood for cooking and heating than women in the urban areas.

Income status of respondents

The result shows that 58 percent of the women earned between six thousand to eleven thousand naira (N6, 000 – N11, 000) monthly (Table 2). This suggested that income status of the respondents determines the type of household energy respondents used. Respondents that earn low income depend more on fuelwood. The study indicated that respondents with high income depend less on firewood and kerosene. Generally the low income earners were commonly associated with the use of fuelwood and kerosene.

Table 2: Major Occupation and income status of respondents

Types of Occupation	Frequency	Percent (%)
Employed by Government	105	70
Business	15	10
Unemployment	30	20
Total	150	100
Income Status/Annum (₦)		
6,000-11,000	87	58
12,000-17,000	11	07
18,000 and above	52	35
Total	150	100
Total	150	100

Field Survey, 2003.

Environmental implications of household energy in the study area

Seventy (70) percent of the women were aware of the various environmental implications resulting from the use of the various types of household energy sources in the study (Table 3) area. The respondents that were aware of the environmental implications of using the various types of energy source for cooking, heating and lighting were significantly ($P \leq 0.05$) different from those that were unaware. This is so because the calculated χ^2 was 75.520 whereas tabulated χ^2 was 21.516, at 0.05% and df – 4. From the results, there were significance difference between women that were aware of environmental implication of using the various types of household energy source for cooking, heating and lighting and those not aware of the environmental implications using the various types of household energy source for cooking, heating and lighting. Respondents posited that even though, they were aware of the environmental consequences of using the various house hold energy, they do with what was available to them. Due to lack of resources to purchase environment – friendly household energy source, fuelwood and kerosene remain the major household energy available to them.

The respondents opined that deforestation, air and water pollution, climate change, and erosion, among others were the environmental problems resulting from the use of fuelwood, kerosene and cooking gas. Most of the respondents prefer kerosene and cooking gas to fuelwood for cooking and heating.

Table 3: Types of household energy source and knowledge of Environment implications of household energy sources

Energy type	**Frequency**	**Percent (%)**
Fuelwood	30	20
Charcoal	18	10
Kerosene	60	40
Gas	15	10
Electricity	30	20
Total	150	100
Environmental awareness		
Yes		
No	105	70
	45	30
Total	150	100

Field Survey, 2003.

CONCLUSION

The study showed that women use kerosene, fuelwood, electricity, charcoal and gas as major household energy in Cross River State. One major constraint to the use of environmental friendly household energy sources by women in the study area was lack of money. Government should subsidise the prices of fossil fuel (kerosene and cooking gas) and electricity bills to enable woman afford them. This will go a long way in reducing the over-dependence on fuelwood, thereby reducing the pressure on forests for fuelwood. Depending so much on fuelwood as a major source of

household energy in the state can lead to environmental degradation, as a lot of forests are cut down for household energy. Woodlots should be established in the peri-urban areas to supply fuelwood to urban and peri-urban towns with the aim of reducing the rate of environmental degradation in the state.

REFERENCES

Audu, A. O. and Ojo, M. O., 2001. The role of rural women in forestry development: A case study of Area J4 and Odeda LGAs, Ogun State. In (ed) L. Popoola *et al* Forestry and National Development, Proceedings of the 27th Annual Conference of Forestry Association of Nigeria (FAN) held in Abuja, 17th – 21st, Sept, 2001 pp 275 – 283.

Akachuku, A. E., 2001. Wood as source of energy for National Development. In (ed) L. Popoola *et al,* Forestry and National Development, Proceedings of the 27th Annual Conference of Forestry Association of Nigeria (FAN), held in Abuja, 17th –21st, Sept., 2001, pp.202.

Albelaka, E. Frisancho A. and Kecler, G. J., 1999. Asseessment of PM10 Concentrations from domestic Biomass fuel combustion in two rural Bolivian High land villages Environmental Science and Technology, 23: 2505 - 2509.

Food and Agriculture Organization (FAO), 2003. African Forests: A view to 2020. Forestry Outlook study for Africa.

Kura, Y. S. B., 1996. Realities of the other energy crises: A case study of Kano State, Nigeria. In (ed) L. Popoola, Role of women in Forestry and Environmental Development, Proceedings of Annual Workshop of Forestry Vocational Training Center, Dorayi, Kano, 5-7 March, 1996 pp120.

Madon, G., 2000. An assessment of tropical dry land forest management in Africa. What are its lessons. A paper presented at thee World Bank Seminar communication for village power, 2000, Washington D.C., USA pp7.

Nigerian Environmental Action & Team,(NEST), 1991. The challenge of Sustainable Development in Nigeria. In (ed) Nigerian threatened Environment, A National Profile NEST, Ibadan pp. 38 – 39.

Ogar, D. A., 2001. Impact of Forest and non-forest Policies on deforestation in Southeastern Nigeria. Published Ph.D. Thesis, University of Ibadan P. 32 Ojo, M. O. Odidi, S. and Kehinde A. S. (2001). Marketing of some selected

Bushmeat in Ibadan, Oyo State, Nigeria. in (ed) L. Popoola, J. E. Abu and P. I. Oni Forestry and National Development. Proceedings of the 27th Annual conference of Forestry Association of Nigeria (FAN), Abuja, 17th - 21st Sept. 2001.

Omorah, E. O., 2000. Household energy utilisation pattern by the Lehongu People of the Ter Tribe of Benue state, Nigeria. Nigerian Journal of Forestry 30 (1&2): 22-26

Popoola, L., 1992. An assessment of the effect of structural adjustment Programme on forestry consumption in Nigeria. Journal of Tropical Forest Resources, 18:32-36.