Gender dimensions in household energy

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In much of the literature, it has been argued and proved that women are the primary managers of household energy. Women collect and use firewood resources effectively and efficiently, and process grain with traditional technologies using their own energy. Women as the primary users of household energy, have expertise in local biomass resources, including their properties as fuels and in adopting fuel-saving techniques. Women can differentiate between those woodfuels that burn fast with high heat, those that burn slowly with low heat, and those that smoke (Kelkar, 1995; Cecelski, 1995). In fact, women have become excellent managers of energy resources in order to survive, because they are the ones most affected by energy crises (Batliwala and Reddy, 1996:3).

Gender dimensions become particularly important when energy is a part of the household system. Knowing how men and women participate in the household energy system and how they benefit is important and needs to be analysed.

Gender roles in management of household energy resources

Women are highly involved in managing household energy resources, Table 1 presents the gender roles in firewood management in one of the villages in Kavre district, Nepal.

Table 1 Gender roles in firewood management

	Who cuts down trees? (%)	Who collects firewood? (%)	Who stores it? (%)
Women	35	65	71
Men	44	5	3
Both	21	30	26
Total	**100**	**100**	**100**

Source: Field survey, 2002

As indicated in Table 1, more than 60 per cent of women were involved in collecting and storing firewood. The highest percentages of men were involved in cutting trees, as women were considered not to be strong enough for this task. In some cases, both men and women were involved in cutting, collecting and storing the firewood as well. Especially, in *Tamang* households, men also shared women's work in managing energy resources, unlike with *Brahmin* households.

Figure 1 shows the average time taken by women for collecting a bundle of firewood in one of the villages in the Kavre district of Nepal.

The 48 per cent of respondents (women) who mentioned that it took two hours for them to collect the firewood gathered it from their own fields or community forest. Those who collected firewood either from private or public forest other than their own took longer than those collecting from their own fields or community forest.

Access to biomass resources

It is important to know how women manage the biomass resources, since biomass still occupies a major share in the household energy system. During my field visits, I found that women collect firewood from around their fields to fulfil their minimum fuel requirements. Often women used agricultural residues and fodder sticks for cooking. Since the local community had access to the community forest (community forest is the forest owned and managed by the community and accessed solely by that community), women could collect the fallen dry firewood from this forest regularly. They would collect high quality firewood once or twice a year when the community forest needed to be cleared.

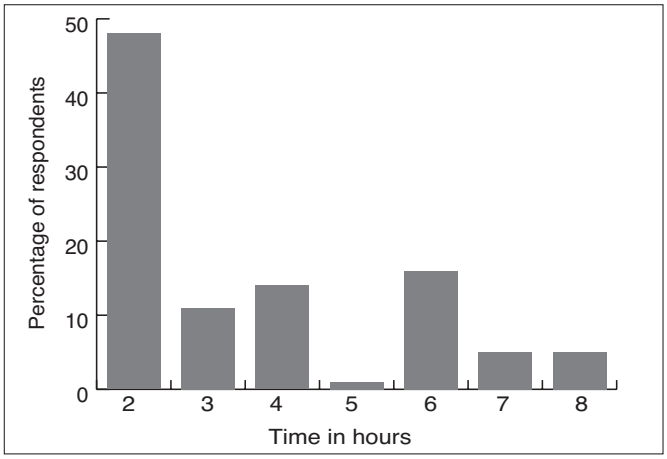

Figure 1 Average time for collecting fuelwood
Source: Field survey, 2002

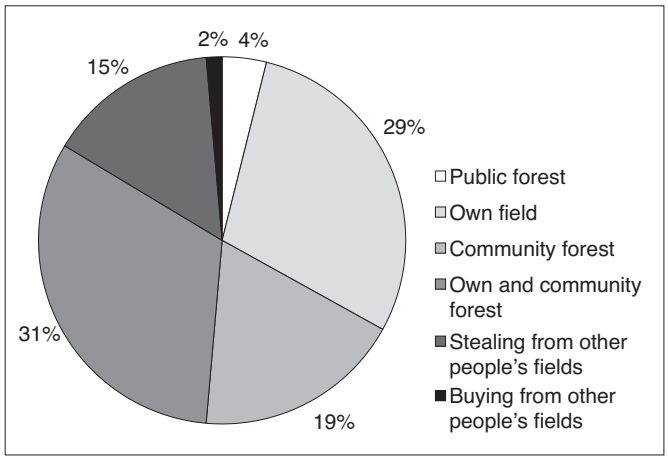

Figure 2 Access to firewood
Source: Field survey, 2002

In areas where there is no access to community forests, women would go to the government-owned public forest – with access to all – or to privately-owned forest far away from the village once or twice a month to collect high quality firewood. Thus, I observed that the deforestation was not directly related to the consumption of firewood at local level. There could have been some other reasons for deforestation like commercial logging or selling the firewood in market place.

Figure 2 shows the different access of firewood to the women in one of the village in Kavre district.

As shown in the diagram, the highest percentage of women have access to firewood in their own fields and forests, and in the community forest. The second highest percentage of women get firewood from their own fields and forest. I found that the fodder grasses collected from around the fields were used to fulfil their firewood requirements as well. The tops of the grasses were used for livestock feeding and the residue sticks were used as firewood for cooking. It was interesting to note that around 16 per cent of the women steal firewood from private forests; this was because they had neither their own forests nor access to public forests. Women were sometimes at risk while stealing firewood from other people's forests. A few women bought firewood from other people's forests.

Gender implications of alternative energy technologies

Have alternative technologies made women's lives easier and better? Answering this question is a tricky one. Both men and women have access to alternative energy technologies (AETs). My fieldwork experience in Nepal has provided me with a greater insight into how women feel about AETs, and their adoption of technology. There is no doubt that women wish to have access to technologies like biogas, improved stoves and micro-hydro electricity. Men and especially women have benefited from technologies such as these in many ways. Table 2 shows a gender analysis matrix (GAM) conducted with a few men and women's groups which summarizes the implications of micro-hydro plants (MHP) for men and women.

Looking at Table 2, it can be observed that MHP has positive implications for everyone, especially for reducing women's labour and time spent in processing activities. It also indicates that women's work has increased both in the morning and at night, through access to electric light. However, some women have found that they have more time for rest and leisure with access to micro-hydro for milling. With micro-hydro, women no longer need to fill up the kerosene lanterns and lights in each room, thus their time and work was reduced. Women have gained access to some income generating and social activities, such as incense making and adult literacy, with the lights available at night.

Similarly, there was a positive change in women's and men's attitude towards women's mobility and participation through the awareness raising implemented by the Rural Energy Development Program (REDP). This also helped in the eradication of a gambling habit of men, with positive implications for women and their culture.

Similarly, MHP has some benefits for men and the overall household. For instance, men felt more comfortable holding social gatherings with electric light. There was some possibility for men to become involved in income-generating activities. In addition, women's saved labour and time could be used for other household activities (such as more time for child care) or involvement in some income-generating and social activities as well. Overall, the analysis indicates more positive implications of MHP for women than for men.

Findings

During the focus group discussions with the users' group for biogas plant and improved cooking stoves (ICS), the women's group reported that the biogas stoves and ICS were very convenient means of cooking.

Women felt that these technologies reduced smoke diseases such as eye irritation and headaches, and reduced the work involved in cleaning and collecting firewood. Biogas stoves were especially easy for cooking light meal and snacks. It was reported that even men would get involved in preparing tea and light snacks with biogas stoves, which was not the case with traditional stoves. However, the biogas stoves were only used as a complementary stove to the traditional stoves and could not fulfil the variety of cooking needs of local women. For instance, they needed to use traditional stoves for cooking big meal during rituals and festivals. In addition, the biogas stoves frequently break down due to inadequate gas production. This caused them more troubles in cooking and sometimes it destroyed the taste of food. The women's group further reported that burning firewood in the traditional way was essential during the winter to warm their houses, and the firewood smoke made them less susceptible to insects.

Similarly, despite the convenience of micro-hydro milling, women sometimes liked to use the traditional way of processing such as *dhiki* (a traditional way of hulling grain) and *janto* (a traditional way of grinding grain), and the water mill for hulling and grinding grain, since grain and flour would be tastier than that from the power or the diesel mill. In addition, women preferred to use *dhiki* and *janto* for hulling and grinding small quantities of grain, which would be more costly to bring to the mill. Hence, the local women were using the traditional and alternative technologies as complementary to each other.

Women felt distanced with AETs since they were not much involved in the planning and management of such technologies. For instance, male members of a family mainly made the decisions on the location and installation of biogas plants, while women often had to operate the plants carrying water and dung, and mixing them together. In addition, women were not aware of the full potential of biogas plants, such as utilizing the biogas slurry for making good compost. In the same way, more men were involved in construction of the ICS, and women were not given a chance to address any technical problems concerning their use. Sometimes women destroyed the stoves because they did not find them convenient. The main

Table 2 Gender analysis matrix: micro-hydro user's group

	Labour	Time	Resources	Culture
Women	*Positive* Reduced workload for processing (rice hulling and grinding grains) Reduced work as no longer needed to light using kerosene in every room *Negative* Increased work with the lighting in the morning and in the evening	*Positive* Saved time for rice hulling and grinding grains Saved time for filling the kerosene and lighting Increased time for rest and leisure	*Positive* Access to income generatingand social activities (incense making,and adult literacy, poultry keeping)	*Positive* Positive change in women's and men's attitude for women's mobility Eradication of gambling and drinking habits of men
Men	*Positive* No change in men's work	*Positive* More time for chatting and gatherings with electric light	*Positive* Possibility for income generation through saw mill and poultry Access to information through radio and television	*Positive* Increased gatherings and entertainment *Negative* Young men hanging around radios and televisions
Household	*Positive* Women's labour saved for other activities	*Positive* Women's time saved for other activities	*Positive* Possibility to increase income Possibility for irrigation *Negative* Decreased opportunities for young labour	*Positive* Positive attitude of men and women

Source: Field survey, 2002

problem they identified was that the smoke bounced back into the kitchen instead of passing out through the chimney. There were no training programmes for women on any repair and maintenance activities, and women had to rely on technicians (men) or other male members of the family for any small repairs.

Conclusion

Women have key roles in managing household energy systems, and are more affected by rural energy alternatives than men. Different alternative energy technologies have provided for men, and especially for women, in terms of saving their labour and time in energy-related activities. However, AETs have not been a substitute for the traditional technologies for a number of reasons. For instance, women still preferred to use those indigenous technologies such as *dhiki* / *janto*, and traditional stoves as an integral part of their livelihood, to fulfil their various energy needs. Adoption of AETs by women was not very positive due to their limited involvement in planning and management of such technologies. There was a shift in control of energy services after having access to technologies, since women were not able to repair AETs.

Figure 3 Focus group discussion with ICS and biogas users' group
Source: Field survey, 2002

References

Batliwala, S., and Reddy, A.K., 1996: Energy for Women & Women for Energy: Engendering Energy and Empowering Women, Brainstorming Meeting of ENERGIA: Women and Energy Network, University of Twente, Enschede, The Netherlands, June 4–5, 1996.

Kelkar, G. (1995) 'Gender Analysis Tools', Wood Energy News, Vol. 10 (2).

Cecelski, W.E. (1995) 'From Rio to Beijing: Engendering the Energy Debate', Energy Policy, Vol. 23, pp.561–575, UK.