

# Energy for Women and Women for Energy: A proposal for women's energy entrepreneurship

Srilatha Batliwala & Amulya K.N. Reddy

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It is well known that women usually bear the burden of providing biomass fuels for daily domestic use. Less well known is the extent to which human energy is an essential element in the household economy. The results of a case study of a typical village in Karnataka, India, can be used to demonstrate this. Our experience with attempts to improve the situation by the use of new energy technologies, leads us to propose a women's energy entrepreneur project to assist women to become energy entrepreneurs, thus "engendering" energy and empowering women.

## Rural energy scarcity and women

Pura Village in Karnataka has been studied intensively by ASTRA over many years and is one of the few villages for which detailed data on gender and energy have been compiled. Table I shows an energy source-activity matrix from 1977 surveys of Pura. These broad features of rural energy consumption patterns have been generally validated in later studies in many other developing countries.

**Table 1: Pura Energy Source-Activity Matrix 1977 (x106 kcals/year)**

	Agriculture	Domestic	Lighting	Industry	Total
Human	7.97	50.78	--	4.97	63.72
(Man)	(2.99)	(22.79)	--	(0.85)	(26.63)
(Woman)	(4.98)	(20.59)	--	(4.12)	(29.69)
(Child)	--	(7.40)	--	--	(7.40)
Bullock	12.40	--	--	--	12.40
Fuelwood	--	789.66	--	33.93	823.59
Kerosene	--	--	17.40	1.40	18.88
Electricity	6.25	--	2.65	0.71	9.61
TOTAL	26.62	840.44	20.05	41.01	928.12

**Total energy = 928 x 106 kcal/year; = 1.079 x 106 Whr/year; =2,955 kWhr/day; = 8.28 kWhr/day/capita**

A ranking of **energy sources** shows that: 1) fuelwood provided by far the greatest amount of energy, 89%; 2) human energy, 7%; 3) kerosene, 2%; 4) bullock energy, 1%, and 5) electricity, 1%. A ranking of **activities** requiring energy shows that by far the greatest need was for domestic activities, 91%, followed by industry, 4%; agriculture, 3%, and lighting, 2%. Human energy is distributed thus: grazing livestock: 37%; cooking 19%; gathering fuelwood 14%; fetching water 10%; agriculture 12% and industry 8%. A large share of human energy is contributed by women and children. Women contributed 42% of the energy used in gathering fuelwood, 80% of that used in fetching water, 15% of that involved in grazing livestock and

44% of that used in agricultural work. Within agriculture, men carry out operations of land preparation (including ploughing and harrowing, and any operation assisted by animal power involving the use of bullocks); women carry out transplanting, weeding and harvesting, and indeed all operations that require bending or sitting postures and that are back-breaking and strenuous.

Women traditionally eat last and least in the family, as a result of the dominant cultural value assigned to male adults and boys; the ratio male-female food distribution can be 2:1. The greater energy output of women is not compensated by greater intake of food; surveys have shown that women are commonly underweight and that they do not gain sufficient weight in pregnancy either, resulting in underweight babies. These basic nutritional deficiencies are compounded by the health hazards inherent in using smoky biomass cooking fuels and by minimal water consumption owing to the time and distances involved in fetching it.

Low levels of energy services are a serious barrier to raising the social status of women. When survival is dependent on human energy and other primitive technologies, a whole range of obstacles to social and gender equality are set in motion. Physical overwork for bare survival traps women in a cycle of poor health and little or no education; illiteracy of women acts as a barrier to new knowledge and ideas which might catalyse women to question the patriarchal order and demand change, or gain economic mobility. And the demand for children's labour (for grazing cattle and gathering firewood) perpetuates the need for large families, which further depletes the health of poor women, and keeps them trapped in the cycle of child bearing and rearing. Current energy consumption patterns aggravate conditions of poverty and perpetuate the low status of women.

Pura Village however has been the site for a number of energy interventions including a community biogas plant which was established in 1987 and a borehole for domestic water supply. The biogas provides electricity for lighting, for pumping water and also gives high quality fertiliser. Women's health has improved noticeably as a result of less energy expended in fetching water and of better quality of water supplied. Light in the house in the evening gives women more time to complete their chores and thus reduces pressure on them. Many in addition, are able to earn a small amount of money in transporting the fertiliser to the fields of farmers who need it. Much is still left to be done: the firewood problem is not yet resolved, but there is a distinct improvement in the quality of life of women as a result of these new technologies.

### **Empowering women through energy entrepreneurship**

The most important point that emerges from the discussion of women in energy consumption patterns is that women have been playing, and are playing, a major role in the management of energy resources, particularly biomass. In fact, in order to survive, women willy-nilly become excellent managers of energy resources. This is because they play an immediate price in terms of labour, if not money, if they are wasteful in energy use. Whether it is water or biomass fuel or livestock wastes, women are traditional gatherers and users. And because they start this resource management training as young girls, they are forced to acquire the expertise.

When energy interventions are implemented, involving new ways of producing and using energy, the experience gained thus far, for instance with rural energy and water supply utilities such as the one in Pura and other villages, shows that women begin to play a key role in the operation of these utilities. They are also the main beneficiaries. As such, they become

as much, if not more, interested than men in the success of the utilities. And wherever women have opportunities, it becomes clear that they are potentially the best managers of energy enterprises, as they are in milk co-operatives.

It is also relevant that vast programmes such as the Grameen Bank have unambiguously testified to the crucial role that women can play in micro-enterprises. It is now clear that these projects are succeeding because they are overwhelmingly based on repayment of small loans and utilisation of these loans to raise the living standards of their families.

The explanation is simple: women “are better investors and planners than men. They think in terms of steps and consensus, borrowing step by step to generate income, investing in the mid- and long term, as well as the short term. When a woman has the capacity to invest, one of her first thoughts involve children, so women are prepared to invest in things men won't consider. The evidence on this is clear and becoming clearer...”

Experience is mounting to confirm that the decisions of women take into account the long-term and the next generation, a natural consequence of their linkage with children. They are prepared to sacrifice immediate gains for long-term benefits, i.e., the discount rate used by women is lower than that of men. It is precisely such a view that leads to sustainability. Hence, women are naturally endowed to be the implementors of sustainable development.

Who will implement energy interventions of the type designed to improve the quality of life for women? Quite apart from the global tendency to diminish the role of government, governments themselves are becoming increasingly reluctant to take on additional burdens. Utilities are too preoccupied with their capital crisis to devote attention to rural activities. It is clear that there is a need for entrepreneurs in general, and women entrepreneurs in particular. The idea is to push to its limits the sequence:

- women as victims of energy consumption patterns
- women as beneficiaries of energy interventions
- women as managers of enterprises
- women as energy entrepreneurs

Women already have a track record of functioning as effective entrepreneurs in visibly successful organisations and networks (like Grameen, SEWA, etc.). The challenge is to transform them and their organisations into *energy* entrepreneurs.

The role of the public sector, including state, multilateral and charitable sources, is to create support systems that promote entrepreneur response. What must be ensured is that entrepreneurs have choices and access to technology and resources.

What is needed therefore -as LaRocco suggests- is “to create a *women's energy entrepreneur project*, which will have as it's objective the training and financing of developing country women to be new energy entrepreneurs...”. The project will help women to learn to establish, own, run and manage energy enterprises. In the process, they will “engender” energy -they will turn energy into an instrument of improving the quality of life and generating income. And they will acquire and increase control over their destinies- they will be empowered. From energy for women, the process will lead to empowerment of women. This is the challenge.

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