

Gender Mainstreaming in Renewable Energy Technologies: Policy Needs and Strategies

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Introduction

Renewable Energy Technology (RET) is a means to use natural resources in a sustainable way to produce energy, which is a key input to improve the productivity of human being and to enhance the socio-economic development of the nation. In spite of large-scale expansions in energy service provision, more than two billion people across the world lack access to modern energy services. It is universally accepted that energy services are directly correlated to many elements of the human poverty such as lack of education, poor health, absence of employment and income possibilities.

UNDP/Human Resource Development Report and the World Bank/WDR have identified energy technology as one of the element of world poverty. The WDR report also mentions that modern technology has brought about more disparity between rich and poor and skilled and un-skilled. The technology has improved the productivity, provided more employment for skilled people and reduced the cost of production, which has seriously influenced the global markets demand for product, unskilled labour and wage. It makes market very competitive and also enhances disproportionate effect on developed and under developed, skill and un-skilled and men and women.

Technology has made people's life easier and more competitive in accessing resources and benefit sharing specific to developed countries and urban areas. Whereas the impact from technology has made negative impact on the human life in rural areas due to low efficiency, low access to information, lack of technical skill and less opportunity for employment. The global market competition is very high in terms of price, quality and services with which the rural people are incapacitated to compete without the use of modern energy technology. As a result, the life of the people without energy services is incompetent, cheap and of course poor.

In most of the cases in South Asia, following the patriarchy system, roles are socially defined to men and women. Productive works are assigned to men, also recognised as bread earners. Women's role is more of reproductive and community service. Women's jobs are labour intensive, less productive and almost no monetary value. Hence, the need and priority of men and women are also different.

This paper highlights the reasons for addressing gender aspects in energy sector. It focuses on the necessary components for enabling engendered energy policy environment and also presents a framework for mainstreaming gender into energy policies.

The Gender Dimension of Energy Management

Of the approximately 1.2 billion people living in poverty, it is estimated that 70% are women. In most cultures, women and men have different roles, responsibilities and authority, socially defined division of labour, access to resources and benefit sharing based on gender. This gender asymmetry is reflected in a variety of social and economic

dimensions. In developing countries, men's role is more productive and less in terms of reproductive and community work. They are considered as head of the family, decision-makers and finance controllers. And, women's role is more of caretaker and supporter or secondary person in family having no authority for decision making.

Women perform the duty of giving birth, taking care of babies and other family members - feeding, nurturing, socialising with community and major works of cultivation like irrigate farmland and manage crops. To perform these tasks they spend lots of time in using traditional and manual techniques. Almost 92% of women residing in rural areas are involved as full time and none pay workers in agriculture. Generally, working hours for women and men are 15 and 11 hours per day respectively and even more for women in rural areas in Nepal.

Past research on women, energy and environment has described and advocated, how energy inputs enhance the capacity of women to meet their families' basic needs, through their subsistence and income-earning activities. Women's use of biomass fuels in cooking (a major use of energy in developing countries) is well known and documented. What is not so well recognized is the role of energy in women's small-scale income-earning activities in the informal sector, many of which are energy-intensive. Women's micro-enterprises - an important contributor to household income are often heat-intensive (food processing), labour intensive; and/or light-intensive (home based cottage industries with work in evenings). As a result, lack of adequate energy supplies for these activities affects women's ability to operate these micro-enterprises profitably and safely. The gender variations in household energy management can be studied from four angles: *division of labour, decision-making, access and control and perception of benefits of energy services*.

Energy Scarcity and its Impact on Women

Penetration of commercial fuels in rural areas has limited access. In Nepal, more than 95% of the energy consumed by the domestic sector comes from non-commercial sources (MOPE, 2003). Again commercial energy, mainly kerosene and electricity, is used primarily for lighting or consumptive purpose, constituting about 2 to 10% of total energy consumption.

Energy consumption patterns are characterized by a high dependence on biomass, and a heavy bias towards the household sector, with cooking as the primary energy consuming end use. Fuelwood supplies almost all of the cooking energy requirements. Populations increase and the resultant environmental degradation has severely impacted the traditional biomass-based energy sources. This is especially so in rural areas because the responsibility for nearly every aspect of the domestic energy system rests squarely on the shoulders of the rural women, they are by far the most significantly affected by ever increasing fuel scarcity. The energy scarcity has a disproportionate effect on women and girl child. The most obvious burden is that as fuel resources become increasingly scarce, women must walk longer distances and invest a greater portion of time each day in gathering fuelwood and water.

An increase in time spent in fuelwood collection implies that women may now have less time for other livelihood activities. In the end, women often have little choice but to work more, cut down on the family living standard, and try to squeeze more output and income from degraded lands, which contributes to the vicious cycle of environmental degradation.

A more serious and long term implication of fuel shortage is that as the daily search for fuelwood, fodder and water becomes more difficult, children specially girls are compelled to quit school and forced to help their mothers. More often girls who are held back from school to look after younger siblings and assist their mothers, miss education and perpetuate the cycle of illiteracy and poverty. Besides lost opportunities and adverse inter-generational impacts, women are faced with a variety of health problems caused by fuel scarcities.

Women and girls are victims of biomass use. Women have responded to fuelwood shortages by adopting management strategies to conserve fuel: they shorten cooking times, explore less fuel-intensive cooking and food processing methods, cook fewer meals, serve cold leftovers, change the types of food eaten and purchase other fuels. Women are important managers of natural resources and also producers of biomass fuels. They make rational decisions on which resources to use and how to use them.

More employment opportunities generated by modern energy technology in urban areas has attracted young men of rural areas, therefore the migration rate of young men is on the rise. Whereas women living with socially restricted mobility can't grab that opportunity and confined the household core and agriculture, which are labour intensive and low productivity.

Other Effects of Present Energy Use Pattern

In Nepal about 85.8 percent of total population, of which more than 90 percent are women, live in intensive rural areas where people rely predominantly on biomass energy for cooking and kerosene as well as fatty woods for lighting. The current energy transformation mode within the households in the rural areas is contributing to

- a) serious indoor air pollution with severe health effects specially for women and children
- b) Substantial time allocation for cooking and fuel wood collection (again for women and girls more severely)
- c) Labour intensive work in agriculture and food grain management (again for women and girls more severely)
- d) Degradation of the natural environment through collection of fuel wood and associated deforestation thus making it and the human socio-economic systems linked to it more vulnerable to climatic variations. It makes again more difficult in collection of fuel wood to women and child from far distance.
- e) Increased levels of CO₂ emissions related to the deforestation process of the carbon sink and the inefficient use of biomass
- f) Continuation of vicious poverty circles / traps related to some of the above mentioned factors

In this scenario greater attention on women needs and their priority in designing energy policies to enhance the productivity and economic empowerment, could be the important step to promote overall development goals such as poverty alleviation, employment, health, education and natural resource management through improved energy policies. Addressing gender issues in energy and development is a vital importance. According to the Millennium Development Goals, for two reasons: in order to eradicate poverty, policies and projects must clearly focus on the disadvantaged and marginal groups in the society as in most developing countries, women suffer the most from poverty trap and

environmental degradation. On the converse, because of their traditional responsibilities of household energy management, women are likely to benefit the most from access to improved energy services. The second reason relates to the role of energy services as an input to development: within the energy sector, especially household energy, gender differences and inequalities have serious consequences for needs, use and priorities. These must be recognised and reckoned with, if long run sustainable development goals are to be met.

Improving Women- Quality of Life: Specific Intervention and Benefits

Energy interventions can directly contribute to women's practical, productive and strategic needs. As input, energy can make women's domestic work easier as well as improve productivity in economic activities. The energy technologies should address women's problems and enable to bring about:

- Saving labor and time in cooking and collecting fuel wood
- Reduction labor in water collection by energizing water pumping
- Saving women and children's time and labor in agricultural processing
- Making women's domestic work easier
- Improve health of children and women
- Improvement in the productivity of women's economic activities.

Most of these issues can be resolved with the use of renewable energy technologies however with a distinctive engendering policy approach.

The Energy Policy Approach

It is accepted worldwide that energy is a basic necessary for survival and a key input to economic and social development. In the past, energy policies have focused mainly on urban and industrial development - increasing supplies of electricity and liquid fuels. In general, energy policies tend to be focused on the supply side with little attention to the energy demand characteristics of rural communities and women. Without access to modern forms of energy for lighting, cooking, heating, grinding, pumping, transportation, communications and productive purposes, people are forced to spend much of their time and physical energy on basic subsistence activities. Energy services are one of the options to relief from human poverty.

Two crucial aspects those traditional energy policies have paid inadequate attention are

- (a) The role of energy as an input to overall development, reflected in the integration of energy and development policies and
- (b) The crucial role that women play in energy systems, especially the rural ones.

Gender in Traditional Energy Policies

The primary emphasis of energy policy is still on petroleum fuels, and efforts are focused on increasing the efficiency in the electricity sector through privatisation, and reducing subsidies on fossil fuels, with little attention to the energy demand characteristics of women and rural communities. It may be said that women's energy needs have been left out in energy planning because they do not fit into the traditional energy paradigm. Unfortunately, interventions aimed at addressing women's energy needs, including a forestation programmes (for augmenting fuelwood supplies), improved cook stoves etc, have not achieved the desired impacts. Penetration of commercial fuels has been marginal

in rural areas. At the same time, grid electrification, the largest renewable energy programme, does not help address the major energy need of women, i.e. cooking, irrigation and food grain management. Energy programme implementing agencies find it difficult to involve rural women in energy policies and programmes for following reasons:

- a) Social constraints like lack of women having ownership rights over productive resources, restrictions on their mobility and decision-making, educational barriers, confine to household core and constraints on women's access to information
- b) Institutional and programmatic barriers, including the traditional male-dominated institutional set up in energy institutions and existing gap in knowledge base on gender and energy.

Gender into Energy Policies and Planning

Modern energy services are key component to achieve the overall sustainable development goals, focusing more attention on women and energy linkages, increasing women's contribution to new energy approaches and ensuring that women benefit from these approaches will improve the overall effectiveness of national development objectives and policies. Mainstreaming of gender issues in energy policies is also necessitated by the facts that men and women have different roles, needs and perceptions to energy and that women are often disproportionately affected by energy scarcities. Careful attention on those differing interests are essential for understanding energy markets and consumer needs, for reducing the negative impacts of current energy consumption patterns and for achieving equitable distribution of energy services.

Specific focus on women for energy interventions can make pragmatic sense, also because targeting women and their energy needs has a multiplier effect; it has a direct and immediate impact on the family's well being as once women's drudgery is reduced, they are able to attend the productive activities for their economic betterment, thereby enhancing family's well being. At the same time, improving women's status has long-term inter-generational impacts, through improved education and health of children.

Strategies for Mainstreaming Gender into Energy Policies

Mainstreaming gender essentially means recognizing that men and women have different roles, responsibilities and decision-making authority in energy scenario. Developing policies responding specifically to these needs, incorporating meaningful roles in designing, planning, executing and monitoring energy programmes, and finally, improving energy access to women to improve quality of life by reducing work burden and increasing efficiency in productive works.

Current Strategies

Current efforts on research in gender and energy is focused on:

- Building up a body of evidence and experience (conceptual, methodological, and case studies) linking attention to gender in energy policy and projects to equitable, efficient and sustainable outcomes in energy and development;
- Advocacy in national and international arenas on the importance of bringing gender perspective to policy analysis and design;
- Capacity building and assistance to energy programs, policy and projects in integrating a gender perspective; and

- Creating networks and institutions at the national, regional and international levels to support these efforts at the practical and political level.

Gender mainstreaming advocates for affirmative action at different levels, and require commitment, capacities and resources:

- At the policy level, to ensure that the issue of gender equality becomes a visible and central concern in policy and planning.
- At the programme level, to ensure that all energy interventions create opportunities for women's empowerment and facilitate gender equality.
- At the organizational level, to ensure that space and opportunities for learning, growth and contributing to organizational goals are created equally for women and men at all levels.

Suggested measures for mainstreaming gender into energy policies are as follows:

- Shift in approach from 'technology' focus to 'energy service' provision
- Promoting improved access to a variety of fuels and energy technologies, through investments in market development, taxes and tariff policies
- A more market-oriented approach to the energy sector, which would promote greater understanding of consumer needs, including those of women.
- Directing technological interventions that meet women's practical, productive and strategic needs.
- Promoting women as energy technician, entrepreneurs and end users.
- Enhance Capacity of women to grow as stakeholder at different levels – national policy makers, implementers of energy programmes and NGOs.
- Use of gender tools and methodologies for incorporating gender concerns into planning, implementation and monitoring processes.
- Addressing knowledge gaps in gender and energy through research.
- Providing support mechanisms like credit and other information to improve women's access to energy services
- Legislations and institutional reforms

A Framework for Mainstreaming Gender in the Integrated Cyclical Planning Process for Renewable Energy Development

The framework for integrated energy development projects must address specific issues that must be addressed at different stages of the Project Cycle. Assessment of rural energy needs essentially involves defining the project objectives in terms of men and women, identifying the opportunities and/or constraints for women's project involvement and identifying possible negative impacts on women. Formulation of projects and programmes, includes questions regarding impacts on women's activities, access and control of resources and benefits as well as those relating to organizational structures and responsiveness to women's needs, operations, logistics etc. need to be asked. Finally, data requirements for evaluating the project's effects on women must be addressed. In order to build up a body of evidence, the following areas of the gender-energy-poverty nexus, within a sustainable livelihood framework, need attention:

- Assessment of Renewable Energy Needs specific to women and men for consumptive and commercial purpose
- Assessment of Renewable Energy Supply Resources

- Evaluation of Renewable Energy Technologies
- Assessment of the benefits from Renewable Energy Technology - to whom men and women, caste, class and ethnicity
- Formulation of Programs and Project
- Participatory monitoring, assessment and Evaluation
- Address Knowledge Gaps in Gender and Energy
- Provision of support mechanisms, credit facilities, information availability
- Legislations and institutional reforms

The possible indicators while addressing gender, energy and poverty could be:

- Increased acceptance of women as community decision-makers by both men and women
- Enhance women's access to and control of resources
- Decrease workload and time spend of women for household work.
- Increased women's involvement in personal, family or community development
- New, more visible, and more effective women's organizations
- Support for women to enter non-traditional spaces and gain legitimacy in new roles
- Improved health of women and children
- More women in education and training programs
- More women involvement in economic or productive activities
- More women- skilled human resources in energy services
- Gender equality in all ranges of energy service institutions

Conclusions

While energy is a critical input to development, it is clear that access to modern forms of energy is not a sufficient condition for development. Many 'complementary inputs' are required, which facilitate the "end-use" technology to convert energy into useful outputs. Women have to be trained to make best use of available energy options, they must have access to credit and information and their capacities must be built to operate and manage energy systems. A more basic requirement, however, is to provide or create enabling conditions for women to meaningful participate in energy policies and programmes at various levels. In terms of policy implications, what this means is that gender mainstreaming in energy policies can occur only when all the other prerequisites are also in place.

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