

Role of Women in Rural Energy Programmes: Issues, Problems and Opportunities

Soma Dutta

ENERGIA News 4, October 1997

In the rural areas of India and other third world countries, women have traditionally shouldered the responsibility of managing the domestic energy requirements for their families.

As the predominant sources of fuel are derived from biomass resources, women have a very intrinsic and symbiotic relationship with their surrounding natural resource system. However, due to a variety of reasons, they do not find a role for themselves in the management and control of the resources. Even in the government initiated programmes in the rural energy and environment sectors, there are hardly any mechanisms to incorporate a meaningful role for them in project planning and implementation. It is being recognised now that the lacklustre performance of interventions like the biogas and improved cookstoves programmes can be attributed, to a great extent, to this poor level of involvement and lack of 'stake' for the women in these programmes.

This article looks at some of the evidence to support this view based on experiences in India and makes some suggestions on how women's energy needs can be better incorporated into energy planning.

Role of women in energy management at the household level

Though regional variations exist throughout India, generally rural women play a significant role in the domestic energy systems by procuring and processing fuel for their families. Their role in the domestic energy systems can be studied from two angles: (i) specific activities performed by women in household energy management, and (ii) their decision-making roles at the family and societal levels. Understanding both are important for designing effective interventions.

In the cooking energy systems in rural areas, men and women play very distinct and definite roles. In rural areas, though some variations can be observed across agro-climatic regions, the pattern of responsibility sharing is, by and large, the same. The matrix in Table 1 lists out various activities involved in fuel preparation and segregates them on the basis of gender. The majority of tasks in the cooking energy system are carried out by women. For example, the collection of fuelwood is primarily the task of women. It is only when wood is collected for sale, or where social constraints restrict women from leaving their homes, e.g. in the Rajput community of Rajasthan, that men participate.

Table 1: Activity matrix in domestic fuel management

Task/fuel	Fuelwood	Dung-cakes	Crop residue
-----------	----------	------------	--------------

Production	Natural resource	By-product of cattle rearing	By-product of farming activity (M,W)
Procurement	Collection (W,C)	Daily collection (W)	Collection and transportation to home (M,W)
Processing	Chopping (W)	Making dungcakes (W)	Chopping (W)
Use	Cooking food (W)	Cooking food (W)	Cooking food (W)

M: Task typically performed by men W: Task typically performed by women C: Task typically performed by children

Decision-making structures within the cooking energy system, for the purpose of analysis, may be considered to constitute six linked subsystems: kitchen, fuel, device, vessel, and food. Table 2 enumerates the key decisions made with regard to each of these and the influencing parameters and variables. The decision-making structure is highly segregated along gender lines. Typically, decisions of a financial nature are made by the male head of the family, although in some households women may be consulted. For example, the selection of construction materials for the kitchen walls and roof, the number and composition of cattle to be reared, the purchase of kerosene, LPG, or fuelwood, decision to install a biogas plant, or the type of cooking device to be used. However, if the stove is constructed 'free' by the woman, then the decision rests within her domain, as does the management of other resources within the kitchen. In particular, the housewife decides the placement of the cookstove in the kitchen, the fuelwood species to use, where to procure it from, how best to chop and store it, etc.

It should be recognised that in some places a number of decisions are determined exogenously, by scarcity factors outside of the domestic cooking system. For example, the fuel type and the construction material used are determined by the kind of tree species growing in the vicinity and the local availability of raw material.

This delineation of decision-making activities by gender becomes important when innovations are to be introduced into the domestic energy system. Although women are the potential users of improved cook-stoves and other cooking innovations, and are, therefore, in the best position to assess their advantages and disadvantages, it is the men who handle household cash and make decisions on how it is to be spent. Intervention strategies therefore need to be tailored to encourage the participation of both men and women, while being cognisant of their traditional roles and limitations.

Table 2. Decision making process in cooking energy system in rural households

Component/sub-system	Typical decisions made	Parameters and variables affecting the decision making
----------------------	------------------------	--

Kitchen	Location of kitchen (M) Construction material of kitchen (M) Layout of kitchen (W)	Economic status Climate Availability of construction material Secondary use of kitchen
Fuel	Which fuel to use (M/W)	Availability in terms of cost and distance Burning characteristics Taste Convenience
Device	Which device to use (M/W) What size (W) How many (W)	Economic status Task suitability Fuel type Awareness level Cooking cycle Time availability culture, inhibitions, etc.
Vessel	Material (W) Size (W) Shape (W)	Economic status Tradition Food Habits
Food	Type (W) Quantity (W)	Habits
Cook	-	

M : Decision taken by men

W : Decision taken by women

Role of women in government energy intervention programmes

Over the last two decades or so, many efforts have been made by the government of India to ameliorate the problems in the rural energy sector. These efforts have mainly been in the form of national programmes for promoting renewable energy technologies like biogas, improved cookstoves and solar cookers. Evaluation of these programmes show wide variation in functionality rates and long-term acceptability of the technologies. Lack of involvement of women at all stages in the project cycle has been identified as one of the major causes of projects limited sustainability.

Typically, the devices are designed and tested, and programmes are implemented and monitored by men. Women's main role is that of beneficiaries or final users of the innovation. Even in interventions where there have been efforts to seek women's participation, their involvement is usually restricted to being 'data sources' or occasionally women are used to convince other women to use the biogas plants or the improved *chulhas*.

The biogas and improved cook-stove programmes are promoted primarily as fuel-saving options by most implementing agencies, while the convenience angle is not emphasised. As a direct consequence of this, no efforts are made to make the devices more aesthetic and appealing to the user. As it is implemented now, the national Programme on Improved Chulhas (NPIC) does not offer its beneficiaries any options in terms of choice of fuel or device modifications. The programme offers little room for innovativeness at the local level

as a result of which 'standard' models are promoted. These often fail to take into account the cooking practices, preferences, tastes, family size, vessel type, etc. Many of the households look for aesthetically appealing device rather than just an efficient and cheap stove. The obvious result is poor acceptability of the programme and a large number of these devices are lying in disuse all over the country.

The experience of government and other organisations indicates that lack of local involvement and capacity, especially that of women, is one of the biggest constraints in the success of rural energy interventions in India. How can a more formal participation by local communities and women in particular be incorporated into the planning process? Unfortunately the rural population is often not equipped sufficiently to contribute effectively to the planning process. A variety of socio-cultural, economic and access related factors contributing to this situation; lack of access to information, and low levels of awareness, managerial skills, technical expertise. The factors which act as barriers specifically to women are discussed in the next section.

Barriers to women's participation in energy intervention programmes

A number of factors form barriers to the effective participation of women in rural energy dissemination programmes, the most significant of which are economic and social in nature. These are:

- Traditional decision-making roles in the society;
- Level of economic independence;
- Educational constraints leading to lack of access to information, skills and technical expertise, and
- Ideological barriers among extension workers

The traditional decision-making structure within the families causes hindrances in several ways. In the domestic energy interventions, this is reflected in the fact that the men have to be convinced about even the smallest expenditure for the kitchen. Moreover, women do not generally have the opportunity to undertake decision-making roles or responsibilities in the public sphere, such as, being involved in the local *Panchayat* (system of village government in rural India). Thus, often no formal mechanisms exist for publicly voicing or discussing the concerns of women. Consequently, 'women's issues' are often seen as not being as important as 'men's issues', because they are not discussed in public.

The economic impediments to women's participation are also connected with their social status in rural areas. Since the household places all monetary decisions and control in the hands of men, rural women have no direct independent access to cash income to acquire new innovations. Additionally, women are often denied access to institutional credit.

Another barrier to women's participation, also emanating from the social status of women, is that rural women are usually not provided with opportunities for education or training. Women seldom have access to information on new innovations. For example, in many instances, programmes for training masons in the construction of improved *chulhas* were aimed at men, even though women were the users of the device. The information barrier problem often gets compounded because of the ideological biases of extension workers that prevent direct consultation with rural women. As a result of their role as managers of domestic energy systems, women are most familiar with household fuel supply problems as

well as the needs and preferences of their families, and have an in-depth knowledge of the immediate environment and energy systems. As the extension workers interact primarily with men, this source of indigenous knowledge remains untapped. Worse still, technologies and innovations which are actually targeted for women get based on perceptions and preferences of men. It is not surprising then, that women are reluctant to adopt stoves and participate in programmes they have had little input.

Approaches for action

There is a need for genuine participation in all stages of planning and implementation of energy intervention programmes if the above shortcomings are to be overcome. Needs can be most effectively identified and solutions worked on if the concerned groups identify the problems themselves and initiate action around issues that concern them. Participatory research can also help determine features/characteristics valued by rural women, for example in the traditional cooking energy systems.

Needs analysis and assessment of women's priorities

Rural energy programmes are often based on the premise that women's chief concern is fuel saving. Often, benefits such as time saving and other use conveniences are valued more by the users than fuel saving. An understanding of the priorities and preferences of the different stakeholders in the rural energy sector can go a long way in designing appropriate delivery systems for technology innovations. For example, discussions among biogas user families in Gurgaon district of Haryana indicated that while the women regard smokelessness, convenience and fuel saving benefits of biogas plants most important, the men value the manure benefit more highly. In such a scenario, if the technology is to be 'marketed' for large scale adoption, it may be useful to highlight the fertiliser aspect as a selling proposition to men, who are the final decision-makers in the family.

Genuine and meaningful participation can be ensured only through developing and incorporating concrete mechanisms in the planning process. First, the context or the nature of the problem for any intervention in the rural energy sector has to be understood, particularly from the target population's perspective. The target group's knowledge of the actual situation and needs and trade-offs also need to be taken into account. The design and implementation of any intervention should be examined from the point of view of rural households and especially of women at all stages. Which women's activities will the intervention affect and how do the issues of access and control relate to these activities? For example, if the project cycle approach is taken, some of the questions that should be addressed by any implementing agency at different stages include:

Stage 1. Intervention identification

- What are the needs and opportunities in management of biomass resources to bring about a 'beneficial change' for women?
- Do the objectives of the intervention relate directly to the needs and opportunities, as articulated by women?
- Does the intervention take into account the feedback from past experiences in the field?

- What are the possible adverse effects on women?

Stage 2. Programme design

- Is the programme consistent with identified problem areas?
- Is the expected change in activity profile conducive to ‘beneficial change’?
- How will the programme/intervention affect the access and control of resources and benefits?
- Is the intervention consistent with the traditional roles assigned to women? If a change in roles is required, how to attain it?
- What should be the scale of intervention?

Stage 3. Programme implementation

- Do the personnel have necessary ‘skills’ to provide required inputs?
- Does the intervention look ‘beneficial’ to the deciding authority?
- Is the organisational set-up conducive to women's participation?
- Does the programme have adequate provision for local capacity building?
- Are there mechanisms to ensure that benefits go to the targeted beneficiaries?
- Is the funding for intervention (beneficiary/government/NGO/project) sustainable?
- Is there a mechanism to identify/assess effects of intervention on women?

Stage 4. Programme monitoring and evaluation

- What are the indicators that capture the effect of intervention on women?
- Does the project evaluation system explicitly measure the project's effects on women?

Some techniques and methods that can be utilised to aid the process of intervention identification and in rural energy are given in Table 3.

Table 3. Planning tools and techniques

Stage of intervention	Tools and techniques	Expected output
Intervention identification	Priority ranking	<ul style="list-style-type: none"> • Variables that affect decisions in cooking energy systems • Feature valued in traditional cooking systems and desired alterations
	Focus group discussions	Priorities of different groups

	<ul style="list-style-type: none"> • Daily routine diagram • Mobility maps • Seasonality charts • Time budgeting exercises • Observation and recording of the process of fuel collection, preparation and use 	Identification of potential areas for intervention
	Device designing open ended questions to assess the level of technical knowledge, e.g., how are measurements taken, how is the size decided, what hardening techniques are used	Assessment of technical ability of target group
	Discussions with past beneficiaries of technologies	Learning from past government programmes in terms of strengths and weaknesses
Programme design	Field trial of short-listed technologies for a predetermined duration in sample households	Input of users' responses to technology/product development
	Monitor closely to assess: <ul style="list-style-type: none"> • Training requirements • Men's and women's response to the technology • Feedback on devices 	Technical and social feasibility
	Demonstration and visits to technology sites	Instill faith in technology
	Discussions with local institutions	<ul style="list-style-type: none"> • Dialogue between adopters and potential users • Devising short- and long-term management plans for the interventions

Several approaches exist which may facilitate a greater participation of women in rural energy programmes. However, given the socio-cultural milieu and the status of women in rural areas, such mechanisms can be expected to deliver the best only if they are accompanied with an

improved access to productive resources and skill development. There is a strong need to build capacities among women in terms of creating awareness of energy and environment issues, as well as developing technical and managerial expertise to plan and manage programmes effectively.

- Soma Dutta has a background in economics and rural management. For the past six years she has been working in rural energy and gender-related issues, most of which has been with the Tata Energy Research Institute (TERI) in India. Currently she is working freelance and is based in Bombay.