

# Is gender a key variable in household energy and indoor air pollution interventions?

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## What makes a successful household energy programme?

Household energy interventions are generally seen as beneficial to women, affecting many aspects of their lives (Klingshirn, 2000; HEDON, 1995). Many such programmes have involved women as staff and entrepreneurs as well as beneficiaries. Despite this, many more household energy programmes have failed than have succeeded in reducing wood fuel consumption and indoor air pollution. Past research has identified success factors, such as focus on likely adopter groups, financial sustainability, interaction between stove designers, producers and users, mass production, minimal subsidies, and meeting consumer needs (Barnes et al 1992). But this research did not consider attention to gender analysis as a factor in success or failure.

## Gender equality

One possible factor could be the degree of *gender equality* in the project area – both equality of treatment under the law and equality of opportunity. One relevant measure of gender equality could be the value of women's labour to the household. Could this be key in predicting the type of household energy intervention that will be successful in a given area?

## Different approaches dependent on status

This idea draws on discussions at the Regional Workshop on Household Energy, Indoor Air Pollution and Health in New Delhi (ESMAP, June 2002). During this workshop, the author presented a model on different approaches to household energy issues, depending on women's status and labour.

Table 1 Alternative household energy approaches based on the status of women

Level of commercialisation of fuel	Labour input into the subsistence economy by women	
	Low	High
Low	Integrate household energy and indoor air pollution components into sectoral programmes targeting women's development (e.g., Ethiopia – GTZ)	Provide information and technical assistance in stoves construction and kitchen design (e.g. Kenya-ITDG)
High	Household energy and indoor air pollution programmes include components to improve women's status/quality of life (employment, education . . . e.g. Nepal REDP, Kenya-Mandaleo, Mali)	Provide access to affordable improved fuels and stoves (Thailand, China)

## Commercialisation versus inter-sectoral programmes

The table suggests, for example, that where both commercialisation of fuel and women's labour input are high, a commercial approach to marketing improved cook stoves may be perfectly appropriate and successful, as witnessed in Thailand and China. Where commercialisation of both fuel and women's labour is low, however, a market approach may not be effective and, indeed, may be catastrophic, because there is no incentive to purchase improved stoves – people will gather fuel 'for free'. Here, household energy/indoor air pollution programmes may be better integrated into inter-sectoral programmes in health, agriculture, etc., that already target women and men separately, as for example in the GTZ-HEP approach in Ethiopia. In intermediate situations, where fuel commercialisation is high but women's status and access to income is low – as for example in the Nepal REDP programme or the Mandaleo stoves programme in Kenya – separate household energy/indoor air

pollution programmes may be justified. To be effective, these might need to include components to improve women's status and quality of life, such as employment and education. Low commercialisation of fuel but high input into the subsistence economy of women's work (even without high access to income) may favour programmes such as the ITDG approach in a Maasai area of Kenya, where providing information and technical assistance in construction (Figure 1) has helped promote smoke hood dissemination. Even here, though, the cost of smoke hood materials has been a problem.

## Factors affecting transition to improved technologies and fuels

### Women's employment

Further light is shed by a comparison of the China and India experiences with dissemination of improved stoves, by Nathans and Kelkar (1997), which asserted that rural commercialisation and women's employment

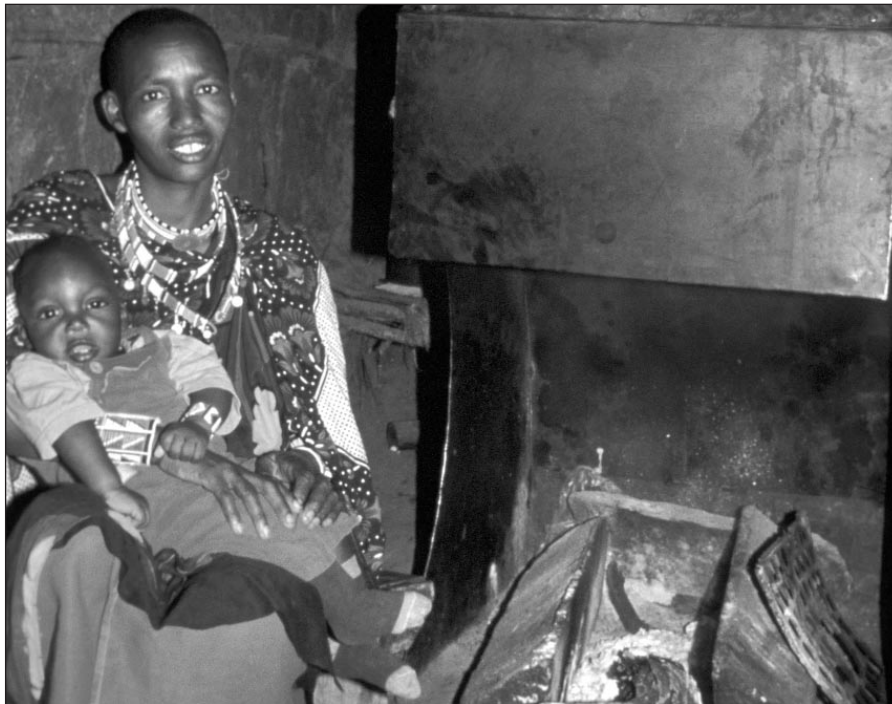


Figure 1 Smoke hood promoted in Kajiado, West Kenya (photo: Nigel Bruce / ITDG)

have been key factors in the differences in improved stove adoption in China and India (Nathan et al). Where fuel is gathered by unpaid labour, there may only be an incentive to use improved stoves if economizing on the labour of fuel collection is attractive, that is, if alternative (paid or unpaid) employment opportunities exist:

*Consequently, a gender disaggregated analysis of household labour time, would lead to the conclusion that it is the availability or otherwise of women's unpaid labour time that is the crucial factor in determining the extent of wood fuel use, or the extent of economizing on wood fuel use. Further, that even if income were to increase without any reduction in the availability of women's unpaid labour, then there is not likely to be a reduction in the use of wood fuel, either through using more fuel-efficient stoves or through moving onto other fuels.*

If women (or girls) had a cash income earning opportunity, then there would be pressure for the household to economise on their time, e.g. through labour-saving innovations or the transfer of tasks to other household mem-

bers. Kelkar and Nathan admit, however, that the analysis would only hold for farm households that collect, rather than buy, their own fuel, (which is the case in many rural areas today).

The authors use this analysis to explain the absence of a transition to modern fuels, and the continued high use of wood fuels, in many rural areas, across all income groups. In Pakistan, for example, women's free labour, rather than income levels, is an explanatory factor for patterns of use of different fuels. Higher incomes in China than in India have been credited with accounting for the difference in success rates in improved stove dissemination. It could be, however, that the low participation in cash income activities by women in farm households in India could be an important factor. Availability of modern fuels is not necessarily an explanation either, since areas with a high level of mechanization of agriculture (Punjab), do not always have a high adoption rate of labour-saving modern fuels. (Ibid.).

#### *Status of child education*

The authors believe this logic would hold good even with respect to the labour of children, for example, if the education of girls is not valued, then again there would be no pressure to

economise on their labour in fuel collection.

### **Technologies other than stoves**

The question of labour as a factor in the adoption of energy technology applies not only to improved stoves, but to other energy technologies as well. Sanogo and Skutsch (2001) make the point, for example, that the cost-effectiveness of improved charcoal kilns is always done on the basis of returns on capital investment. But their case study of two women charcoal makers in Mali shows that it is the impact on *their labour* that may be the basis of decision making by the charcoal makers themselves. The improved kilns require a lot more labour input, even though the output of charcoal is higher for the same amount of wood.

### **Researching gender and energy**

Under DfID KaR research project R8346, ENERGIA is currently collecting examples of linkages between gender and energy project success and failure, not only in improved stoves and indoor air pollution projects, but throughout the energy sector. We look forward to being in touch with any projects or researchers who can provide project reports, studies or anecdotal information with a bearing on gender as a key variable in energy interventions.

### **Reference**

Nathan, Dev and Govind Kelkar, 1997, "Wood Energy: The Role of Women's Unvalued Labour", *Gender, Technology and Development*, Vol. 1 No.2, Sage, India, 1997.

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