



Impact of Energy Poverty on Women by Addressing Gender and Energy Issues

* T. Sri Kumar

Department of Physics, Andhra Loyola College, Vijayawada-520008, A.P. India
*Corresponding Author

M.C. Rao

Department of Physics, Andhra Loyola College, Vijayawada-520008, A.P. India

ABSTRACT

This paper mainly focuses on employment & capacity building. Linking with development schemes such as employment schemes, land development schemes provide special trainings and special fellowships for Women. Capacity building and assistance to manage energy programs widen access to rural electrification, including decentralized programs.

Improved access to cooking fuels and energy-efficient technologies for pumping water and other agricultural activities promote economic opportunities for women. Free up time from usual activities and reallocate their time toward attending to agricultural tasks, improving agricultural productivity, developing microenterprises, increase income and improve family well-being. The Paper concludes by listing some of the major areas in which research is still needed to improve our understanding of the role of energy in poverty alleviation and sustainable livelihoods and the role it can play in meeting women's strategic needs.

KEYWORDS : Gender, Growth, Poverty, Land Abundance and Biomass Firewood Crisis

Introduction

Households in rural India are highly dependent on **firewood** as their main source of energy, partly because, non-bio fuels tend to be expensive. When faced with shortages of **firewood** in the village commons, such households and especially the women in them, have to spend more and more time searching for **firewood** and eventually settle for poorer quality biomass such as twigs, branches and dry leaves. Using data from a random sample of rural households in the Indian state of Andhra Pradesh, we come to very different conclusions, however, 825 million rural population 450 million urban populations and in the country do not have access to modern energy; 296 million populations do not have access to electricity. This fact has been overlooked even in the census distribution systems for LPG and Kerosene are quite good but still bio-fuels used. Women are particularly impacted by energy poverty. Women have to walk on an average 30 kms in a month for collection of fuel wood. Women chief cooks primarily affected by exposure to high levels of indoor air pollution [1]. This burden causes backache, neck ache, headache and bruises every week and most of the women have encounters with wild animals and snakes every quarter. Women groups can form tree growing cooperatives for fuel wood. These groups can identify land and the species of plants. Energy itself an enterprise such as making charcoal, briquette making, gasifies and so on. Access to energy as promotional incentives for running home based small scale energy business units such as food processing, flour mills and so on provide appropriate decentralized energy solutions. Utilization of the opportunities through sustained availability of biomass resources by use of modern biomass technologies village level renewable energy systems: a mix of biogas plants, biomass gasifiers and biofuel-pumps operated and managed by the local communities, especially by the women self-help groups access to electricity and modern energy services employment generation, economic development and improved quality of life. Installation of improved chelas in every house and the biogas plants would lead to saving in fuel wood [2].

Energy: Poverty of Women

Approximately 1.2 billion people almost one fifth of the world's population live without access to electricity needed for day to day activities, such as lighting the home, keeping children and the elderly cool during the summer, charging your phone's battery or meeting the needs of small enterprises. They use candles or kerosene wick lamps for lighting and often go days without the ability to communicate with the outside world as they can't find a place to charge their mobile phones. Worldwide, 2.8 billion people rely on traditional energy sources like burning wood or animal dung on open fires for cooking and boiling water, which leads to health and economic burdens that predominantly fall on women and girls. Women and girls bear the primary responsibility for fetching firewood, cooking and other domestic work, making them disproportionately affected by

energy poverty across developing countries. According to Solar Sister, a women's enterprise working to eradicate energy poverty, up to 780 million women and children are breathing in toxic fumes and risking their health and lives every day because their sole source of lighting is the kerosene lamp. Energy poverty, while affecting everyone, has a female face and addressing this issue in developing countries is essential not only for the environment and sustainable future, but also for gender equality, women's empowerment and the health of women and girls [3].

For girls and women, lack of energy access also affects their safety and health. Without light, women and girls might feel uncomfortable using toilet facilities at night and are at a higher risk of violence if they have to walk through unlit areas to get to their destination. Unreliable energy access has clear implications for health care and health facilities. According to WHO, a woman dies every minute from complications related to pregnancy or child birth and many of those deaths can be attributed to lack of electricity and inadequate lighting. Women and men experience the effects of poverty in different ways and acknowledging the gender dimensions of energy poverty is crucial so that solutions can be designed to meet those differing needs. While access to clean, affordable and reliable energy is essential to all human beings, it is undeniable that the everyday consequences of energy poverty burden women and girls disproportionately. Women and girls cannot be empowered in the dark until this challenge is resolved, women and girls will not be able to live up to their full potential and gender equality will remain an aspiration. Bringing girls and women into the light not only empowers them, but their families and communities as well and that, in turn, translates to a brighter future for all. Gender issues have come to the forefront in many development sectors including agriculture, forestry and water but the energy sector has been slow to acknowledge the links between gender equality, energy and development. Insufficient access to modern energy and existing patterns of energy use, processing and collection affect women and men differently. Because of their socially determined gender roles, women and girls assume a higher proportion of the burden of unavailable energy services and inefficient energy use. Thus, greater attention to the needs and concerns of women in these areas could help governments promote overall development goals like poverty alleviation, employment, health and education through improved energy policies [4].

Energy: Poverty Issue

Energy is not the central cause of either poverty or the marginalization of women. However, it can and should, play a distinct role in resolving these interrelated problems. The simplest and the most telling, manifestation of this potential is the substitution of human labor by an energy using appliance or device which performs the same task at more efficiently and releases valuable time for other activities

that are essential to self development. There are numerous other instances in which a modern energy intervention could bring about profound changes in the lives of poor women. Energy is one of the most essential inputs for sustaining people's livelihoods. At the most basic level, energy provides cooked food, boiled water and warmth. It has long been established that poor people mostly use biomass as their energy carrier and that in many areas. There is an increasing shortage in supply, which adds to the burden of the women whose responsibility it is to collect it. This was christened the other energy crises by the world. However, despite the fact that around two billion people still use biomass fuels and the fact that these are also the two billion poorest people on earth, there has been little attempt to analyze the energy poverty in depth. This can partly be explained by the fact that the biomass in rural areas is collected at zero monetary cost, mainly by women and children and so it falls outside national energy accounts. The invisibility of energy poverty issues leads to decision-makers not being fully aware of their significance and so policies and strategies fail to address the issues fully the use of biomass has a number of repercussions for poor people. The fuel quality is low and when burnt it gives off quantities of smoke and particulates that are recognized as having negative effects on health. The several hours a day spent in collecting fuel means that this time cannot be used for other livelihood activities. Although nearly every household in rural areas will use some biomass as an energy carrier; poor households will spend more time searching than those in higher income groups [5,6]. Wealthier households will also purchase other, higher quality, fuels, which will be used for a greater variety of end users than in poor households.

Energy: Equity Dimension

Poor households use less energy than wealthier ones in absolute terms. Less water is boiled for drinking and other hygiene purposes, increasing the likelihood of water borne diseases. Illness reduces the ability of poor people to improve their livelihoods and increases their vulnerability, not only preventing adults from working effectively but also negatively affecting children's learning. It is frequently said that more lighting for poor families would allow children to study at night, but the extent to which home lighting really improves educational performance and life chances are unknown. Lighting, in theory also provides opportunities for extended working hours and thus improved income generation. Further, street lighting and lighting in community centers can open the way for adult education but whether it does so and whether poor families take advantage of this, are not certain. Wealthier people are able to exercise some choice in their energy carrier and many opt for the cleaner and more efficient modern energy carriers of electricity or gas, including LPG or biogas, although the use of energy carriers is complex. Many better off households use mixtures of modern and traditional fuels, each matched to a specific end purpose, often for reasons not linked to price just as many households in the north will on occasions select a traditional form of energy. Modern energy carriers do not have the negative health and time effects associated with biomass [3].

In situations where they are reliant on biomass fuels, they are able to purchase more fuel efficient stoves. In doing so they may be saving a great deal of money per unit of energy consumed. Unfortunately, poor people are often unable to make such investments, opting for lower first cost options, rather than lower life cycle costs, because of their lack of capita. The consequences for the poor are that precious cash resources are used on low quality fuels, which are then used at low efficiency, reducing their ability to accumulate the financial resources they need to invest in strategies for improving their livelihoods. This vicious cycle of energy poverty needs to be broken. Understanding the decision making process within households when choosing energy services, which would appear at present to work against sustainable livelihoods, is important for designing effective interventions. A first step towards this should be a widespread acknowledgement among the development community that a lack of access to clean and affordable energy can and should, be considered a core dimension of poverty. In this respect, it is therefore welcome that the access to energy is needed to help achieve the millennium development goals [7].

Energy: Livelihood Strategies

Energy availability that creates opportunities increased income/more sustainable use of natural resources. Community level sustainable

management of forests can provide income through organized firewood production and sale. Improved technologies for charcoal production can boost sustainability and incomes. Availability of mechanical and process heat technologies can be a stimulus to the start up of various small scale enterprises sawing, food processes etc. may enable the start up or expansion of small scale service enterprises such as hairdressing, photocopying and internet cafes. Energy scarcity as a constraint lack of transport for moving harvest products to storage and to market may be a disincentive to produce. Lack of electricity may hold back development of services in rural areas. Poor cooking technology results in unnecessary ill health for women and children reducing their productivity. Lack of cheap, easily available, fuel forces women to spend large amounts of time gathering fuel and restricts the boiling of water and in some cases the adequate cooking of food resulting in ill health as well as limiting time available for other enterprises.

In most developing countries, the majority of informal sector enterprises are owned and operated by women, with women making up the largest proportion of the work force. Despite this, the contribution of women entrepreneurs to national economies is not explicit in national statistics, leading to the development of policies that do not deal with the specific barriers faced by women linked to the in gender defined roles. Their enterprises tend to be concentrated in a relatively narrow range of activities: beer brewing, knitting, dressmaking, crocheting, cane work and retail trading. These activities tend to have disproportionately low rates of return compared to the activities undertaken by men. However, despite the low financial returns, women's enterprises provide important sources of household income, even in male headed households. The low rates of return prevent inward investment, hindering innovation and expansion which are regarded as key factors in enterprise sustainability [8]. There is little research to explain what forces drive these start ups and shut downs and how gender influences these processes. Women's access to resources is significantly less than that of men. Generally, research in small and medium scale enterprise sustainability indicates that a lack of working capital is one of the two most common causes of enterprise failure [8]. The role of energy in the sustainability of women's enterprises is also not well understood. In food processing enterprises it has been estimated that energy costs are 20-25% of the total inputs, which would suggest that technological interventions could increase the scale and profitability of these businesses. A general rule that can be learnt from attempts to introduce technology for women is that if it does not reduce the labor in household tasks then, no matter how beneficial the technology, it is likely to have low acceptance. A further lesson is that if women do not control decision making over household purchases and do not have access to credit, then there will be limited take up. There is an enormous need for agents in rural areas who can distribute such equipment on a commercial basis, albeit with some support in the short term. Women who live in rural areas know and understand local circumstances and needs and may have a much clearer idea about the energy services that rural people want. Many women's income generating activities are based around process heat, for which end-use electricity is not a realistic option. Where electricity is available in rural areas, it is mainly used for lighting, which can extend evening working hours with both positive and negative effects. More research needs to be done into what use is actually made of the lighting and electricity. A common fear expressed by development workers is that electricity may add to the burden of a woman's working day. A study into the socioeconomic impacts of rural electrification in India showed that women did stay up later than men, not working but socializing. In addition, if as a result of improved lighting, women themselves choose to work longer hours to increase their own income, this could be seen as an indicator of empowerment rather than as a loss of welfare.

Conclusions

Relationships between energy, poverty and gender are clear. The poor, in general, pay more for energy than the rich, certainly in relative terms but also often in absolute terms. Those living in poverty cannot afford the upfront cash for appliances which increase the efficiency of fuel use, or enable the transition from traditional energy to modern energy. The options for poor people are in fact very limited indeed, a situation which has been called energy poverty. Biomass fuels are likely to remain for some time the primary fuels for process heat and cooking because electricity is in almost all situations more

expensive for such applications. Biomass supply is usually beyond the influence and control of energy sector professionals. The evidence for the contribution energy can make to meeting women's strategic needs is only now beginning to emerge more involvement of women in the energy sector would make a significant difference in meeting the challenge. Involvement needs to be at different levels, not only in terms of the decision making about energy choices in the household, but also as active agents, such as energy entrepreneurs and as managers of forests for sustainable biomass fuel supply. The supply of energy to meet gender needs requires an approach to energy planning that focuses on energy services, that is to say on a comprehensive demand side analysis of all the energy needs of poor people to support all their livelihood functions, taking into account their particular constraints and opportunities.

REFERENCES

- [1] IEA (2009), World Energy Outlook, International Energy Agency, Paris, France. | [2] Mehta, R. & Rojas, M. (2008), Women, food security and agriculture in a global Marketplace, International Center for Research on Women, Washington, DC, USA. | [3] Gail Carlson and Khamarunga Banda.(2009), Biofuels for Sustainable Rural Development | and Empowerment of Women. ENERGIA Secretariat, The Netherlands. 46pp. | [4] Amacher, G. S., Hyde, W. F. and Kanel, K. R. (1996), Household fuelwood demand and | supply in Nepal's Tarai and mid-hills: Choice between cash outlays and labor opportunity, | World Development 24(11): 1725-1736. | [5] Banyopadhyay, S. and Shyamsunder, P. (2006). Fuelwood consumption and participation in | community forestry in India, Environment Department, World Bank. | [6] Emma Saloranta in Gender Equality, Sustainable Development, 2013- | [7] Reddy A K N and B S Reddy (1994), Substitution of Energy Carriers for Cooking in | Bangalore. Energy, 19(5): 561-71. | [8] World Bank (1996), Rural Energy and Development: Improving Energy Supplies to | Two Billion People, Washington DC. ISBN 0-8213-3806-4 |