

Mainstreaming Gender in Energy Planning and Policies

UNESCAP Project

On

**Capacity Building on Integration of Energy and Rural
Development Planning**

Background Paper For Expert Group Meeting

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Executive Summary

Why Gender in Energy

Energy is a basic necessity for survival and a key input to economic and social development. In spite of large-scale expansions in energy service provision, more than two billion people across the world lack access to modern energy services. Lack of energy services is correlated with many of the elements of poverty, such as low education levels, inadequate health care, and limited employment possibilities.

Gender issues have a key role in energy policies primarily because gender differences and inequalities have consequences for energy needs, use and priorities. In most cultures, women and men have differing roles and responsibilities, with women carrying out subsistence activities, including gathering and managing fuel and water. Women and men also have different degrees of access and control, especially with regard to biomass resources. In spite of the fact that they are closely involved with obtaining resources from the surroundings, women rarely have control over them. As a result, limited access to energy resources is a problem that has a disproportionately greater effect on women, especially in rural areas.

Gender in Traditional Energy Policies

In most countries, the primary emphasis of energy policy is still on petroleum fuels, and efforts are focused on increasing the efficiency in the electricity sector through privatization, 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 of energy planning because they do not fit into the traditional energy paradigm. Unfortunately, in most developing countries, interventions aimed at addressing women's energy needs, including afforestation programmes (for augmenting fuelwood supplies), improved cookstoves 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 rural energy programme, does not help address the major energy need of women, i.e. cooking. Energy implementing agencies find it difficult to involve rural women in energy policies and programmes because of a variety of reasons, including social constraints like lack of women having ownership rights over productive resources, restrictions on their decision-making, educational barriers and constraints on women's access to information. There are also institutional and programmatic barriers, including the traditional male-dominated institutional set up in energy institutions, and existing gaps in knowledge base on gender and energy.

Strategies for Mainstreaming Gender into Energy Policies

Mainstreaming gender essentially means recognizing that men and women have different roles, responsibilities and decision making powers in energy scenario, developing policies responding specifically to these needs, incorporating meaningful roles in planning, designing and executing energy programmes, and finally, improving energy access to women to improve quality of life and increase efficiency and reduce work burden in productive tasks.

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 entrepreneurs.
- Capacity building and networking.
- Use of gender tools and methodologies for incorporating gender concerns into planning processes.
- Addressing knowledge gaps in gender and energy, through research.
- Providing support mechanisms like credit and information to improve women’s access to energy services

1. Background

It is accepted worldwide that energy is a basic necessity 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, pumping, transportation, communications and productive purposes, people are forced to spend much of their time and physical energy on basic subsistence activities. Lack of energy services is correlated with many of the elements of poverty, such as low education levels, inadequate health care, and limited employment possibilities.

Two crucial aspects that traditional energy policies have paid inadequate attention to, are (a) the role of energy as an input to 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.

1.1 The UNESCAP Initiative

The UNESCAP project “Capacity building on integration of energy and rural development planning” aims to promote rural energy development through capacity building on integration of energy and rural development issues, stakeholder involvement and facilitation of information exchange among stakeholders. The project is developed to enhance national capacities in identifying linkages between energy and rural development to promote long-term, integrated and well-coordinated rural energy planning.

As an inception activity, an Expert Group Meeting (EGM) on the Integration of Energy and Rural Development Policies and Programmes is being held which is aimed at identifying and discussing salient issues pertaining to rural energy development. The EGM is expected to provide a platform to encourage the sharing of country experiences on the integration of energy issues into rural development policies and programmes, including the promotion of the use of locally available energy resources. Proceedings and recommendations from the EGM will be utilized as inputs to the development of Guidelines on the Integration of Energy and Rural Development Policies and Programmes. The Guidelines will later in the project be used for national and regional training and as a reference material for national strategies to strengthen linkages between energy and rural development policies and programmes.

1.2 Mainstreaming Gender in Energy Planning and Policies

An important expected outcome of this debate is recognition of the gender bias of rural energy poverty and ensuring that gender issues are reflected in energy policies. In line with the above thinking, the objective of this paper is to synthesize and present background information on gender issues in energy planning and management for rural development. The focus of the paper is on identification of the constraints and opportunities for capacity development in order to reduce gender bias in planning and implementing energy policies and programmes for rural development. Specifically it covers the following:

- Key points in gender-sensitive issues as a cross-cutting theme in energy and rural development,
- The place of gender issues in energy planning and programming,
- Lessons learnt from initiatives related to energy and women,
- Methodologies for integration gender and energy perspectives into rural development planning and programming efforts, and
- Identification of key components of capacity building so that gender issues are reflected appropriately in energy programmes and policies.

2. Why Gender in Energy

2.1 Introduction

Energy is central to all concerns about sustainable development and economic growth, including livelihoods, water, education, agriculture, health and employment. Access to quality energy services is an essential pre-requisite for increasing productivity, improving people's livelihoods, and hence for poverty reduction. In spite of large-scale expansions in energy service provision, more than two billion people across the world use traditional solid fuels for cooking and heating, and almost as many lack electricity.

The Millennium Development Goals, which were adopted by the UN General Assembly in 2000, established a set of time bound and measurable goals for combating poverty, hunger, disease, illiteracy, environmental degradation and discrimination against women. Even though energy is not mentioned as a separate goal, addressing the energy and poverty linkage is going to be a critical factor in the attainment of the Millennium Development Goals.

Limited access to energy is a problem that has a disproportionate effect on women, especially in rural areas. Greater attention to the needs and concerns of women in energy policies could help governments promote overall development goals like poverty alleviation, employment, health, and education through improved energy policies. Addressing gender issues in energy and development is of vital importance in the Millennium Development Goals for two reasons: In order to eradicate poverty, policies and projects must clearly focus on the disadvantaged groups in society and in most developing countries, women suffer the most from poverty 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 and these must be recognized and reckoned with, if long run sustainable development goals are to be met.

The Millennium Development Goals

- Eradicate extreme poverty and hunger
- Achieve universal primary education
- Promote gender equality and empower women
- Reduce child mortality
- Improve maternal health
- Combat HIV/AIDS, malaria and other diseases
- Ensure environmental sustainability
- Develop a global partnership for development

2.2 The Gender Dimension of Rural Energy Management

Of the approximately 1.3 billion people living in poverty, it is estimated that 70% are women (Clancy and Skutsch 2003). In most cultures, women and men have differing roles and responsibilities according to socially defined division of labour based on gender. This gender asymmetry is reflected in a variety of social and economic dimensions. In terms of reproductive activities, women generally have primary responsibility for the care and feeding of children and families, as well as health care and education. In many developing countries, it is the women who perform most of the work related to subsistence agriculture, plus gathering and managing fuel and water.

Past research on women, energy and environment has described and analyzed how energy is a critical input to women's capacity 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), labor 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 following table summarizes the typical tasks that women are required to perform in management of domestic energy.

Table 1. Rural Women's Role in Domestic Energy Management

Area of activity	Fuel/energy type used	Women's role
Cooking	Rural areas: Biomass based (wood, dung cakes, agricultural residues) Urban areas: purchased fuelwood and other inferior biomass, kerosene, LPG in a few cases	Collection, processing, use of biomass fuels
Fetching water	Human energy in collection (traditionally collected from rivers/streams/ community wells and hand-pumps)	Filling from source, transportation, storage and management
Fodder management	Human energy in collection from village commons, farmlands and roadsides	Cutting, processing, transporting and storage
Agriculture	Mechanical energy (typically employed by men)	Unskilled high drudgery activities like pre-sowing land preparation and manuring, transplanting, weeding, post harvest work
Home based micro enterprises	Heat energy (food processing), human energy	A significant proportion of micro enterprises managed and run by women

The gender variations in rural household energy management can be studied from four angles: division of labour, decision-making, access and control and perception of benefits of energy services.

Division of labour. Though some regional variations may exist, the division of tasks amongst men and women in household energy management are, by and large, similar in most developing countries. Women have always shouldered the responsibility of managing the household energy needs, playing a key role as the collectors, processors and users of biomass fuels. In rural areas of India, wide differences are known to exist in the work burden of men and women. While women are engaged for six hours daily in collection of fuel wood and fodder, and cooking, men spend approximately ten times less time on these tasks (World Bank 2000).

Table 2 presents the activity matrix in domestic fuel management in rural households and segregates the activities on the basis of gender.

Table 2. Activity Matrix in Domestic Fuel Management in Rural India

Task	Production	Procurement	Processing
Fuelwood	Natural resource	Collection (W, C)	Chopping (W)
Dung cakes	By-product of cattle rearing	Daily collection (W)	Making dung-cakes (W)
Crop residue	By-product of farming activity (M, W)	Collection and transportation (M, W)	Chopping (W)

M: task typically performed by men; W: task typically performed by women; C: task typically performed by children.

Source: Dutta 1997

Women, for centuries, have managed forests and used forest products for fuel, food and fodder. As a result of their symbiotic relationship with the local natural resources in the course of their daily survival tasks, most have developed valuable knowledge about local natural resources. In rural areas, women also comprise a large share of the labour force in forest industries - nurseries, plantation establishment, logging and wood processing - and depend on these activities for their livelihoods. The management and conservation of these depletable forest resources has critical importance to women. Hence, it would not be incorrect to say that women are the chief repositories of knowledge concerning the use and management of trees and other forest products. Their knowledge of ecosystem management systems can provide significant contributions to energy planning processes.

Decision making in domestic energy management. The decision-making structure in rural households is normally segregated along gender lines. In households where there are adult men and women, the gendered division of labour generally allocates to women the responsibility for household energy provision related to their spheres of influence in the household, in particular activities centred on the kitchen. However, when energy has to be purchased, men enter the decision-making process. If the cookstove is purchased, for example, the men take this decision. In the case of a traditional mud stove however, constructed in the home by the women themselves, decisions like where to get the raw material from (obtained free of cost), where to place the stove, etc. are all taken by the women. In South Africa, it was found that expenditure on batteries was largely for young men to listen to taped music; in many cases, female members of the household had no access to the equipment and no control over battery purchase (quoted in Clancy and Skutsch 2003).

Access to and control of energy resources. Women and men have different degrees of access and control, especially with respect to biomass resources. In spite of the fact that women are closely involved with obtaining resources from the surroundings, they rarely have control over them (UNDP 2000). They can harvest, but not sell. They tend crops, but often are excluded from decisions about which crops to grow. This lack of control is one of the conditions that make women especially vulnerable to environmental degradation as well as to adverse impacts of biomass related projects.

Perception of benefits from energy services. Women and men have different perceptions about the benefits of energy, for example, men see the benefits of electricity in terms of leisure, quality of life, and education for their children, while women see electricity as providing the means for reducing their workload, improving health, and reducing expenditure (quoted in Clancy and Skutsch 2003). The evaluation of a rural electrification project in Tamil Nadu showed that men benefited more than women since the electricity was used to run irrigation pumps substituting for oxen-drawn water and the care of the oxen was traditionally a task for men. They gained more free time when the number of draft animals decreased, which they used for involvement in politics and improving their agricultural methods, thereby increasing their social and human capital. However, electricity did not substitute for any of women's tasks. Sometimes, access to modern forms of energy can have unforeseen positive social benefits. For example, once electricity is introduced, women have been found to benefit in terms of their self-esteem from access to television. In Nepal, it is reported that women's empowerment was enhanced when they could see pictures showing that they "don't have to remain as second class citizens".

2.3 Energy Scarcity and its Impacts on Women

Data shows that the penetration of commercial fuels in rural areas has been limited. For South East Asia as a whole, more than 95% of the energy consumed by the domestic sector comes from non-commercial sources (Polestico 2002). Commercial energy, mainly kerosene and electricity, is used primarily for lighting, constituting about 2 to 10% of total rural consumption (WEC and FAO 1999).

In most developing countries, 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. In West Sumatra, Indonesia, fuelwood supplies almost all of the cooking energy requirements (Polestico 2002). Similarly, in the Philippines, cooking and water heating account for 90% of household energy use, and fuelwood provides 75% of the total energy used in rural areas and more than 25% in urban areas. Population increase and the resultant environmental degradation has severely impacted the traditional biomass-based energy sources, especially in rural areas and 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. Energy scarcity is a problem that has a disproportionate effect on women and girls. 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.

In the Himalayan foothills of Nepal, a journey to gather firewood and fodder which took an hour or two a generation ago, it takes a whole day now (Agarwal 1986).

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 are taken off school and put to help their mothers. More often than not, it is the girls who are held back from school to look after younger siblings and assist their mothers, missing out on education and perpetuating the cycle of illiteracy and poverty. In the southern state of Tamil Nadu in

India, a major reason for keeping girls of ages 10 to 12 is to help the mothers in collecting cowdung (Mencher 1989).

Besides lost opportunities and adverse inter-generational impacts, women are faced with a variety of health problems caused by fuel scarcities.

- Carrying heavy loads of wood damages women's bodies. They must also worry about falls and threats of assault, as well as snake bites, while gathering wood. In many rural areas, there is no alternative to walking. There is little in the way of transportation infrastructure, and women rarely have access to vehicles to carry their loads.
- Women experience other health hazards from cooking for long hours over poorly ventilated indoor fires. When higher quality fuels such as fuelwood become inaccessible women are forced to switch to inferior fuels, such as dung cakes and twigs, grasses, and leaves, which burn much less cleanly than fuelwood.
- Women, and their young children, are exposed to large amounts of smoke and incompletely burned particulates from indoor fires, together with pollutants such as carbon monoxide, benzene and formaldehyde. As a result they often suffer from respiratory infections, lung diseases, cancer and eye problems.
- In order to cope with reduced fuel availability, women are known switch to inferior fuels like animal dung, the roots of trees, twigs, shrubs, grasses and weeds. These fuels take longer to collect due to the greater quantity needed for daily cooking because of their lower calorific value, do not provide continuous heat. They also increase cooking time, which results in increased exposure to smoke.

Worldwide, close to two million premature deaths per year are attributable to indoor air pollution from cooking fires.
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It would be incorrect to view women as passive 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 about which resources to use and how to use them. A great deal can be learnt from such coping strategies, some of which are summarized in Table 3.

Table 3. Coping Strategies to Deal with Energy Poverty

Energy use	Constraints	Traditional coping mechanisms	Implications
Cooking fuel	Fuelwood becoming scarce Reduced availability of crop wastes as fuel and fodder, with change in cropping pattern	Increased time and effort spent in fuelwood collection Change in cooking practices and food habits	Less time available for other household activities Children, especially girls enlisted to assist in fuel collection Adverse impact on family health
Fetching water	Environmental degradation leading to depletion of water sources like springs and wells	Increased time and energy spent in water collection	Conflicts and social disharmony, adverse health impacts of using poor quality water Complete neglect of women's knowledge relating to water quality and needs in policies
Fodder management	Decreased availability of fodder because of loss of common lands	Increased time and energy spent in fodder collection	Less time available for other household activities
Home bound micro enterprise	Biomass based fuel becoming scarce	Increased time and effort spent in fuel collection Switch to inferior fuels	Increased indoor air pollution impacting family health

3. Gender and Energy: The Thinking so Far

3.1 Gender and Energy Policy Debate: Historical Overview

Gender paradigms have undergone considerable change since the 1970s, when "women in development" (WID) sought to integrate women into existing development programmes by increasing women's access to credit, land and employment using both. Research and information collected throughout the UN Decade for Women (1975-85) highlighted the existing poverty and disadvantage of women and their invisibility in the development process. Different policy responses and interventions focused on women as a separate group resulting in women's concerns being "added on" and peripheral to mainstream development efforts.

The 70s also witnessed the christening of the now-popular concept of 'the other energy crisis' by the World Resources Institute, which basically relates to the fact 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 who are responsible for its collection (Eckholm 1975). For perhaps the first time, it was acknowledged that the burden of environmental degradation often falls disproportionately on women, because of their responsibilities for subsistence such as wood and water collecting. The debate on women and energy was mainly focused around issues related to women's time spent and the drudgery suffered in gathering fuelwood for household cooking, rural household economics and time budget/labour. Emphasis was also placed on the negative health impacts on women and children emanating from fuelwood collection and its use (Smith 1987).

The limited success of WID led by the late 1980s to "gender and development" (GAD), looking at both women's and men's roles within the family and community. Rather than focusing on women in isolation, GAD argued that it is important to understand the distinct culturally and socially defined roles and tasks that women and men assume both within the family and household system and in the community. In energy research, the emergence of the 'energy ladder' theory highlighted the importance of income as a determinant of fuel choice. The discussions however did not clearly acknowledge the link between energy service as a critical input for income generation leading to economic development and gender equity. Eventually, in the 1990s, "eco-feminism" asserted that women were naturally more caring about the environment, and introduced a new political advocacy element allied with environmental activism.

Two important events that brought 'mainstreaming of gender issues' to fore of the energy debate were the 1992 Rio Summit and 1995 Beijing conference. The 1992 UN Conference on Environment and Development (UNCED) drew attention to the linkage between environment and economic development. It also led to international recognition of the fact that extension of the benefits of development to all people, men and women, is fundamental to fulfilment of the social equity objectives of sustainable development. In 1995, the Fourth World Conference on Women, held in Beijing, emphasised the need to promote greater overall development opportunities for women. With regard to energy, the Beijing Platform for Action called on governments to support the development of equal access for women to sustainable and affordable energy technologies, including renewable energy efficiency technologies, through participatory needs assessment, energy planning and policy formulation at local and national levels. The term "gender mainstreaming" came into widespread use with the adoption of the Beijing Platform for Action in 1995. In 2000, the Millennium Development Goals included a specific goal on gender

equality and women's empowerment. In 2002, the World Summit on Sustainable Development (WSSD) further reinforced this and called upon nations to eliminate all discrimination against women.

Current efforts on research in gender and energy focus 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 a 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.

3.2 Responses to the 'Other Energy Crisis'

Since the 'other energy crisis' was identified, the gender and energy problem largely revolved around the rural domestic sector and fuelwood shortages and responses thereof. To address the woodfuel crisis, and the consequent problems for women, the logical solutions revolved around increasing the biomass supply and improving the efficiency of biomass conversion devices, and thereby saving biomass. Specific solutions included tree planting and production and dissemination of efficient biomass stoves. Women were regarded as a special target group, to which donors and NGOs directed aid in various ways.

3.2.1 Afforestation Programmes and Fuelwood Supply

Micro-level studies have indicated that social forestry projects have done little to improve fuelwood supplies for the rural poor (Saxena undated). Past efforts to relieve the firewood shortage by encouraging farmers to grow trees have not been very successful, largely because the costs of this far exceed the short-term costs of gathering fuel from existing forests and wastelands. Well meaning measures to protect the environment by forcible closure of natural forests, for example in India, have had negative consequences for rural households (Clancy and Skutsch 2003). The traditional fuel supplies have been cut-off, and households shift to the lower quality fuels (in terms of calorific value and pollution relative to wood) of agricultural residues and dung, which has negative consequences for health and for soil fertility and erosion. It has been observed that wood produced in community forestry projects is rarely utilized by the rural people for fuelwood. In many cases, the harvested wood went towards satisfying urban demand for fuel. In India, the species composition of social forestry plantation shows that exotic species of *Eucalyptus hybrid* and *Acacia auriculiformis* together formed 80% of the mixed plantations at national level, which are of little use, as far as fuelwood is concerned (Ravindranath and Hall 1995). When common lands are appropriated for community forestry projects, it can have devastating implications for women's livelihoods, as women depend on common lands not just for fuelwood, but also for fodder, construction materials, medicinal plants, resins etc.

3.2.2 Experiences of Improved Cookstoves (IC) Programmes

Most IC programs, especially the large-scale government initiatives, met with limited success, the reasons identified included poor targeting (i.e. women were excluded), inappropriate technologies not meeting the real needs of the purported beneficiaries, i.e. women, and men not meeting their responsibilities. Stoves programs have assumed that

women will easily accept a new type of stove that use less firewood because it will save time in collecting it. However, women have varied criteria for assessing utility of stoves of which fuel economy may be only one. The women's choice to continue using a traditional biomass stove in a fuel scarce region may be quite rational if the design of alternative products is not user-friendly and if repair service is not available in case they need some assistance. Furthermore, the scale of operation and the dissemination rates of stove programmes are very low. The Indian stove programme, the largest renewable energy programme of the country, has so far managed to cover only nine percent of the total rural households (TERI 1996)

Fuel saving is one of the many criteria women use to assess cookstoves
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Where programmes have succeeded, this has often been because local women have been involved in the design of the stoves, and particularly in the dissemination process. In one example, local women were trained as stove masons to market these services. What can be learnt from this is that trying to convince women that improved, more fuel efficient, stoves are in their interest is doomed to failure unless the factors which women themselves consider important are taken into account. Similarly, the economic value attached to women's time saved (from fuelwood collection) could be an important criterion for stove adoption. Both India and China had large state-funded programmes, of which the Chinese one has been much more successful, apparently because so many Chinese women, even in rural areas, are directly engaged in the cash economy and so the time they save in firewood gathering has a very clear economic value. This general lesson may certainly be extended to other energy technologies.

Besides improved cookstoves, development of alternative fuels like green charcoal, and adoption of solar cookers, have been some of the other initiatives undertaken by NGOs as well as governmental programmes, none of these however have been very successful.

3.3 Rural Electrification and Women

Rural electrification by extension of the grid continues to be the largest energy programme in most countries. There seems to be an implicit assumption in national energy policies that the benefits of electricity are gender neutral. This is actually not true and women use energy and electricity quite differently from men. Cecelski calls for rural electrification on the basis that it would meet women's needs for labour-saving, time-saving, improved health, security and income. The EnPoGen Study in Indonesia (Madon and Gardener 2002) launched by the ASTAE (Asia Alternative Energy Programme) to assess the impacts of rural electrification on poverty and gender equity, showed that the benefits that are highly appreciated by women include the fact that they no longer have to constantly accompany small children at night because with lighting, they can get around without continuously bumping into things and the freedom from fear of fire from kerosene lamps. The same study in Sri Lanka (Masse and Samaranayake 2002) revealed that the major benefit to the women is the time they save, through avoided journeys (taking batteries to be charged, going to the city to buy kerosene etc.). Further, decision on how and where electricity and electricity services are provided to households and communities influence women's ability to take advantage of these services.

In some cases, electrification, especially through renewables, has brought about significant improvements for women. In the case of Grameen Shakti SPV systems, consumers view extension of working hours as a major benefit, as this has spurred off a variety of small enterprises like manufacturing (saw mill, carpenter), services (TV/radio repair shop,

barbershop), or home industry like basket making, net weaving and tailoring (Cecelski 2000a). Other benefits of improved lighting in small enterprises are better efficiency and quality of work, better working environment, and a more attractive and secure environment for customers. Post-harvest food processing is one of the most drudgerous and tedious of rural women's tasks. Electrification of rice mills and other grain, oil and food processing facilities can reduce women's workload in the home.

Electrification has been justified on the basis that it results in economic progress, but recent thinking has acknowledged that electricity is insufficient, though necessary, catalyst for this. Experience suggests that, rural electrification and to a larger extent peri-urban electrification has not necessarily resulted in 'extensive use' of electricity due to various constraints (quoted in Wamukonya 2002). In the majority of electrified households, only lighting, radio and TV services are met with electricity while most other energy needs continue to be met with other energy carriers. As such, electricity cannot be a basic good but rather a high quality and expensive energy source that only becomes appropriate at higher levels of income or productive potential. In particular, although electricity has many benefits, it does not help address the major energy problem that most women in rural areas face in terms of their practical needs: their daily cooking requirements. Cooking with electricity is not cheap in terms of either the energy itself or the stove. Thus it would appear that electricity could empower a society only if the necessary complementary factors are available. Advocating for electrification of women would hence not address the fundamental sustainable development issues.

Electricity is unlikely to meet the basic energy need of cooking
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More recently, increased attention has also been paid to energy for entrepreneurship, though almost exclusively in small-scale agriculture and other micro -enterprises. This attention has mainly been tied to the use of biomass and the potential for fuel switching in small-scale food processing businesses operated by women. There is also a growing interest in community participation, ownership and management of energy projects. Experiments like the REDP have a definite focus on community level issues, including women's needs, and these have been comparatively more successful.

Empowering Rural Women: Lessons from REDP

The Rural Energy Development Programme (REDP) of Nepal, initiated in 1996, aims to enhance rural livelihoods through installation of micro hydro-power systems. Expansion of sustainable rural energy systems is seen as an entry point for economic development and poverty alleviation. The programme stresses community mobilization, bottom-up participatory planning and decentralized decision-making. Productive income generating activities are targeted as the intended end uses of the energy supplied, and skill-training is provided to promote agricultural and home-based businesses. The project ensures equity and empowerment of both men and women from every target household through establishment of separate male and female community organizations, which form the basic functional unit for the programme.

The equal opportunities offered have had a very visible and positive impact in mobilizing women and integrating them into mainstream activities. The women in community organizations have a distinct voice in local affairs and their capability for independent and collective action has increased, as has. Two out of the five micro hydro schemes in a remote district in far-western Nepal (an area where women have the lowest social status) are chaired by women. The project has directly resulted in reduced drudgery in household tasks and an increase in productive and community roles.

3.4 The Place of Gender in National Energy Policies

In most countries, the primary emphasis of energy policy is still on petroleum fuels, and efforts are focused on increasing the efficiency in the electricity sector through privatization, 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 of energy planning because they do not fit into the traditional energy paradigm. In conventional thinking, energy consists of inanimate fuels like oil, natural gas, etc. (Cecelski 2000), and is to be used in large-scale, capital-intensive technology projects run by professional experts for the purpose of providing energy for economic growth. In reality however, even basic decisions to build hydro dams or improve the fossil fuel distribution system or investigate the feasibility of small-scale alternative energy sources have gender implications. For example, large-scale expansion of the electrical grid without support for domestic connections may bypass poor women. On the other hand, support for village-level initiatives focused on renewable energy sources may provide women with both new energy services and employment.

4. Mainstreaming Gender into Energy Policies: Constraints and Policy Directions

4.1 What does “Engendering” Energy Policies Involve

Taking a ‘gendered’ perspective means exploring and analyzing an issue, from the starting point that women and men have different roles, activities and responsibilities in their society, which are allocated on the basis of their sex. These are known as their *gender role or relations*, which are socially determined and they vary according to time and place and are influenced by other social relations, such as class, race, ethnicity, etc. Within a given society, these relations can be mutually supportive with good cooperation between the sexes, at other times, they will be in conflict, and there can exist competition for household resources between men and women.

‘Engendering’ energy policies involves,

- Recognizing that men and women have different energy dynamics (roles in household, decision making areas, energy needs, responses to crises or coping mechanisms),
- Developing policies and technologies responding specifically to these needs,
- Incorporating meaningful roles in planning, designing and executing energy programmes, and finally,
- Improving energy access to women to improve quality of life and increase efficiency and reduce work burden in productive activities.

Mainstreaming gender into energy policies essentially involves recognizing gender differences and including gender as one of basic underlying factors that are taken into account in every planning exercise. Gender mainstreaming calls for positive 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.

4.2 Constraints in ‘Engendering’ Energy Policies

4.2.1 Practical and Social Constraints in Involving Women in Energy Planning

Lack of ownership rights over productive resources. Women, by and large, have access but not control over resources like land. Customary laws throughout much of the region, especially in rural societies dictate that sons inherit the land and herds of their parents, while women inherit only movable goods, such as jewellery and specific household items. Thus, men are the owners of production, while women are without property, which leaves them vulnerable and dependent on the goodwill and sense of responsibility of their menfolk. As sons inherit land ownership, women are usually left without the important source of collateral for obtaining credit from banks.

Restrictions on decision-making outside of the household. The traditional roles or spheres of influence delimit the decision-making roles of men and women within the household. Because of these cultural and social norms, women generally do not have the opportunity to undertake decision-making roles or responsibilities in the public sphere, such as being involved in village councils and other local bodies. Thus, it remains generally that no formal mechanisms exist for publicly voicing or debating the concerns of women. Consequently, “women’s issues” are often not seen as being as important as “men’s issues” because they are not publicly discussed. Because women lack a formal voice in the community, rural energy development projects are often formulated with objectives or implementation schemes that are in direct conflict with their desires or capabilities.

Economic Constraints. Majority of activities within women’s productive sphere are of a subsistence nature and within the informal economy. Women are rarely paid for their daily labour and when they are, it is often at lower rates than men. Consequently, women rarely have access to disposable cash incomes with which to purchase new innovations. Additionally, women are often denied access to institutional credit; loans are mainly given to men, and since women are denied the right to own land they lack collateral to guarantee loans. Furthermore, because the structure of household decision-making places all monetary decisions and control in the hands of men, women are denied access to benefits of rural energy interventions. This phenomenon is reflected in interventions in the domestic cooking system where men have to be convinced to undertake even the smallest expenditure for the kitchen.

Educational barriers and constraints on access to information. Women’s restricted access to education, training, and information also form effective barriers to their participation in rural energy intervention activities. Their reproductive role and responsibility for childcare further hinders their mobility and therefore access to information. For women, lack of time arising from the work burden is an important factor contributing to low literacy rates.

Informal and unorganized nature of women’s enterprises. In most developing countries, the majority of informal sector enterprises are owned and operated by women (table 4). 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 their gender-defined roles. Women-headed enterprises are frequently located in the home, and these “cottage industries” tend to be overlooked by agencies because they are in the informal sector, which is diffuse and difficult to reach. When women in rural areas do generate income, they operate mostly in the informal sectors, with less access to financial resources, credit and equipment than do men, and less of a voice in household, or community-level decision making. The types of enterprises that women are traditionally involved in are energy intensive and rely on biomass fuels. In food processing enterprises it has been estimated that energy costs are 20 - 25% of the total inputs.

Table 4. Sample Small-Scale Enterprises Operated by Women

Enterprise	Comments
Rice parboiling	15-20% of firewood in some districts of Bangladesh
Bakeries	Wood is 25% of bread production costs in Kenya; 80% of those in Peru (0.8-1.5 kg wood / kg bread)
Hotels, restaurants, guest houses, tea shops	816,865 tonnes wood annually in Nepal
Food preparation and processing	13% of total household income in Nepal; 48% of mothers in Dangbe district in Ghana engaged; 49% of women in one village in Burkina Faso

Source: UNDP 2003

It may be mentioned here that these barriers to women's participation in rural energy intervention activities are also common in other rural development programmes. However, these barriers become even more significant in light of the fact that energy is not normally a priority issue in the minds of rural people. This is not because energy is not important, but because there are more impending family needs to be taken care of, like employment, household income, children's health and schooling. Consequently, issues such as infrastructure development and employment generation often take precedence over energy in the minds of local people as necessary initiatives. Furthermore, as cooking energy is entirely in the domain of women, it is a low priority issue for men as compared to other areas such as housing, improvements in agriculture etc.

Challenges Involving Women in Energy Planning

- Lack of control over productive resources
- Social restrictions
- Limited access to information
- Unorganized and diffused women's enterprise
- Shortage of women in energy institutions
- Knowledge gaps in gender and energy

4.2.2 Institutional and Programmatic Barriers

Traditional institutional set up in energy institutions. In general, the energy profession is still male dominated. Women mostly stay in less important posts and are hindered by constraints like limited training opportunities as those related to physical safety. This has serious implications for energy interventions. At the field level, men extension workers tend to interact with the men-folk and contact the head of the household who is a male even if the information is of relevance to women who are the purported beneficiaries of any innovations/ technology (Agarwal 1986). As a result, women tend to remain silent receivers of information or 'project beneficiaries' or at best 'data sources'. Worse still, technologies and innovations that are actually targeted for women are based on perceptions and preferences of men. In the cases when women are consulted, it is often in the presence of their husbands and so the women's articulated needs are often not necessarily their own. In many cases, the women are so accustomed to considering the more general needs of the family that their own needs are latent and not easily expressed. The lack of women in energy professions is a major reason for the neglect of women in energy planning in the past, and the need for more women in senior posts has been raised by researchers.

Gaps in knowledge base. The cross cutting issue gender and energy researchers are grappling with is the lack of gender-disaggregated data. In many instances, lack of data is also the reason why gender issues have not been adequately addressed in *macro-level* policies such as energy investment, imports and pricing (although it also can be argued that lack of data is the result, not the cause of this neglect). Most attention has been at the micro-level in terms of technological interventions such as cook stoves, biogas, solar cookers, wood plantations, etc. This, in turn, has implications for policies regarding the use of public research and development funds, the focus of technical training programmes, and the design of technology needs assessment activities. Disaggregating information by gender about needs, preferences, income and expenditures, decision making, access to credit and information in market surveys; disaggregating information about benefits and impacts in monitoring and evaluation studies; disaggregating information about staffing and employment in progress reports; all of these would improve the data on which projects are based, and very likely the benefits to women (Cecelski 2002).

What we know in gender and energy...

Time and effort expended on biomass collection

Anecdotal information on decision making within the household and society

Qualitative information on indoor air pollution implications

Micro level impacts of energy interventions

Energy saving impacts of renewables

What we don't know...

Coping strategies to deal with energy scarcity

Role of energy in productive uses, including home based micro enterprises

'Real' impacts of interventions : rural electrification

Gender implications of privatization and commercialization of energy services

4.3 Overall Policy Directions

Consider full menu of options. Multiple fuel use is common phenomenon in rural households. Many also use the same technology for multiple purposes. The use of stoves for providing warmth, keeping insects away and providing light is a common occurrence in rural households. Typically, poor people have fewer energy options than do rich people and they often pay more for them both absolutely (paying higher unit prices) and relatively (as a percentage of their income) than do the non-poor. In light of the fuel shortages the rural poor face, women highly value and need multiple energy options to help manage their daily work and time. In terms of energy policy, this necessitates questioning the conventional wisdom of expecting people to only move up the 'energy ladder' and the need to explore a more complete range of options including lateral shifts on the energy ladder.

Focus on technologies that are manageable in terms of complexity and scale. Technologies vary considerably in scale, technical complexity, and hence in operational and maintenance requirements. On one end of the spectrum is grid electrification, which is highly centralized, but requires practically no maintenance on the part of the consumer. However, for small, scattered, peaky loads (high loads in mornings and evenings), which are typical of rural areas, supplying grid electrification can be prohibitively expensive. In such situations, decentralized electricity generation is more attractive. Decentralized systems, like solar home systems, also place more control at the household level, thus making them more amenable to operation and maintenance by local women. In a rural set-up,

considerable emphasis is placed on easy handling of the system, and women desire technologies that they can operate and maintain without having to undergo rigorous training, requiring minimum external inputs (ICIMOD 1995).

Priority to women's drudgery reduction technologies. A general rule that can be learnt from attempts to introduce technology for women is that if it does not reduce the labour in household tasks then, no matter how beneficial the technology, it is likely to have low acceptance. Technologies like stoves, kilns, grinders, presses and pumps that have a direct bearing on women's workload would always be of great importance. Enhancing women's well being can be the first step in improving their socio-political status through better health and more self-confidence.

Energy service for women's multiple tasks. While cooking accounts for a large proportion of domestic energy consumption, women are not only involved in cooking. They are engaged in many other tasks and responsibilities that could be accomplished more easily and efficiently if they had access to lighting and electricity, and the energy services electricity can provide

Focus on cooking as the primary end-use. Cooking is women's most important energy need in terms of time and effort. It accounts for a large share of household energy consumption, and the largest single rural energy use in low-income countries (Cecelski 1998). It is even larger if we include women's micro-enterprises, where food processing and other energy intensive activities make up a considerable proportion of informal sector energy consumption. And electricity provision does not address rural cooking needs in most cases. In particular, most decentralized electricity systems cannot address cooking needs at reasonable cost. This means that, unless cooking needs are addressed, women's energy needs would remain largely unaddressed.

Improve efficiency of biomass use. In spite of large governmental initiatives to promote commercial fuels, biomass continues to remain the primary fuel for cooking energy in developing countries, accounting for about one-third of all energy and nearly 90% in some countries (Cecelski 2000a). In India, only one percent of rural households have switched over from firewood and chips as a source of cooking since 1987-88 (GoI 1997). Only 1.3% households in the rural areas use LPG for cooking (CMIE 1996a) and 1.34% rural households use kerosene (CMIE 1996b). The use of firewood in form of logs, on the other hand, has tripled over the last fifteen years. Between 1978-79 and 1992-93, the share of firewood in the form of logs has risen from 18.95% (percentage of households using fuel) to 32.49% (Agarwal 1998). Hence, it can be inferred that while conventional modern forms of energy (fossil fuels, and electricity) will remain the fuel of first choice for many poor people for many years to come, traditional biomass fuels will remain the main fuel of necessity. The need for improving the efficiency of biomass use can hence not be over-emphasized.

Gender Friendly Energy Strategy Directions

- Look beyond 'going up the energy ladder'
- Focus on technologies that are manageable in terms of complexity and scale
- Focus on cooking as primary energy end-use
- Provide 'energy service' for women's multiple tasks
- Improve biomass use efficiency
- View energy as an 'input' to development

5. Measures to Engender Energy Interventions

If energy policies are to become more gender sensitive, it is clear that two major transformations have to take place. Firstly, women have to be empowered to make choices about energy. Enabling choice is linked to issues of sustainable livelihoods and poverty alleviation, including access to income generating activities. Women should be able to act upon the energy choices open to them, and their scope for this type of action is linked to decision-making within households. Such a shift in decision-making requires women's social and political empowerment. Secondly, it also requires changes on the energy supply-side. It will require responsiveness by the energy sector in the provision of equipment using modern energy forms that reduce the drudgery of much of women's labour, and that at affordable prices. This section discusses some measures that can help mainstream gender issues in energy planning and policies.

5.1 Paradigm Shift from Energy Technology Focus to Energy Service Provision

In the past, there has been a tendency to concentrate on *fuels*, such as electricity or petroleum, and the supply of these, or on *energy technologies*, such as solar equipment or improved stoves, within dissemination programmes. Recently, it is been suggested that the focus should be shifted to the concept of energy *services*, with the hope that this will enable better access by the poor. What this implies is that far more consideration would be given to what people need energy *for*, and identification of the constraints or conditions around these end uses. Energy needs should be considered within the overall context of community life, and energy policies and projects should be integrated in a holistic way with other improvement efforts relating to health, education, agriculture and job creation. Policies, programmes and projects should start from an assessment of people's needs rather than a plan to promote a particular technology. The needs of different rural communities vary widely, and finding appropriate technologies and effective implementation strategies can be very site-specific.

A well-formulated needs assessment undertaken prior to programme design will ensure that the approach is grounded in the specific reality of the people involved, not driven by 'pre-conceived' intentions regarding the need for a particular energy technology. A possible way of doing this would be to help village women identify key problem areas/ areas where they would welcome external intervention and then explore if any energy inputs can bring about an improvement in that area. For instance, in a village where income generation is the topmost priority of the women, an extension of work hours in the evening (through possibly solar lanterns) may spur off or convenience and improve the efficiency of home based cottage industries, such as spice pounding, handicrafts etc.

This approach is likely to work better as regards energy poverty since it requires much more attention on the nature of the problem at the user level, and implies a comprehensive analysis of the totality of user needs, rather than a piecemeal, supply driven, approach.

5.2 Improving Access through Markets

Governments can play a crucial role in promoting improved access to a variety of fuels and energy technologies, through investments in market development, taxes and tariff policies. Subsidies and other innovative credit mechanisms may also be needed to help poor people meet the relatively high upfront costs of decentralised energy options, especially renewables. What is important to remember is that if the energy needs of un-served populations are to be met, it will be essential that support is provided to the “full menu” of energy services (based on biomass, solid, liquid and gaseous fuels, and electricity). This will give suppliers the best chance to satisfy consumer demand with the most appropriate solution, and will not undermine the financial viability of the resulting businesses by imposing artificial restrictions (such as limiting the available options to single technical option such as photovoltaics).

5.3 Social Marketing of Energy Interventions

In many rural areas, acceptance and popularity of any technology by rural women are socially administered by the male head of the household (Hafeez 1998). In such situations the success of any pro-women technology is largely linked to the parallel motivation and involvement of the family’s male members with the technology itself and their involvement throughout the process.

Many energy programmes in the past did not take off because of the implicit assumption (and complacency) that because the intervention is useful for women, they would automatically adopt it. In reality, this is not necessarily the case and men can influence significantly the uptake of energy technologies in the women’s domain of the kitchen. In Zimbabwe, men are reported to have rejected the use of solar cookers by their wives, since technology and its development are seen traditionally as a male preserve (quoted in Clancy and Skutsch 2003). Some men have also expressed concern about the use their wives would make of the time saved through using new stoves, while others saw it as an opportunity for their wives to undertake more productive activities (ibid). For the same reason of people being able to see direct gains from an intervention, environmental issues must be addressed in the context of helping people meet basic needs. People struggling for survival are unlikely to adopt more environmentally friendly technologies unless it can be clearly shown how they can improve family health and well-being.

The ‘marketing’ argument is essentially an extension of the ‘energy as an input to development’ concept. A more market-oriented approach to the energy sector could promote greater understanding of consumer needs for energy services rather than simply working to increase supply. Since women represent a large percentage of energy consumers in rural areas in developing countries, understanding how their priorities might differ from those of men will be increasingly significant for those who are involved in marketing energy services. It necessitates that an energy technology / intervention be viewed as a ‘marketable’ product, aimed at satisfying a need, expressed or otherwise. The energy programme should then focus at helping communities, including women to identify an energy need, offer a range of appropriate options to satisfy the *need* and create/provide enabling conditions to translate it into real *demand*.

Enabling conditions include bridging information gaps through awareness campaigns, enhancing purchasing power through credit mechanisms, providing

Need, Want and Demand

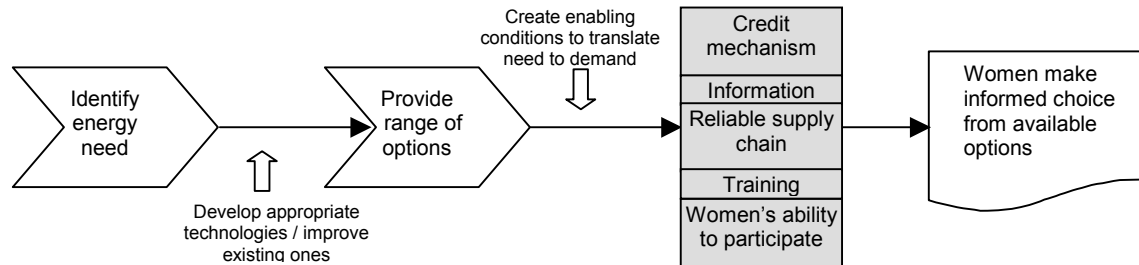
Need is a state where a basic requirement has not been satisfied

Want is a desire for specific satisfier of these needs.

Demand is want for a specific product that are backed by an ability to pay and willingness to buy it

access to training and extension, and improving women's ability to participate in programmes.

Figure 1. A Marketing Approach to Energy Planning



According to the marketing approach, the greater the income-generating effects of sustainable energy efforts targeting women, the easier it is to mobilize support. When local people can actually make money from manufacturing or selling new energy technologies and services, an entrepreneurial dynamic is unleashed.

5.4 Specific Interventions Aimed at Women- Quality of Life and Productive Uses

Energy interventions can directly contribute to women's practical, productive and strategic needs as shown in the table. As an input, energy can make women's domestic work easier as well as improve productivity in income generating work.

Table 5. Energy Interventions for Women

Energy Form	Women's needs		
	Practical	Productive	Strategic
Electricity	Pumping water: reducing need to haul and carry Mills for grinding Lighting improves working conditions at home	Increase possibility of activities during evening hours Power for specialised enterprises such as hairdressing and internet cafes	Make streets safer: allowing participation in other activities (e.g. evening classes and women's group meetings) Open horizons through radio, TV and internet
Improved biomass (supply and conversion technology)	Improved health through better stoves Less time and effort in gathering and carrying firewood	More time for productive activities Lower cost of process heat for income generating activities	Control of natural forests in community forestry management frameworks
Mechanical	Milling and grinding Transporting of water and crop outputs	Increases variety of enterprises	Transport: allowing access to commercial and social/political opportunities

Source: Clancy and Skutsch 2003

Electricity can help meet some of women's high priority energy needs, such as:

Reducing labor in water collection by energizing water pumping. Pumping drinking water is nearly always the highest priority for women, unless clean water is already available from some other source. The proportions of rural women affected by water scarcity are estimated to be 55% in Africa, 32% in Asia, and 45% in Latin America, with the median time for collecting water in the dry season about 1.6 hours per day. The use of off-grid electricity to improve availability of clean water would have a high value to households in terms of health and quality of life, and a particularly positive impact on women's time and saving-saving, and possibly their employment and confidence-building through drinking water projects.

Saving labor and time in cooking where feasible. e.g. with excess output from small hydro, perhaps with low-wattage, low-cost appliances.

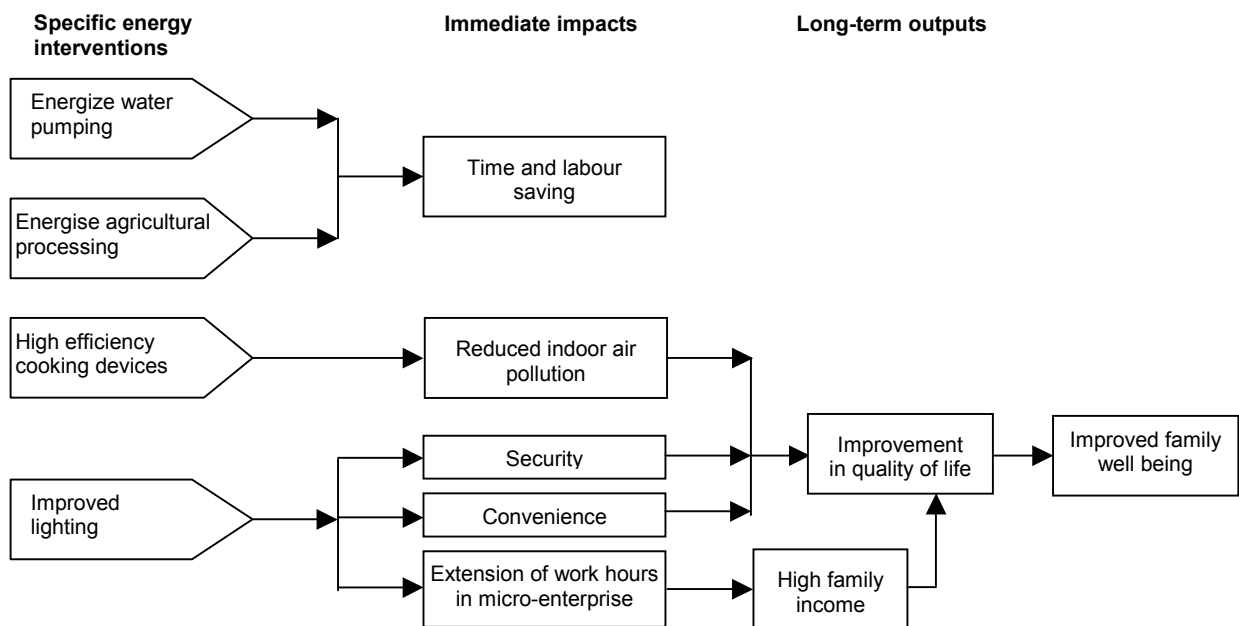
Saving women's time and labor in agricultural processing. Post-harvest food processing is one of the most arduous and tedious of rural women's tasks. Electrification of rice mills and other grain, oil and food processing facilities can thus reduce women's workload in the home. Indeed, these are typically the first rural industries to electrify after grid extension. Benefits arise from the time and effort saved in processing, or from costs saved when a diesel mill electrifies, if these costs are passed on to consumers.

Making women's domestic work easier. When women have safe and reliable lighting in the evening, they are better able to perform essential child-care responsibilities, and their children have more time to read. Lighting for homes, businesses, streets and marketplaces is also critical for facilitating women's involvement in educational, entrepreneurial and community activities. Global evidence has shown that the availability of illumination in the home increases female educational attainment and literacy. Lighting in public places also increases the safety of women and communities and allows women greater access to public gatherings. Since illumination does not require a great deal of electrical power, better lighting can be provided through low-cost lighting options using battery power, small home systems or decentralized village power systems. Policies that promote the availability of lighting, therefore, represent a relatively inexpensive means of providing benefits that are particularly important for women.

Improving the productivity of women's income earning work. As mentioned before, women's micro-enterprises are typically home based. Women work at home in spurts when they have time, often after the children are in bed. They need light when they work. Lighting can enable the extension of working hours of both women and men, in income earning activities. Availability of electricity is also essential for creating new employment opportunities and supporting value added activities linked to agricultural production. Small-scale manufacturing, food processing industries, trading and marketing opportunities are all greatly expanded when energy services are available and have direct positive influences on women and their communities.

Focusing on specific energy interventions for women offers the additional advantage that unlike other groups, interventions targeted at improving the life of women almost always get translated into family well being, unleashing a multiplier effect on the society at large as shown in figure 2.

Figure 2. Multiplier Effects of Women-Oriented Energy Interventions



5.5 Promoting Women as Energy Entrepreneurs

Encouraging women to become energy entrepreneurs, rather than merely the beneficiaries of expanded energy services, has multiple development benefits. These include the advancement of women, expansion of economic activities, diversification of productive options, and the creation of new sources of wealth and income to support family investments in education and health. Energy policies that support the development of entrepreneurial energy activities and business approaches that involve and benefit women, can achieve positive impacts beyond the energy sector.

Madhu Sarin's work in India has indicated that improved stove

Women's micro-enterprise in Bangladesh

Prokaushali Sangsad Limited (PSL) is promoting a rural women's micro-enterprise in Bangladesh. The project is located at Char Montaz, an island in southern Bangladesh, a five-hour motorboat journey from the nearest commercial centre. Electric grid extension to this area will not be economically viable within at least the next 20 years, and therefore there is a high demand for alternative modern lighting.

Through a micro-enterprise, rural women are engaged in the construction and sale of fluorescent lamps that use direct current (DC) and rechargeable batteries. The women involved in the project run the manufacturing plant that produces the lamps, and are certified by the local government to run their business as a cooperative. Besides lamp construction, women are also learning about quality control, business development and marketing. If a woman constructs and sells two lamps a day, her daily income increases by 100 Taka (approximately US\$2). This is equivalent to the daily wages of a skilled labourer, and thus raises both her income and her social status.

The project advertised the lamps by organizing public meetings, distributing handbills, setting up billboards and posters and demonstrating at several locations. A detailed marketing plan was developed by the women covering factors such as business location, customer characteristics, target markets, competition, electricity demand, marketing goals and strategies, and budget considerations.

About one thousand rural households are using these lamps today in the remote islands of Bangladesh.

programmes run by women tend to be rather successful because they are able to more easily approach their clients. Energy entrepreneurship could extend beyond stoves to include energy services, for example the supply of, and even the repair of, modern energy appliances such as solar panels. 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 are ideal candidates to become renewable energy entrepreneurs for household and small-scale industry because:

- They are users of these devices, so they may be more sensitive to customers' desires, e.g. women potters produce and market 11,000 stoves annually in West Kenya;
- They are effective entrepreneurs with a good credit record, e.g. in 1996, 94% of Grameen Bank borrowers were women, with a 98% repayment rate;
- They can more effectively market to women, e.g., the Vietnam Women's Union is promoting solar home systems and collects payments from the customers.

Women Entrepreneurship through the Multifunctional Platform

The Multifunctional Platform project, implemented by the UNDP and UNIDO in Mali and at a pilot stage in Senegal, Burkina Faso and Guinea seeks to create income-generating opportunities for women through provision of affordable energy services. Multi-Functional Platform, which consists of a diesel engine mounted on a chassis to which a variety of end-use equipment can be attached, such as grain mills, battery chargers, oil presses, welding machines and carpentry tools. In addition, the engine can be used to generate electricity for sale, which opens up the prospect of women becoming energy entrepreneurs and setting up their own electricity service companies. The platform is managed by women's associations, which also contribute 40-50% of the cost. In each village, around 800 clients, mostly women, buy energy services from the platform. Studies show that the project increased annual income per participating woman from about US\$40 to US\$100, and freed 2-6 hours of her time per day. To date, 220 platforms are operating in Mali, and there are plans to extend the project to other African countries.

Source: Johansson and Goldemberg 2002

There are many positive examples of women taking up energy technologies that have contributed to increasing their incomes.

- The Vietnam Women's Union has been active in the promotion of solar home systems in rural areas through its extensive network of 11 million members. Many of the local technicians responsible for installing the solar home systems are women (UNDP 2003).
- Women's groups in Ghana use LPG for fish preservation, giving them a better quality product than when using wood, and enabling them to reach export standards, considerably improving their income.

5.6 Capacity Building and Networking

Capacity building is a key intervention area for ‘engendering’ energy policies. Capacity building should involve a wide range of actors, from men and women from the community level, to project implementers and policy-makers. It is crucial for all levels to gain firsthand familiarity with real projects; moreover, learning and innovation can be greatly enhanced through interactions that are cross-level and multi-sectoral. Capacity building can be considered at 3 stakeholder levels – national policy makers, implementers of energy programmes and NGOs.

National policy level. It is crucial to increase the sensitivity towards gender issues in development planning among policy-makers. This is important because the dissemination of gender issues ultimately depends on the political will of development agencies and governments. The will to acknowledge gender is directly reflected in allocation of funds to research, training and development of gender-sensitive planning and evaluation methods. At this level, capacity building efforts need to make use of powerful advocacy means backed by solid data and facts. There must be an explicit mandate for gender training from the top of the organization, which must be communicated to all departments within the organization.

Implementers of energy programmes. There is a critical need for better training of staff working with gender issues focussing on communication skills and cultural sensitivity. Training should relate as directly as possible to the work of the staff concerned. It should be based on concrete gender procedures adopted by the organization. It is important to remember that most electricity departments are male dominated who interaction with village women is practically non-existent. Hence administering any gender tools in such a scenario is likely to be viewed with scepticism and suspicion by women as well as their male counterparts in villages. Hence the need to tread slowly and with caution cannot be overemphasized. Gender sensitivity at this level would be reflected in extension workers being able to see the near term advantages of involving women in planning and decision making in energy interventions. Specific areas for capacity building include:

Gender sensitization at field level should convey the message

“Women’s energy needs are different and significant”

“Involving women in energy interventions can improve adaptability and performance of interventions”

“This can be achieved by tools that are time efficient and easy to administer.”

- Developing skills in employing gender sensitive tools that are uncomplicated, easy to learn and quick to administer.
- Dissemination and exchange of information on successful instances of involving women. The focus of the experience sharing should be on results of such efforts, functionality of tools and the messages should be direct, simple and hard-hitting.

NGOs. There are a large number of NGOs involved in energy programmes especially in rural areas. These organizations, being close to rural communities can be trained to perform two critical functions –

- Pilot test tools and methodologies and implement innovative projects,
- Collaborate with village based CBOs and work towards social empowerment process.

Table 6 summarizes the capacity building needs for the various stakeholder groups in gender mainstreaming energy policies.

Table 6. Capacity Building Needs for Mainstreaming Gender in Energy

Target Group	Capacity building need	Means
National policy makers	Sensitization towards <ul style="list-style-type: none"> • Openness to try out new methods and tools • Willingness to make space and strengthen women staff in organization's set up 	<ul style="list-style-type: none"> • Advocacy through sharp media and print messages • Well structures and focused interaction with researchers and NGOs
Implementers of energy programmes	<ul style="list-style-type: none"> • Sensitization towards gender issues • Practical tools and techniques to incorporate women's role in planning 	<ul style="list-style-type: none"> • Field level workshops in local language • Exchange visits and interaction with local organizations working on gender issues
Village communities	For men, sensitization and assurance that women can meaningfully participate in energy programmes while respecting their traditionally accepted space and roles Willingness to participate in social empowerment process of women	<ul style="list-style-type: none"> • Exposure visits • Focus group discussions
NGOs	Tools and techniques to incorporate women's role in planning orientation towards new methodologies	<ul style="list-style-type: none"> • Local level workshops • Interaction with researchers and policy makers

Some key issues in gender training, as identified by Skutsch (Skutsch 1997) are as follows:

- Strong level of institutional commitment for gender issues, that is reflected in the organizational goals and HR policies
- Determining appropriate length of training programme, which depends on the professional level of the participants to be trained, their expertise, financial resources, and skills to be covered

Each organization needs to diagnose its internal situation in order to design an effective gender training strategy
- Engaging experienced trainers with specific skills in gender training: preferably a combination of male and female trainers
- The training methods and material, including experiential learning through the case study method

- What is needed is the addition of techniques to gain greater insight into gender issues, without major changes to the overall system of planning.

In order to maximize the degree of adaptation and adoption of appropriate innovations, organizations should seek relevant experiences from other organizations from which to learn. Rather than becoming gender experts themselves, sustainable energy implementers may find it more fruitful to seek collaborations and form functional networks with complementary organizations experienced in such methodologies. Some of the successful network in gender and energy include the ENERGIA: International Network on Gender and Energy, which has been functioning since 1995 and has acted as an international catalyst and focal point, including publishing ENERGIA News, and the Red Centroamericana de Género en Energía Sostenible (GENES), the Central American Network on Gender and Sustainable Energy of nine Central American countries founded in 1998 with the support of the Winrock Foundation.

Functions of a Network

- Record experiences, opinions, viewpoints and perspectives of its members
- Disseminate information, experiences, viewpoints, perspectives, etc., both within and outside the network
- Facilitate exchange of ideas, experiences and concepts through exchange of materials and that of people
- Advocate the needs and concerns of the members through collective pressure
- Promote innovations and develop methodologies.

5.7 Gender Tools and Methodologies to Incorporate Gender Concerns

Gender analytic tools are systematic frameworks for diagnosing the existing gender situation in a given community, or for assessing what the impact of an intervention is likely to be, on men and women (Skutsch 1997). There is no shortage of field methods and analytic tools for incorporating gender in the design and implementation of energy projects. Some of the commonly used frameworks are the Harvard Analytical Framework, the Gender Analysis Matrix (GAM), Capabilities and Vulnerabilities Analysis and Gender Needs Assessment. A summary of these methods is provided in Table 7. In order to make use of these tools, however, basic information is needed about the differential activities, roles, preferences, constraints, participation, and access by women and by men (Cecelski 2002). Analysis of rural energy end-use patterns typically does not distinguish between women's and men's energy uses. Many rural energy end use tables do not even include some of women's most critical end uses, such as drinking water pumping, food processing, fuel collection and crop transport, and transplanting and weeding in agriculture.

5.7.1 Gender Analysis for Project Planning

Gender analysis involves analysis of the causes of gender inequality, and of the differences between women's and men's activities, roles and resources. It examines the relationships between men and women, and involves asking who will benefit or be negatively affected from the intervention, why, and to what extent (UNDP 2001b). The use of gender-aggregated data must be made standard in planning and evaluation of all energy projects. The objectives and implications of including the gender issue must be clear in every project or program formulation. Gender-specific projects must pay equal attention to all groups in society. Gender analysis should provide the following broad types of information (UNDP 2001a):

Gender Awareness. What is the relative situation of women and men in the energy sector?

Activities, Access and Control. What are the principal and/or most relevant features of the sexual division of labour (taking account of both productive and socially reproduction activities), and their implications for the productivity and economic sustainability of energy policies and interventions?

Women's Priorities: Restraining and Driving Forces. How can this information best be applied to the development problem to be addressed, and/or to the better attainment of specific outputs and outcomes? What are the trends and changes emerging in the sexual division of labour, which could be leveraged for greater equality between women and men?

Practical Needs and Strategic Interests.

Would it be more appropriate in the given circumstances to address women's (and men's) practical gender needs, or to take a more transformatory approach and address the underlying causes of their situation, hereby responding to their strategic interests, and why? How would these approaches impact upon likely project outcomes, on men and women in the situation as well as on the overall social context.

Skutsch (Skutsch 1997) classifies the commonly used gender analysis methods into three broad typologies:

Using gender analysis as a filter. This approach is best explained with the parallel of using EIAs (Environmental Impact Assessments) for projects. Here, gender analysis is used as a 'sieve' or filter through which all project proposals should go before approval. Thus projects are not deliberately

What is gender analysis?

- An intrinsic dimension of policy analysis
- Identifies specifically how policy affects women and men differently
- Demonstrates that policy and implementation cannot be gender neutral in gendered societies
- Is supported by specific analytic tools

What competencies are required to undertake gender analysis?

- Familiarity with main Gender Analysis Frameworks
- Ability to select the Framework most likely to yield solutions to the development problem to be addressed
- Able to interpret data
- Able to use strategic decision-making skills

Source: UNDP 2001

designed with gender as a primary concern, but some degree of equity is assured because all projects have to pass a 'gender test'.

Building gender into the project cycle. In this approach, gender issues are considered at every stage of the project cycle. This is akin to the 'wearing of gender specs': it involves consciously seeing the gender aspects of the development process as it is going on, and the gender impacts of potential interventions. This is a more thorough-going approach to incorporating gender issues, and it means that a variety of different planning tools or analytic frameworks will be needed for use at different stages and at different levels of data aggregation. The result will be that gender considerations may be creatively taken into account from the very beginning of the process (problem identification and project formulation) and not merely used to filter out 'poor' projects.

Building gender into other planning procedures. Some agencies base their planning procedures on models such as the Logical Framework, or around computer based energy models, which predict supply and demand etc. In principle there is no reason why gender issues should not be incorporated into such models, whether they are used at the beginning of the planning process to identify potential interventions or at the end to evaluate them.

While one or a combination of tools may be used for gender analysis of energy projects, the important thing is to ensure that they fit into existing planning procedures. In this way the gender issue is 'mainstreamed', and not kept apart as a separate procedure. It is important to examine which methodology is appropriate and cost effective in the existing institutional set up. Conventional wisdom suggests that methods and tools that require minimum management changes are likely to be accepted most easily in the existing systems. While this may be true, it is important to remember that least investment option need not always be the most optimal one, especially in the long run.

Table 7. A Summary of Gender Analytic Tools

	Harvard Analytical Framework	Gender Analysis Matrix (GAM)	Forcefield Analysis	Capacities and Vulnerabilities Analysis	Gender Needs Assessment
Overall focus	Focus on improving the efficiency of projects and improving overall productivity	To be used by grassroots workers to determine the impacts of an intervention on men and women	Tool for analyzing complex problems and helping to identify solutions	Identifies capacities and vulnerabilities of men and women in a particular context	Assesses the probable impacts of proposed projects and distinguish whether these will meet strategic or practical needs of women
Key components	Gender based activity profile, access and control of resources, factors influencing gender division of labour, access and control	Impact of the intervention at four levels: women, men, households and community with respect to labour, time, resources and culture	Definition of problem and the desired situation (goal), listing of the forces working against and for the desired change, list actions that can reduce the restraining forces and steps for solving the problem	Uses a matrix format to identify physical or material, social or organizational, motivational or attitudinal capacities and vulnerabilities of men and women	Asking two sets of questions: how and to what extent do the project activities address the practical needs of women, and how and to what extent do the project activities address the strategic needs of women
Strengths	Systematic, easy to understand and flexible	Easy to understand and carry out Involves groups	Provides a framework for analyzing complex problems Goal oriented	Explicitly covers organizational/institutional assessment	Can be used for policy as well as project analysis Clearly exposes the project goals in terms of benefits to women
Limitations	Is descriptive and not goals oriented Does not specifically look at needs	Gives little data for later analysis Time consuming Does not look at needs	Problem needs to be defined prior to analysis	Not goal oriented and does not explicitly look at needs	Does not explicitly identify barriers

Adapted from Skutsch 1997¹

¹ References for gender tools:

- Overholt, C., Anderson, M., Cloud, K., Austin, J. E. 1985, *Gender Roles in Development Projects: A Case Book*. Parker, R. 1993, *Another Point of View: A Manual on Gender Analysis Training for Grass Roots Workers*, UNIFEM, New York.
- Andersen, M. B. and Woodrow, P. J. 1989. *Rising from the ashes: Development Strategies in Times of Disaster*. Boulder, Westview Press.
- Williams, S. 1994. *The Oxfam Gender Training Manual*, Oxford.
- FAO 1993. *Integrating Gender Considerations into FAO Forestry Projects: Guidelines*, FAO, Rome.

5.7.2 A Framework for Mainstreaming Gender in the Integrated Cyclical Planning Process for Energy and Rural Development

This section outlines specific questions that must be addressed at different stages of the Project Cycle for integrated energy and rural development projects. 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 (Overholt et al 1985).

Assessment of Rural Energy Needs

- What are the energy sources and technologies currently being used by men and women in their daily lives?
- What, according to men and women, are the constraints in present usage patterns?
- What are the energy requirements of any new activities, which are planned/desired be men and women?

Assessment of Rural Energy Supply Resources

- Are the existing energy supply systems responsive to women's energy needs (domestic/ entrepreneurial)?
- Are the existing delivery channels accessible to women?
- What opportunities exist for increasing women's access to energy services?
- Are there any adverse implications of current energy supply system on women's access to and control of benefits?

Evaluation of Rural Energy Technologies

- What is the likely impact of the intervention on women's social and economic status and time and workload?
- Which of women's needs (practical/ productive/ strategic) is the technology likely to address?
- What are the views of men and women on the usefulness of the technology?
- Is the technology consistent with the current gender denomination and decision making structure?
- Will both men and women be able to access necessary inputs (e.g. credit, extension services etc.) to make best use of the technology/ product?
- How will the technology affect indigenous resource use systems (e.g. access to water, fuels and other common property resources)?
- What are the risks involved in using this technology?

Formulation of Programs and Projects

- Who is likely to participate in and benefits from the intervention?
- Are there any potential negative effects of the project on the promotion of women's and men's livelihoods?
- Who (men/women) are going to be involved in management and maintenance of systems?
- Is women's knowledge, especially on ecosystems and biological diversity, taken into account?
- How far have individuals and women's NGOs with knowledge and experience of gender mainstreaming participated in project identification, formulation and appraisal?
- Are the project personnel sufficiently aware of, sympathetic towards and trained to deal with women's needs?
- Are there appropriate opportunities for women to participate in project management positions?

Monitoring, Evaluation and Feedback

- What has been the impact of the intervention on women's workload and time-use, access and control of income and resources, decision-making, reproductive roles, and expressed aspirations of women and men?
- Does the project's monitoring and evaluation system explicitly measure the impacts on women?
- What are the types and sources of data needed and the methods of data collection and analysis required based on the indicators?
- Are measures adequate to ensure activities will be sustained after the project duration?
- Are the monitoring and evaluation results fed back to the project personnel for them to make timely project adjustments?
- Are the women involved in collection and interpretation of data?

Possible Indicators of Positive Impacts of Energy Interventions on Women

Increased acceptance of women as community decision-makers by both men and women

Enhancement of women's access to and control of resources

Increased women's involvement in personal, family or community development

New, more visible, and more effective women's organizations

More women in education and training programs

Support for women to enter non-traditional spaces and gain legitimacy in new roles

Improved health of women and children

5.8 Addressing Knowledge Gaps in Gender and Energy

While some research on various aspects of gender and energy has been going on for many years, it has largely been piecemeal in nature. Further, a significant part is anecdotal in nature, and not really based on scientific data. In order to build up a body of evidence, the

following areas of the gender-energy-poverty nexus, within a sustainable livelihoods framework, need attention and further research:

Coping strategies for resource depletion. In the literature available, there is scanty information on how communities, particularly women respond to shortages and environmental degradation. Issues like whether people are changing their cropping patterns to produce food that takes less time to cook, whether they are eating fewer meals per day or food that can be eaten raw or partially cooked, have not been researched carefully so far. In order to explore new alternatives to address resource shortages, it is important to understand how women manage shortages not just in broad, general terms but also in terms of specific, time-tested and reliable strategies that they have evolved over centuries.

Assessment of the real impact of interventions. It is important to pre-assess the impact of interventions on not only women's time and work profile, but also on self-realization and control over resources. Structural changes in the production systems often change the role and status of women. For example, vegetable cropping can bring about

Jackson's 1997 study of women's involvement in water projects showed that some women deliberately adopted a non-participation strategy to avoid increasing their overall workload, is instructive in this matter

good income. However the division of labour within the family is such that all the visible activities that involve money transaction (physical flows) are taken care of by the men. While the overall family income increases, the impact on the increase in income influences women's life last of all, if at all. At the same time, unlike traditional cereal crops, most commercial crops and vegetable cropping do not yield substantial byproducts like residues, which are of great value to women. Even in energy technology interventions, it has been observed that when machines are introduced, women's work is often taken over by men, and male operators displace women laborers (UNDP 2000). There is also very little information on the impacts on women of renewable energy interventions, and these have been hampered by lack of disaggregated data. At times savings in one area of drudgery can result in increased drudgery in another area.

Health implications of traditional energy use pattern. The full consequences of women continuing to rely on their own energy inputs and biomass fuels are not known. While there is some research being carried out into the effect of smoky kitchens on women's and children's health, other health linkages are not so well researched. For example, although the amount of time spent by women in collecting and carrying heavy loads of fuel is often noted, the damage these loads cause to women's spines is not documented. Women are also responsible for a number of other survival tasks needed to sustain the household such as water collection, food processing and cooking. Many of these tasks are demanding in terms of both human energy and time. In addition to the physical labour, it is also necessary to focus on the psychological pressure women are under because of their responsibilities for household survival and the future of their children.

Assessment of the impact of electricity on women. The extent to which electricity can contribute significantly to poverty alleviation is not clear. 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. There are mixed findings on this. A study into the socioeconomic impacts of rural electrification in Namibia showed that women did stay up

later than men, not working but socializing. (Clancy and Skutsch 2003). 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.

5.9 Support Mechanisms

While specific technological interventions can bring about improvements in the lives of women, it is clear that in the long run, the dissemination and adoption of interventions can be successful if and only if they are accompanied with mechanisms that enable the women to make full use of available opportunities. Some of the important enabling mechanisms are as follows:

Credit facilities. One of the key areas for enabling women's participation in improved energy equipment is credit and finance. For women to have increased access to new technologies, credit mechanisms are essential and must be easily accessible by women. Women need access to credit and other promotional strategies in order to benefit from renewable energy: to purchase household appliances or obtain connections, to improve energy efficiency in their micro-enterprises, and perhaps as energy entrepreneurs. The latter two are especially important, because women use additional income from their enterprises for food, school fees, clothes and other basic needs for their households.

Micro-credit experiences from across the world show that women clients of micro-credit programmes have excellent repayment records. The Grameen Bank in Bangladesh, which has provided micro-lending services to poor women since 1976, has demonstrated that women are extremely credit worthy. In fact 94% of Grameen Bank's clients are women. (Allderdice and Rogers 2000). A study by Women's World Banking identified a number of financing programs that have been successful in providing micro-credit to women: poverty-focused programs within commercial banks; poverty lending banks; non-governmental organizations; and affiliate network institutions.

Policies to support credit opportunities for women must address the collateral or revenue stream requirements of commercial credit organizations, as well as the legal status of women and other factors that may exclude women as borrowers. Group collateral should be acceptable for the interim period until assets are created that can be mortgaged. Loan procedures and formalities should be simplified and reduced to minimum.

Factors that make these credit programs accessible to women include:

- Access to credit, not subsidies
- Small loans with frequent and flexible repayment schedules
- Alternative collateral requirements
- Low transaction costs to the client (in money and time)
- An informal banking atmosphere where women are respected
- Simple loan application procedures to accommodate illiteracy
- The use of information channels accessible to women

Although credit can play an important role for women, still, credit is not a panacea for access to electricity by poor women. The effective use of micro-credit requires complementary resources - land, skills, capital - which many poor women lack.

Information availability. Information gap is perhaps the most serious constraint being faced by rural women. If information on technologies, programmes, markets etc. were more widely available and accessible, women and men would be better able to make their own choices out of a range of possible options. There is also a need for sustainable information and communication system at national and regional levels on emerging opportunities suitable for women.

A potential vehicle for information sharing is hundreds or thousands of formal and informal groups of women who participate in groups formed for credit/savings, natural resource management, entrepreneurship etc (Gurung 1998). In fact, self-help groups are the most commonly used delivery instruments for development programmes by NGOs. There are also a large number of cooperatives and farmers groups operating informally. These have a mechanism to meet on a regular basis to discuss various issues. This existing network of village level groups as well as NGOs can be used for sharing information. The women's groups could communicate with one another as well as elect representatives to lobby decision makers within government and donor agencies as well as bring their issues to the awareness of the general public.

The power of information

HARC (Himalayan Action Research Centre) works in the hill state of Uttarakhand in India. A key focus area of HARC's activities is information dissemination. For reaching information to its villages, it uses a variety of mechanisms such as self-help groups, women's groups etc. HARC has also trained one woman from each village as a village motivator. Information on new government schemes, policies, market information etc. is disseminated through village fairs, video films, pamphlets, posters, manuals and notices. HARC receives information from a variety of sources such as government departments, other NGOs etc on a regular basis, translates it into the local language, and presents it in a simple manner that can be comprehended by villagers.

The villagers, especially women in HARC area have responded very well to this strategy and benefited in a number of ways. In one case, in village Kotyal, after the women learnt (through HARC) that 30% of the funds under the *Jawahar Rozgar Yojana*, a government programme, can be utilized for women's programmes, they approached the *Sarpanch* (village head) for their rights on the fund. After a lot of deliberation, the women utilized the funds for constructing a *Mahila Panchayat Bhawan* (meeting place for women) and a *chari* (drinking water place for cattle). Earlier the women had to take the cattle to a far off location for drinking water. In another case, the women, armed with information on their rights, lobbied against a large farmer in their village who had encroached upon the village common, and was restricting the poorer women from collecting fodder from there and managed to evict him from the common land

Source: Dutta 2002

5.10 Enabling Policy Environment

For a gender focus to be applied to sustainable energy innovations in a systematic, effective and long-lasting way, institutional and governmental policies must reflect this priority. A favorable enabling policy environment and the support and coordination of local and national government institutions are critical to the successful introduction of new approaches to delivery of energy services, including 'engendering' energy policies. Such policies are relevant at least three levels:

- National level: At the national level, policy advocacy would essentially involve raising awareness of the need for gender-sensitive policies, both in the energy sector and in other sectors where energy inputs are particularly relevant,
- Organizational level: At an organizational level, the internal policies should ensure that internal operations and decision-making of implementing institutions are gender-sensitive in issues such as equal opportunity and pay, and participation in planning, decision-making and management.
- Project level: At the project level, organizations should review project criteria to ensure that gender is explicitly incorporated.

It may however be mentioned that the need for such policies is not unique to the energy sector, but gender sensitivity is certainly important in improving energy policies. Enhanced consultation with women and women's groups, and the inclusion of gender considerations in a broad range of sectoral policies, can improve the effectiveness of energy programmes as well as the ability to reach overall development goals. Policies to support the advancement of women and girls can be particularly important in reinforcing sustainable energy policies that target women.

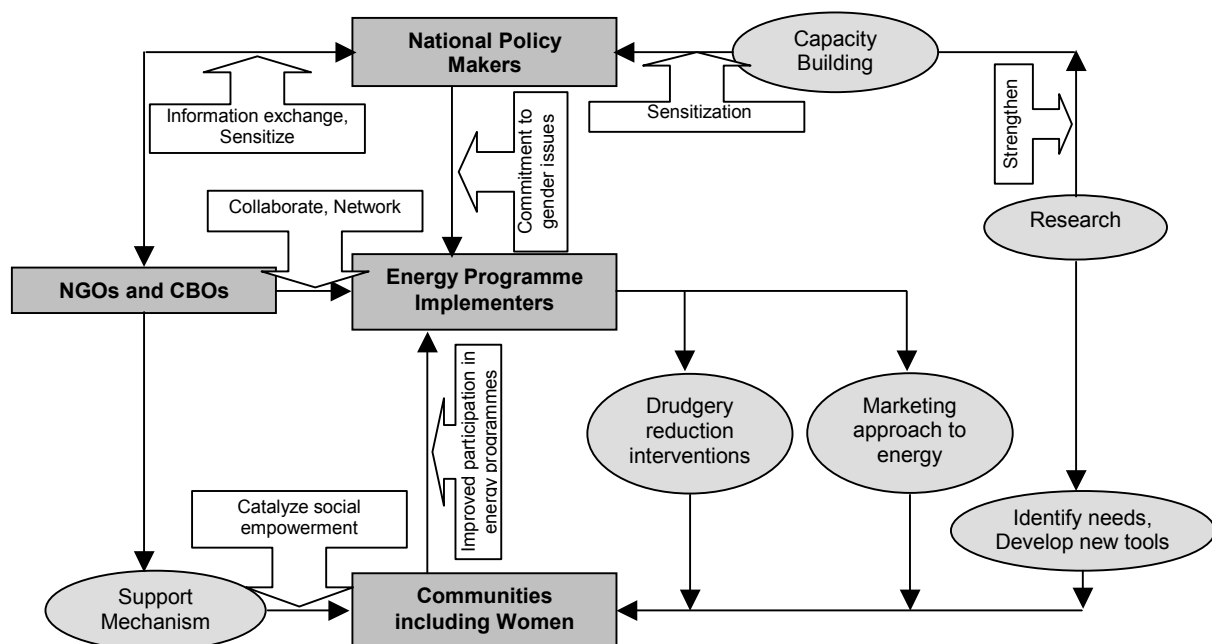
5.11 Legislations and Institutional Reforms

In the present set up, barriers like women's legal status, land-tenure opportunities, property rights, and access to public services and facilities, seriously limit their ability to take advantage of available opportunities. In such a situation, the impact of interventions can be sustainable only if they are accompanied with reforms in the institutional framework that provide women with rights to property and access to credit and training for enterprise development, as well as a reorientation in policies and programmes to make them more suited to the conditions of women entrepreneurs. In addition to policies to actively support gender equity, concerted efforts are needed in many countries to remove barriers, legal or otherwise, to the full participation of women in the development process.

6. 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 meaningfully 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. The following figure presents an overall framework for mainstreaming gender into energy policies.

Figure 3. Framework for Mainstreaming Gender into Energy Policies and Planning



Because access to modern energy services is so critical to the achievement of 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 in energy, and that women are often disproportionately affected by energy scarcities. Careful attention to these differing interests is 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 makes 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 to their families better, 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.

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