

ROLE OF RURAL WOMEN IN HOUSEHOLD ENERGY MANAGEMENT IN TOFA L.G.A OF KANO STATE

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ABSTRACT

This study examines the role of rural women in household energy management in Tofa Local Government Area (L.G.A), Kano State, with emphasis on identification on the specific tasks, and decision-making roles of women in household energy management. Data generated were sourced using questionnaire and interview schedule through P.R.A (Participatory Rural Appraisal), with a total sample of 250 women in four wards of Tofa L.G.A. Based on quantitative and qualitative data collected at the household level, the study demonstrated that the roles of rural women in Tofa L.G.A are culture derived and women are primarily responsible for the use of biomass energy sources and household management in the area and it is used primarily for cooking. Specific tasks involved in by women in biomass energy management include stacking, storing, handling and use. Decision that have to do with the type and how sourced are solely the domain of the men The specific tasks of jn the management of energy identified earlier is likely reduce constraints women's participation in their other roles from productive and reproductive tasks.

Keywords: Household, energy, rural women, decision making and management.

INTRODUCTION

Energy is one of the basic requirement of human societies and a key input to economic and social development (UNDP, 2003). It is vital for human life and technological advancement. In general, energy can contribute to the widening of opportunities and empower people to exercise choices. The demand for energy today is far greater than ever in our highly technological world.

Gender differences in the allocation of resources and sharing of responsibilities have been shown to be significant (Chukuezi, 2009; Cecelski, 2002; FAO, 1987). However policy makers in most developing countries, especially in Nigeria are yet to have a wider understanding of the importance of recognizing gender differences in decision making on rural energy program, that is, they are unable to see that there are differences in gender roles and responsibilities (Iman, 1990). In addition, they believe that domestic energy managers are men and that technology is only for them. Such policy makers fail to realize that project activities (especially on household energy projects) can have different effects on males and females (Herzer, 1992). For instance, most improved cooking stove programs, especially the large scale government initiative have met with limited success. One reason among others has been identified as poor targeting, inappropriate technologies not meeting the real needs of the purported beneficiaries. Where programmes have succeeded it has often been because local women have been involved in the design of the stove, particularly in the dissemination process (UNDP, 2003).

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To this end, assumptions are made regarding household energy interventions program, as it affects rural women. Acceptance of energy saving technologies is taken for granted without carefully analyzing the needs and priority of women (Skutsch, 1995).

Therefore, there is the need for gender disaggregated data on rural energy management that takes recognizance of the role and needs of women (especially in Kano), which is vital for policy reforms aimed at the removal of gender specific constraint. The study therefore investigates the role of rural women in household energy management, and particularly in Tofa Local Government Area of Kano state. It seeks to identify their specific tasks and decision making roles at the family levels.

MAIERIALS AND METHODS

Tofa Local Government Area is located between longitudes $8^{\circ} 10'E$ to $8^{\circ} 30'E$ and latitudes $12^{\circ} 10'N$ to $11^{\circ} 50'N$ in the North central Part of Kano State. It is bordered by Ungogo Local Government Area in the East, Kabo Local Government in the north and Kura Local Government in the south East. (figure1)

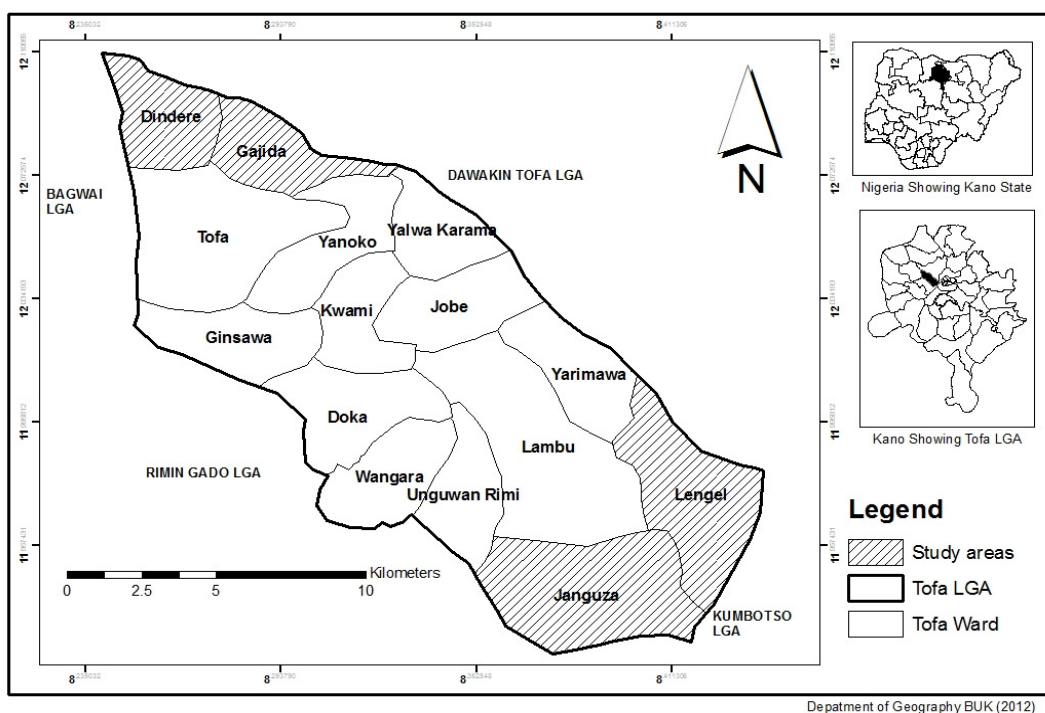


Figure 1.

After studying the map of Tofa L.G.A, a pilot survey of the area was made to get acquainted with the area and understand among other things the physical as well as the cultural setting of the local government. This experience was what informed the selection of the studied sites or wards, design of research methods as well as the planning of the whole work.

Sampling Design

The targeted population for this study is women within the household in Tofa L.G.A of Kano State. But due to time and cost limitation an outright survey of all the women in the whole local government cannot be undertaken, thus the researcher randomly selected two wards to the South-East and two wards to the North-West of the L.G.A, making four wards in all, and 50% of the total villages in each of the wards were sampled. This was done in order to have a

fair representation of each wards sampled. It is expected that these wards will be a fair representation of the Local government area, since these communities are homogenous in terms of physical and cultural factors and there exist little or no stratification in terms of socio-economic, cultural and religion affiliation The sampling frame for this research consists of women within the households in four wards in Tofa Local Government area. They are *Langel, Janguza, Dindere and Galida*.

At the reconnaissance level, the researcher observed that there is no definite arrangement of streets and houses in the sampled areas, rather population is dispersed. It should be noted that the size of the sampled selected from each village was based on the total number of villages in each of the wards.

From the complied exhausted list comprising total number of compound houses in each of the selected villages, one-third (1/3) were systematically sampled. But, since it requires that the sampling list need follow definite pattern of arrangement and consistent numbering, before systematically sampling the compound houses, the researcher on getting to the study sites decided to give numbers to the houses. Also, 1/2 of households were sampled from these compound houses (representing a total of 173 households), it is from these that the women 1/2 were now sampled. The numbers of women sampled in the study are illustrated on table 4.

Table 1. Sample Size

Study wards	No. Of villages sampled	Total compounds houses	Total household sampled	Total Women Sampled
Langel	6	36	55	74
Janguza	3	41	48	70
Dindere	3	37	30	46
Galjida	3	29	40	60
Total	15	143	173	250

Types of Data and Data Collection Instrument

Data was obtained from both primary and secondary sources. The primary data is the first hand information generated on the field by the researcher through interview schedule and field observation.

Interview schedule was used in this study extensively, and it was used for generating data on the following key issues:

- (i) Types of biomass energy used;
- (ii) Household energy process and women's role in it;
- (iii) Decision making process and women's role in it;
- (iv) Factors that influences their decision;
- (v) Constraints experience in the tasks women are involved in;

Focused group Discussion (FDG) were also held with men to cross check some of the information supplied by the women since they are also involved in some of the tasks in household energy processes. Particularly interview discussion was conducted with association of irrigation farmers (Kungiyar masu gonna rani), since they are the ones on the farm at the time this study was conducted. Ten of them were selected from each village.

RESULTS AND DISCUSSION

The results and discussion focuses on identifying the role of rural women in the management of rural energy system, specifically in the sourcing, processing and use of biomass resources. It also examines gender decisions role in sourcing and use of household energy sources, as well as constraints to effective and efficient household energy management

Specific Roles of Women in Household Energy Management

Women's role in the management of biomass resources and other fuel type utilized in the study area has been found to be limited to processing (making of dung cakes), storage and use. These roles are discussed and analyzed below:

Biomass Energy Sourcing

This includes all activities that are involved with the supply and preparation of household biomass energy sources. These tasks as identified by the women in the study area involve collection, purchase and transportation of energy sources from the point of collection to destination of use. However, a good number of the interviewees from the four wards surveyed (86% of the women) agreed that fuel wood and agricultural waste constitutes the main biomass energy sources used in the area, of which cooking and heating constitute the primary end-uses, while only few of the women (55% of the women) uses the combination of fuelwood and other energy sources (such as crop residues, charcoal and kerosene) for cooking (see table 2). This finding corroborate with the submission by Polestico (2002), that rural women energy consumption pattern in most developing countries are characterized by a high dependence on biomass resources, with cooking as the primary end -use.

Table 3. Distribution of Women by wards and Biomass Sources for Cooking

Wards	Biomass source for cooking								Total	
	Fuelwood/crop residue		Fuelwood/crop residue/charcoal		Fuelwood/crop residue/dung		Fuelwood/crop residue/kerosene			
	F	%	F	%	F	%	F	%	F	%
Langel	62	29%	4	36%	5	71%	3	18%	74	30%
Janguza	59	27%	6	55%	0	0%	5	29%	70	28%
Dindere	41	19%	0	0%	0	0%	4	24%	45	18%
Galjida	53	25%	1	9%	2	29%	5	29%	61	24%
Total	215	100%	11	100%	7	100%	17	100%	250	100%

Source: Fieldwork, 2011

One important explanation given by the women for this is the social/ religions factor or seclusion which restricts married them from leaving their homes. The women argued that since most of them are married in Purdah and they are in seclusion (kulle). Therefore they are not expected to go out to the field either to fetch water or source woodfuel, or engage in farm work; only the older women are expected to engage in such activities. The three interviewees who mentioned that they are responsible for energy procurement are all widows who do not have adult male or children that can do the sourcing for them. This findings contradicts the result of the study carried out by Mahat (2003), in Kavre district in Nepal of rural Indian, that more than 50% of the women spend 2 hours each day collecting fuel wood from forest or farms and also the findings by Ikurekong et al. (2009), in Mbo L.G.A of Cross River State which confirms that women and children go into the forest and farms to extract fuel wood.

Table 4. Distribution of Women by Wards and Person Responsible for Procurement of Household Energy Sources.

Wards	Persons responsible for sourcing							
	Men		Women		Men & children		Total	
	F	%	F	%	F	%	F	%
Langel	61	28%	3	75%	10	34%	74	30%
Janguza	57	26%	0	0%	13	45%	70	28%
Dindere	39	18%	0	0%	6	21%	45	18%
Galjida	60	28%	1	25%	0	0%	61	24%
Total	217	100%	4	100%	29	100%	250	100%

Source: Field work, 2011

All of the women in the four wards agreed to the fact that they seldom use dung for cooking because it produces a lot of smoke during combustion, however women and children are usually responsible for collecting them from the cattle pens.

Fuel Wood Processing

Processing activities as identified by the women in interviewed in the four wards surveyed include cutting, chopping and pruning of fuelwood. Chopping activity involves cutting to pieces especially log of woods for fire wood to be used easily for cooking, heating and other uses. Cutting includes bringing down parts of the tree or branches of trees with implement such as axe, while pruning has to do with cutting out leaves and other un-useful parts of the tree. All the interviewees unanimously agreed that they are not involved in any of these activities because of the religious injunction that prohibit married women from going out to the fields and due to the fact that women are generally considered as not strong enough for these tasks (see table5)

Table 5. Distribution of Women by Wards and Gender Involvement in Processing of Wood fuel

Wards	Persons responsible for processing							
	Men		Women		Men and Children		Total	
	F	%	F	%	F	%	F	%
Langel	72	30%	0	0%	2	18%	74	30%
Janguza	63	26%	0	0%	7	64%	70	28%
Dindere	44	18%	0	0%	1	9%	45	18%
Galjida	60	25%	0	0%	1	9%	61	24%
Total	239	100%	0	0%	11	100%	250	100%

Source: Field Survey 2011

Fuel Storage

Storage is an important activity in biomass energy management 232 (92.8%) argued that fuel wood procured by the men are usually drop outside or at the entrance of the house (sakar gida), and only quantity needed at the time they need to cook are either picked up by they them or by their children, while 18 (7.25%) of the interviewee, particularly in Galjida-Tsamiya, argued that they stored theirs inside the house. They explained that they are able to do this because there are enough space in the compound for this purpose and that they

sometimes store crop residues where they keep their livestock so that the animal can feed on them and the remains can easily be used for cooking and other uses. (See table 6) All interviewee in Langel and Janguza wards agreed that they stored biomass resources outside the compound, while 6 (33%) of the total women sampled in Dindere argued that they stored theirs inside the compound house. This however adds to women's workload.

Table 6. Distribution of Women by wards and Place to store Biomass Source

Wards	Place to store biomass sources					
	Outside		Inside		Total	
	F	%	F	%	F	%
Langel	74	32%	0	0%	74	30%
Janguza	70	30%	0	0%	70	28%
Dindere	39	17%	6	33%	45	18%
Galjida	49	21%	12	67%	61	24%
Total	232	100%	18	100%	250	100%

Source: Field, 2011

However, all interviewees in the four wards agreed that wood fuel is stored inside the house during the rainy season. During this period wood are stored in a built up area near the entrance of the house or inside their individual rooms (especially for those who do not have a built up room for this purpose). They further argued that storing (especially for those who store in built up areas) are done by children or sometimes their husbands hired labour to do this task, while those that stored theirs in their individual rooms do this task themselves.

Household Energy Use

A summary of the activities involved in household energy management and women's role in them presented in table 2 shows that women are exclusively responsible for the use of all the household energy sources identified in the study area and are mainly used for cooking and heating. They also unanimously agreed that women are responsible for not only their use, but cleaning the ash and soot. In addition, they maintain the kitchen and vessels used for cooking. They added that Fuel wood dominates the fuel type used for cooking, and sourcing of fuel is just one though an important part of a more complex system.

Cooking operation includes boiling, frying heating and roasting. The common types of food identified by the interviewees were grains and cereals, and meat, which require longer hours to cook. All the interviewee responded that the quantity of fuel used per day depends on the type and quantity of food to be cooked and so they can not quantify the quantity used daily in absolute terms because do not keep records. It was also added that the traditional technology used during combustion (the three stone hearth allows them to use long branches of trees and unsplit woods conveniently This result is similar to the finding of Cline-cole et al (1987) that women in northern Nigeria use the three-hearth stone because it allows them to use tree branches and unsplit woods

Constraints to Rural Energy Management

The roles of rural women in the management of household energy are enormous and can not be under estimated. However, in the course of performing their role as managers rural women are faced with diverse challenges that put constraints on the efficient and effective management of household system.

Table 7.

Constraints	Langel	Janguza	Dindere	Galjida
Fuel scarcity	68	65	41	56
Others/	6	5	5	4
Total	74	70	46	60

Source: Fieldwork, 2011.

Fuel Scarcity

This is the main constraint identified by the women. As population increases, the resultant environmental degradation has severely impact on the traditional biomass-based energy sources and significantly on rural women since the responsibility of managing household energy system rest on them. Ninety-eight percent of the total women

CONCLUSION

The main task of women in biomass energy management in the area is found out to be limited to use and in some cases storage. However rural women's involvement in sourcing and processing of household energy is generally low due to cultural factor. This finding is corroborate the submission made by Clancy (2003) that it is only where social constraints restrict women from leaving their homes that men participate in fuel sourcing. Nevertheless, the involvement of men is strongly felt when decision are required for energy supply. However the actual operational duty is left in the hands of the women. The implication of this is that women's participation in other developmental activities at both family and community level is impaired.

.From the foregoing discussion it can be concluded that women in Tofa Local Government Area participate actively in decision on household energy management The study shows that rural women are primarily responsible for the use of biomass resources and have demonstrated that they are good managers, as they have been able to adopt mechanisms even in the face of impending as well as cultural barriers.

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