

*Part One*

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**Policies to Promote the  
Integration of Women  
in Water and Energy  
Management**

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# Women in Water, Energy, and Development

## Women and Development – The Global Context

An understanding of how women should be involved in development has evolved over time. During the 1970s when the fuelwood crisis was first recognised, women were regarded by some planners as the cause of the problem. By the beginning of the 1980s women were seen instead as victims of environmental degradation and deforestation, caused by a variety of factors including overpopulation and forest clearance for agriculture. Most recently the view has changed again, and women are seen as the saviours of the environment given their knowledge about it. As these views about women have changed, so have policies or approaches regarding women and development.

During the 1970s a great deal of literature was produced on ‘women in development’ (WID), which emphasised the participation of women for sustainable development. However, it was after the Earth Summit in 1992, during the UN Conference on Environment and Development, that there was a move towards international consensus on the importance of the role of women for sustainable development.

Later, during the United Nations Fourth World Conference on Women in Beijing (1995), more emphasis was given to the role of women in sustainable development and the need to promote the overall development of women. The conference declared that women throughout the world still continued to have fewer options and opportunities than men, with a few exceptions in the developed countries. The Beijing Platform for Action also gave more emphasis to mainstreaming gender in development followed by the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW). The Platform called on governments to support the development of equal access for women in all sectors. With regard to W&E, it emphasised the need for sustainable and affordable energy technologies and access to clean and safe drinking water for domestic purposes. More recently, the Millennium Development Goals (MDGs) stressed the need to reduce the proportion of people living in poverty by half by the year 2015. Of the 1.3 billion people who live in poverty, 70% are women. Women perform two thirds of the world’s work but earn one tenth of the world’s income (Clancy et al 2004). The MDGs give due emphasis to promoting gender equality and to empowering women (Goal 3) and to ensuring environmental sustainability (access to safe drinking water, Goal 7).

The type of approach taken in the women and development debate has implications for the W&E policy to be adopted and the interventions selected. Essentially, the debate started in the early 1970s within the ‘women in development’ (WID)

movement, with special emphasis on ‘women, environment, and development’ (WED); and has gradually developed into a gender and development (GAD) approach. The WID phase of the early 1970s brought to light the issue that in developing countries, the contribution of women to the labour force was not recognised in government censuses and national planning even though it was higher than that of men. During this phase, programmes mostly focused on increasing women’s income and productivity by improving their ability to manage household work. Starting from the welfare-oriented focus of WID in the 1970s, which aimed to help women with their practical needs, and the subsequent basic needs approach at the end of the 1970s, the most recent WID policy focus has been empowerment or autonomy for women – a return to the ideals of the equity movement of the 1970s to help women meet their strategic needs, not just their practical ones (see glossary for definitions of terms). Alongside these changes in the global attitude towards women, under the WED concept women are seen as natural custodians of nature. WED emphasises the special relationship between women and the environment and views women as bearers of special knowledge about nature who care for and nurture it.

The mid-1980s brought new thinking to WID programmes, changing the emphasis to gender and development (GAD), recognising that women must be seen relative to men. The gender perspective considers the division of work and the sharing of benefits between women and men, and is concerned with the redistribution of both the productive and reproductive activities within the household. The main difference between the GAD and WID concepts is that in GAD men and women are recognised as having different positions within the household. Because men hold the dominant position, they have access and control over resources. In other words the shift in thinking was from increased efficiency for women in meeting development goals, to greater equity and empowerment of women. This role and needs differentiation is the underlying rationale for gender analysis and planning for women as individuals in society in their own right.

## **Gender and Water**

Of all the crises humans face, the water crisis is the one that lies at the heart of our survival and that of our planet (CSD 2002). Giving the poor better access to better managed water can make a significant contribution to eradicating poverty (UN/WWAP 2003). Water is vital for energy production and meeting energy demands, hence it is vital for poverty reduction and sustainable development.

The International Conference on Water and the Environment (ICWE) in Dublin in 1992 set out four ‘Dublin Principles’, and these are still relevant today. The UN Conference on the Environment and Development (UNCED) in 1992 produced Agenda 21, which heralded the beginning of water management practices. Water was then placed at the centre of the sustainable development debate. Linking with environmental issues, Agenda 21 addressed women, water, and energy and emphasised choice of technology, upgrading technology, and building energy institutions – with less focus on the human aspects (UNCED 1992).

The Second World Water Forum in The Hague in 2000, and the International Conference on Freshwater in Bonn in 2001 continued this process, setting targets for improvements in water management. However, the UN Summit of 2000, which set the Millennium Development Goals for 2015, remains the most influential. While MDG 7 focuses on water alone, it is widely recognised that not all the MDG targets can be achieved without adequate and equitable access to W&E. More recently, the United Nations General Assembly declared 2005-2015 as the 'International Water for Life' decade.

The notion of integrated water resources management is currently high on the international policy-making agenda. Despite several efforts, the water crisis is getting worse, affecting the everyday lives of poor people, especially women. The water crisis is recognised as essentially a crisis of effective governance that requires participation by all stakeholders, transparency, equity, accountability, coherence, responsiveness, integration, and ethical issues to address it. Community-based delivery systems – including user associations, NGOs, and local communities – have considerable potential. Their local knowledge and networks are key assets for effective and equitable service delivery, but they often lack funds, institutional capacity, have limited membership, and often face difficulties in replication and in the scaling up of good practice.

At present, 1.1 billion people lack access to an improved water supply and 2.4 billion to improved sanitation. Asia shows the highest number of people not served by water supply (65%) or sanitation (80%) (WHO/UNICEF 2002). Those who have no access to improved water supply have to rely on potentially unsafe water from rivers, ponds, unprotected wells, or water vendors. People generally satisfy their basic needs for water if the source can be reached in a round trip of 30 minutes or less. If the time taken is more than 30 minutes, people typically haul less water than they need to meet their basic requirements. Water-related diseases are among the most common causes of illness and death, affecting mainly the poor in developing countries. Worldwide, over 2 billion people are infected with water-related diseases (WHO/UNICEF 2002).

## Gender and Energy

There are two different views on why a gender approach should be taken in planning: the 'efficiency' and the 'equity' points of view. The efficiency point of view does not necessarily advocate changing the status quo, but argues that project planners need to understand the differences between men's and women's needs, wants, potentials, and constraints in order to maximise project efficiency. The equity point of view starts from the assumption that women are not just different from men in their gender roles, but that they are in a weaker position socially and economically which must be changed through the empowerment of women. The purpose of applying gender analysis in the equity approach is not just to meet the practical needs of women but also to help them meet their strategic needs and to increase their power. Box 1 shows how different forms of energy can address the practical, productive, and strategic needs of women.

**Box 1: Meeting Women's Needs through Water and Energy Interventions**

Energy and Water	Women's Needs		
	Practical	Productive	Strategic
Improved biomass supply and conversion technology for processed energy, e.g., briquettes	<ul style="list-style-type: none"> <li>Less time and effort (drudgery) in gathering and carrying firewood and cooking</li> <li>Better health through ICS and other renewables</li> </ul>	<ul style="list-style-type: none"> <li>Productive activities</li> <li>Lower cost of process heat for IG activities (e.g. ICS, solar dryers)</li> </ul>	<ul style="list-style-type: none"> <li>Control of natural forests in community forest management framework</li> </ul>
Biogas	<ul style="list-style-type: none"> <li>Cooking, boiling water and many other household activities</li> </ul>	<ul style="list-style-type: none"> <li>Food processing and other IG activities</li> </ul>	<ul style="list-style-type: none"> <li>Time saving and access to commercial and social/political opportunities</li> </ul>
Solar	<ul style="list-style-type: none"> <li>Better lighting improves working conditions, boiling water and space heating</li> </ul>	<ul style="list-style-type: none"> <li>Micro enterprises like food processing and other IG activities</li> </ul>	<ul style="list-style-type: none"> <li>Time saving and access to commercial and social/political opportunities</li> </ul>
LPG	<ul style="list-style-type: none"> <li>Cooking, boiling water</li> </ul>	<ul style="list-style-type: none"> <li>Food processing and other IG activities</li> </ul>	<ul style="list-style-type: none"> <li>Time saving and access to commercial and social/political opportunities</li> </ul>
Electricity	<ul style="list-style-type: none"> <li>Pumping water: reducing need to haul and carry</li> <li>Mills for grinding</li> <li>Lighting improves working conditions at home</li> </ul>	<ul style="list-style-type: none"> <li>Increase possibility of activities during evening hours</li> <li>Power for specialised enterprises</li> </ul>	<ul style="list-style-type: none"> <li>Make streets safer: increase participation in other activities (NFE, group meetings etc.)</li> <li>Open horizons through radio, TV and Internet</li> </ul>
Improved water services and technologies	<ul style="list-style-type: none"> <li>Less time and effort (drudgery) in collecting water</li> <li>Better health and hygiene through clean water</li> </ul>	<ul style="list-style-type: none"> <li>More time for productive activities</li> <li>Drip and sprinkle irrigation for IG activities</li> </ul>	<ul style="list-style-type: none"> <li>Community managed water system</li> </ul>

Source: Adapted from Clancy and Skutsch, 2003

ICS = improved cook stove; IG = income generating; NFE = non formal education

Under the efficiency approach, the gender-sensitive planning method involves, a) increased attention to gender through consultation; b) systematic collection of gender-based data; c) acknowledgement of specific gender interests; d) identification of gender priorities, and looking for duality in solutions. This approach therefore implies that it is the job of the planner not the beneficiaries to find a solution that benefits both men and women in some way, often termed 'duality' (Skutsch 1997).

Under the equity-led approach, the same efficiency-led planning methods are further extended and strengthened to move towards greater gender equity in energy planning through: a) problem identification by the women not by the planner; b) incorporation of gender strategic interests into goal statements; c) an increase in women's participation in decision making; d) positive discrimination in resource allocation; and e) increased presence of women in the energy profession.

Most energy planners find themselves between these two extreme positions. The gender approach in energy planning often starts from an efficiency viewpoint because it recognises that this is a better way to help women overcome their immediate energy problems. In most cases, it is also easier to implement. The equity approach can build

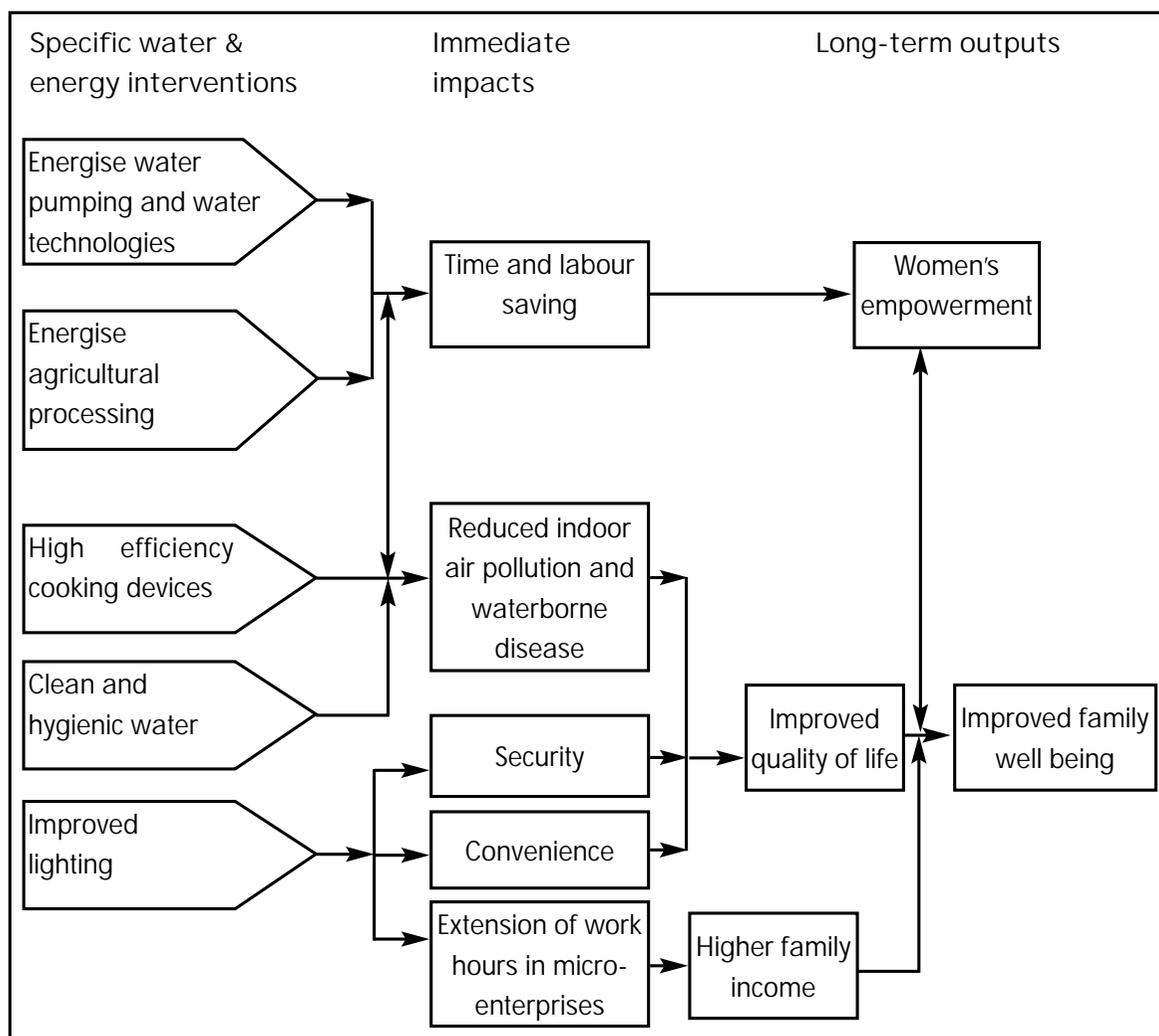
on the successes of the efficiency approach where the implementing agency is really aiming at meeting their strategic need of longer-term empowerment.

The ‘Incorporating Needs and Roles of Women in Water and Energy Management in Rural Areas in South Asia’ project whose results provide the basis for this publication recognised the need to understand gender differences, and sought to empower women through building their individual and collective capabilities to organise themselves to plan, manage, implement, and monitor W&E projects. It aimed to meet strategic needs through bottom-up mobilisation around practical gender needs. As women become more involved, they may become more articulate and experienced; gender-sensitive, bottom-up project planning can lead development of to a greater level of emancipation and empowerment for women in a more natural way.

Another on-going debate is about whether programmes aimed at helping women should be mainstreamed or whether separate programmes should be set up for women (‘women-only’ projects). Mainstreaming of women in projects means that all projects should try to encourage the participation of women as well as men so that benefits accrue to both women and men. The idea of ‘women only’ projects on the other hand follows from the growing understanding that many mainstreaming interventions have done harm to women while benefiting men and that the notion of positive discrimination in favour of women, to overcome the obstacles that have prevented women participating in the past, is rarely seen in practice. There are advantages and disadvantages to both approaches. Mainstreaming often does not work because women may not be in a position to participate (too heavy a workload already, no experience in making financial decisions, entrenched gender taboos against participation). On the other hand, women-alone projects may be strongly opposed by the men in a society, who not infrequently feel the emancipation of women to be threatening (Skutsch 1997). However, given the entrenched cultural norms and male dominance over social and economic resources, the effort to identify and redress the gender imbalance has to be focused on women, even when the policy is concerned with gender equality. It is not a question of doing something for women only because they are women, but because if something benefits women it benefits the whole family, the community, and future generations (see Figure 1). A ‘women-centric’ empowering approach can serve as an effective and perhaps essential first step to devising a successful gender mainstreaming strategy for achieving the goal of gender equality in the long run (Sharma and Banskota 2004).

## Regional Context

Women in most parts of South Asia suffer from acute poverty and various hardships. There are numerous sociocultural barriers that often restrict access to education and health, among other things. With increasing deforestation, both water and fuelwood are becoming scarcer and women have to walk longer hours to fetch these resources. This situation is particularly evident in the Himalayan region where excessive drudgery performed by women for subsistence alone is twice as much as for men. In some areas women work up to 16 hours a day (Gurung 1999). With the increasing deterioration of the natural resources in the Himalayan region, the life of people in general, and women and children in particular, is even more stressed. The status of



**Figure 1: Multiplier effects of women-oriented water and energy interventions**

Source: Adapted from Dutta 2003

women depends on the flexibility of the social and cultural values of the larger communities they live in, despite the so-called equal benefits accorded to both men and women by their governments.

In general, women’s knowledge, skills, and experience in managing natural resources have not been integrated into development interventions in the mountains. Ignoring women and how they relate to the natural resource base has not only marginalised women, but traditional interventions have also missed out on a valuable repository of knowledge and information about the local environment.

The Himalayas are a large storehouse of freshwater and an important water tower for nearly 500 million people. Despite such huge water resources, women are finding it increasingly difficult to meet their water needs. The water supply problem in the mountains has already reached crisis proportions in many parts of the Himalayas as a result of poor precipitation and the drying up of local springs and other water sources (ICIMOD 2002). There is an urgent need to avert a crisis by introducing water harvesting, and collection and storage systems at the household and community

levels with the participation of local people, especially women. Women should be thought of as water users for productive purposes and not simply as managers of the domestic water supply.

Fuelwood is the main source of energy in the Himalayan region. This energy source is gathered generally from public and community forests. The growing population has put increased pressure on forest resources. In many places in the Himalayas, women have to walk considerable distances to fetch a load of fuelwood. Efforts have been made to manage energy demands, but such programmes have not been very successful. Poverty prohibits many people from affording alternative forms of energy, and biomass energy will continue to be the main source of rural household energy for many years to come.

Traditionally women play a key role in W&E management – in terms of collection and usage at the household level. Long experience has shown that it is essential for the sustainability of W&E programmes that an enabling environment be created for women by building their capacities so they can become actively involved in planning and decision making. Women must be seen as economic actors and resource managers. However, a new vision for W&E resource management from a gender perspective has yet to emerge.

Past experience in the region has shown that most of the W&E-related interventions have been sectoral in nature and have ended up weakening the linkages between the various sub-systems of the mountain economy. Further, these interventions (institutions and technological options) have not focused on women, despite women being the actual managers of W&E resources at the household level. Most of the interventions, whether technical or capacity building-related (training programmes and manuals), have ignored the needs and roles of women, contributing to the existing problem of environmental degradation and exploitation of biomass and water resources in an unsustainable manner for meeting daily household needs (UNEP 2002). A typical example is the failure to popularise the improved cooking stove (ICS) during the 1980s. The ICS did not gain recognition in the community because women were not consulted at any point in the programme (Cecelski 2000). The W&E manuals prepared for the application of selected technologies were mostly tailored to men, but the potential users of the technologies in practice were women.

The vast bulk of energy assistance goes to the formal sector. For example, over 50% of the energy budget of the Organisation for Economic Co-operation and Development (OECD) Development Assistance Committee is spent on conventional power projects, including thermal plants and hydroelectricity (OECD 1998), while the share of development assistance on alternative energy is less than 2% (Skutsch 1994b). Rural electrification by extension of the grid, which continues to be the largest energy programme in most countries, implicitly assumes that the benefits of electricity are gender neutral, which is not the case (Cecelski 2000). Furthermore, 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.

Apart from the technical and financial considerations, there are a large number of tasks which do not involve fuel, but which involve human energy, the larger part of which is women's energy, in carrying out physical tasks. These include the drudgery involved in fetching fuel and water, the transport of which mostly takes place away from the recognised transportation networks; the increase in female agricultural labour as a result of male migration; and food processing. This metabolic human energy (energy derived from the food we eat) is not included in the conventional national energy accounting system for developing programmes (Cecelski 1992).

# Gender-sensitive Water and Energy Policy Framework

## Conceptual Framework

Water and energy are not only the most essential resources for human survival, but are also critical factors for meeting social, economic, and environmental objectives (Rijal 1999). Gender-sensitive policy can be defined as policy that takes into account the social relation of women and men as well as differences in their roles and needs, as opposed to a policy that is either gender blind or gender neutral. It implies a policy that recognises existing divisions of labour between men and women and seeks to provide the W&E services that can reduce the burden on women's time as well as their physical burdens (practical needs); and thus expand educational and productive opportunities, opening new avenues for energy entrepreneurship and empowerment (productive and strategic needs). In the broadest sense, gender-sensitive policy is defined as encompassing the spirit of both gender-specific and transformative policies, which not only favour targeting activities and resources which women are likely to control or benefit from, but which also seek to transform existing gender relations by redistributing more evenly the division of resources, responsibilities, and power between women and men. It is often argued that gender redistribution is the politically more challenging option, because it does not simply seek to channel resources to women within the existing framework, but may require men to give up certain privileges and take on certain responsibilities in order to achieve greater equity in development outcomes (Kabeer 2003).

A gendered approach to rural W&E planning is justified on the following five grounds: (a) W&E needs at the household level are directly related to women's reproductive role and responsibility; (b) rural W&E has a greater impact on women's health and drudgery than on men's; (c) rural W&E projects have the potential to increase women's time to pursue social and economic activities and increase employment opportunities for rural women; d) W&E projects can contain management roles for women; e) women can contribute towards building social capital through their empowerment.

### Defining multidimensional aspects of gender-sensitive policy

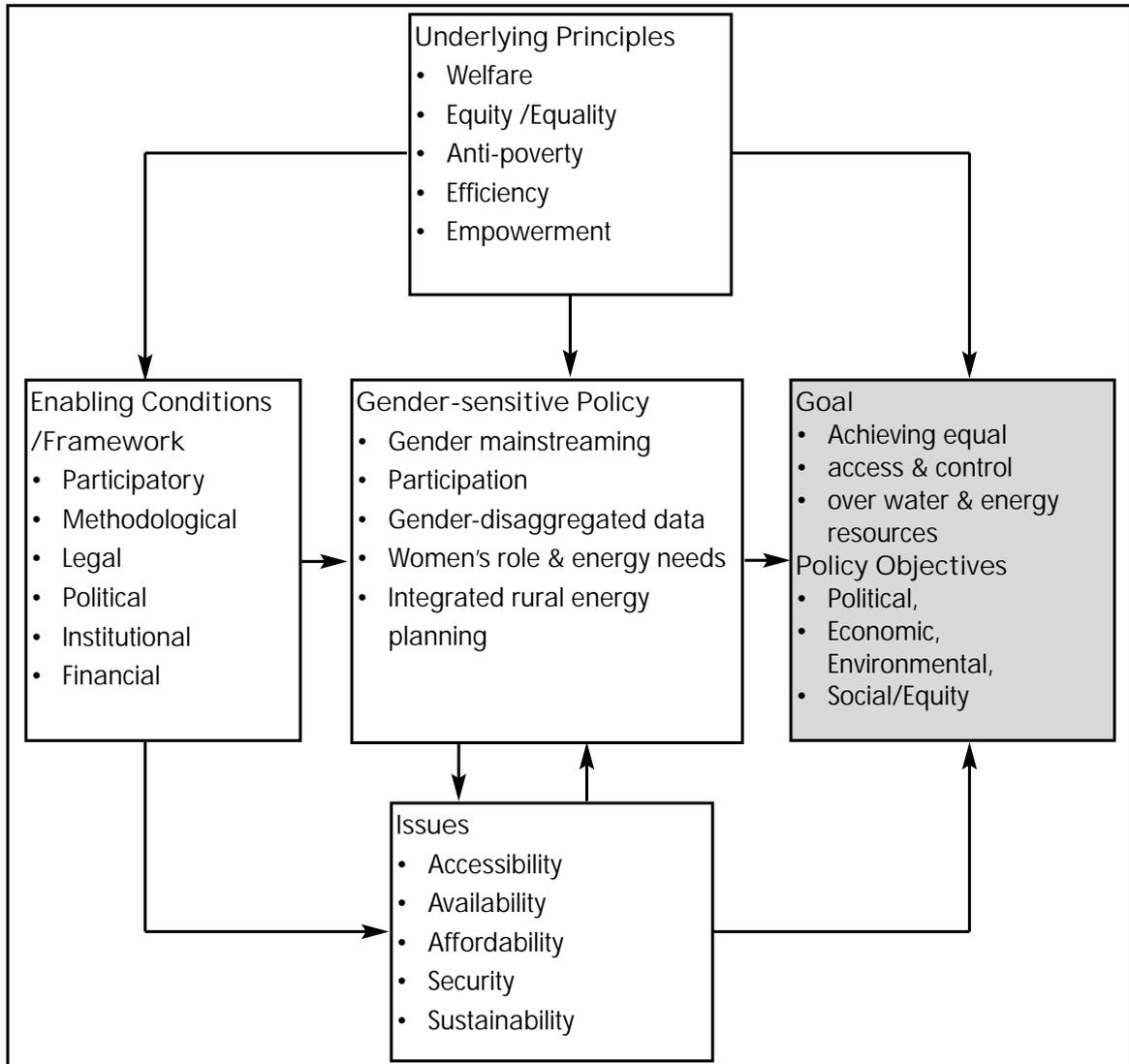
Achieving equal access and control over W&E resources should be the primary goal of gender-sensitive W&E policy. Like any sectoral policy, W&E policy formulated in line with an integrated planning approach should contain the political, economic, environmental, and social dimensions and aspects of policy objectives with each of these having a gender dimension.

- The political aspect relates to the way in which the provision of W&E services is planned and regulated in response to the demand of women and men and in response to the shortage or surplus of W&E supplies through political processes.
- The economic aspect involves the financial provisions needed to promote the implementation of gender mainstreaming in the W&E sector taking into account the differential impacts on men and women.
- The environmental aspect recognises that in many cases men and women are affected differently by health problems related to W&E use and production and that women are traditionally known to have played a key role in protecting and sustaining their environments and natural resources.
- Regarding the social/equity aspect, the availability of W&E services should reduce the inequalities between men and women by explicitly acknowledging women's triple role in society (reproductive, productive, and community), hence contributing to women's empowerment.

To achieve these four objectives, a gender sensitive policy framework in the context of W&E will have four broad aspects or processes: a) the underlying WID principles and approaches; b) the enabling conditions/framework required for realising these principles; c) critical elements/characteristics of the gender-sensitive W&E policy; and d) cross-cutting issues/factors that must be borne in mind while formulating such a policy (see Figure 2).

The first concern is to determine which approach or phase of WID such as welfare-oriented, basic needs-oriented, or efficiency-, equity-, or empowerment-oriented, (see glossary for details) will be used in interventions. Several stakeholders in the policy formulation process might participate with different (often conflicting) goals and objectives. For example, a government could focus more on the efficiency of the policy, the donor more on sustainability, and a women's organisation more on women's empowerment. The rationale behind distinguishing between objectives is to identify possible obstacles in terms of objectives that challenge practical or strategic needs. The approach and actions taken by a government in order to implement a gender-aware policy are determined by the principles and rationale it is following.

The second concern is that of the enabling conditions required for the integration of women in a national W&E policy. The government must have an enabling environment/framework for realising gender-sensitive policy. These include the existence of a participatory framework, a methodological framework (the institutionalisation of gender analytical tools and methods and the availability of gender-disaggregated data), a legal framework (strong position of gender issues in the constitution), a political framework (the existence of a national gender policy and its integration into W&E policy), and institutional and financial frameworks (gender-sensitive budgeting for the implementation of W&E policies and programmes). Full participation of the intended beneficiaries, including women, is crucial in all aspects of water and energy project identification, design, financing, mobilisation, implementation, and evaluation. Ensuring that all stakeholders are able to participate, however, may require special efforts, especially since women often are excluded from



**Figure 2: Framework for realising gender-sensitive policy**

Source: Adapted from Fenstra 2002

decision-making processes. Care should be taken to understand the specific responsibilities and constraints that keep women's voices from being heard.

Third a gender-sensitive W&E policy must contain as a minimum the following five key elements:

- gender-disaggregated data, which contributes to improving decision makers' knowledge on women's W&E use and demands;
- gender mainstreaming – a process to ensure that the concerns and needs of both women and men are considered in the policy-programme-action continuum;
- ensuring women's participation at the decision-making level to reflect their W&E demands;
- recognition of women's roles and needs in W&E provision made explicit in the policy; and
- integrated W&E planning (IWEP), which promotes a demand-driven approach towards W&E planning at the household and community level,

recognising multi-disciplinary policy objectives/aspects (political, social, economic, and environmental).

Finally it is important to bear in mind certain critical issues for the gender-sensitive promotion of any W&E technologies and services (Annecke 1999), as follows.

- **Accessibility:** intra-community and inter-household relationships (for example status, income, and age) influence access to W&E services.
- **Availability:** a variety of energy services should be available so that women and men can select according to their own needs/criteria.
- **Affordability:** for poor women and men, W&E choices are constrained by what they can afford.
- **Security:** availability of W&E in adequate amounts and personal security, ensuring a safe environment to collect water and wood and/or conduct business, minimising health impacts.
- **Sustainability:** the W&E services available should be sustainable over time.

These five critical issues (i.e., accessibility, availability, affordability, safety, and sustainability)<sup>1</sup> need to be correlated with the different dimensions of policy objectives (political, economic, environmental, and social) as stated earlier. A matrix as shown in Box 2 can be used as a tool to incorporate gender issues into the content of W&E policy. The matrix can be used as an evaluation and monitoring tool with the cells of the matrix being used as a checklist. The specific content in the cells will vary to reflect local circumstances. The matrix provides the process and constraints involved in the formulation and realisation of a gender-aware W&E policy.

## Confronting Barriers to Engendering W&E Policy

Confronting the existing policy, institutional and sociocultural barriers, and constraints is essential to mainstreaming women in W&E policy. For example, the practical and social constraints to incorporating women into W&E policies are a lack of ownership over resources, restrictions on participating in activities outside the home, lack of income, lack of education and access to knowledge and information sources, lack of opportunity to be involved in enterprises, and so on. The social status of women is the most significant factor that hinders women from effective participation in rural energy dissemination programmes. For instance, men have to be convinced of every expenditure for domestic energy interventions, while women are either excluded from the decision-making processes, or men have the final say in decisions that involve monetary outflows. Equally, women are conditioned by centuries of thinking about their children and families first, and are often unable to articulate – or even recognise – their own, women-specific, needs. Similarly, rural women are usually not provided with education and training and access to new innovations in rural energy interventions (Dutta 1998).

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<sup>1</sup> Considering that sustainability is captured by the four policy objectives and access is cross-cutting across the other issues, it may be possible to reduce these five elements to three: availability, affordability, and safety (Clancy and Feenstra 2005, unpublished report).

**Box 2: Gender Sensitive Water and Energy Policy Matrix**

Dimensions		Political	Economic	Environmental	Social Equity and Empowerment
Issues					
<b>Access</b>	<b>Availability</b>	Guaranteeing equal access and distribution of water and energy resources/ technologies to provide a wide choice of household energy forms and water	Pricing mechanism to encourage suppliers to supply technologies to meet household water and energy needs and priorities (e.g. subsidies for women groups, providing training and other support to women to establish energy and water entrepreneurship)	Promotion of the availability of clean water and renewable energy sources and technologies (e.g. incentives for developing household energy supplies around modern biomass forms and including incentives for sustainable water harvesting methods)	Equal distribution and access to water and energy services by involving women in policy decision making in the water and energy sector
	<b>Affordability</b>	Support mechanism to promote water and energy services that match women's incomes and cash flow (e.g. requirement for supplier to provide different size solar panels, biogas units, rainwater harvesting tanks etc.)	Pricing policy and credit mechanism should reflect women's income and cash flow (affordable upfront cost, comfortable lending rate, payment methods)	Mechanism to stimulate conservation of renewable energy sources and environmentally friendly and efficient technologies (e.g. credit mechanism for women to purchase renewable energy sources and technologies)	Subsidising water and energy services for the poor for pump priming and social equity
	<b>Safety/ drudgery reducing</b>	Legal provision for regulating unsafe energy and labour saving equipment for household use	Pricing/subsidy policy and tariffs encourage switch to clean, safer fuels and efficient water and energy technologies (e.g. traditional stoves to ICS, kerosene to LPG, biogas)	Promotion of non polluting water and energy technologies (e.g. awareness campaign on the benefits of ICS, and rainwater harvesting)	Promotion of personal safety of men and women in collecting and use of water and energy (e.g. awareness on water safety, hygiene and sanitation, street lighting in unsafe area, open water source to tap/closed water etc)
Source: Adapted from Clancy and Feenstra 2005 and UNDP 2004					

The barriers faced by women, particularly those from poor households, to achieving decent returns on their labour also include gender inequalities in nutrition, health, and skills. This results in gender inequalities in the productivity of labour; and gender inequalities in access to non-labour resources including land, equipment, finance, and infrastructure support. This leads to gender inequalities in women's capacity to generate a surplus; and gender inequalities in women's control over the disposition of their own labour. This in turn gives rise to various forms of allocation inefficiencies; and gender inequalities in relation to different forms of human capital and capabilities, reflecting gender discrimination in access to market opportunities.

Overcoming these barriers to mainstreaming women in the W&E policy planning process is both a technical and a political process, which requires a shift in organisational culture and ways of thinking; as well as in the goals, structures, and positive discrimination in resource allocation of international agencies, governments and NGOs. All these cannot be realised without placing women at the centre of national energy policies and overall poverty reduction strategies. This requires a substantial shift in policy and priorities to create a space for empowering women on all fronts to make their choices while at the same time ensuring the provision of drudgery-reducing technologies at an affordable price. It is essential to create an enabling policy environment (as discussed above) before developing a set of evidence-based policy directions.

## **Placing Women at the Centre of National Energy Policy and Overall Poverty-reduction Strategies**

Poverty reduction has been the central development challenge and objective in the region. However, achieving the global poverty reduction target is not possible without addressing the distinct W&E concerns of women through gender-sensitive policies and programmes. Experience suggests that addressing the W&E needs of women can make a significant difference in meeting this development challenge, including the MDGs (Box 3). Poverty in general – and rural poverty in particular – affects men and women differently, and women bear a disproportionate share of its hardships mainly because of their excessive workload and the drudgery involved in collecting water and fuelwood, and spending many hours each day preparing meals on traditional stoves in a smoky environment. The absence of modern energy has direct and significant consequences for women, ranging from serious health impacts from indoor pollution, to lost opportunities for self-improvement and family well being. Clearly, energy interventions are not only gender biased, but are also less effective for poverty reduction.

Women and their energy needs will have to be addressed specifically if poverty is to be reduced through energy. Women's energy needs will not be met until they have a 'voice' in determining their options and priorities. But while a well-integrated rural energy plan offering a bundle of services to move women out of energy poverty plays a key role in removing potentially binding constraints on poverty reduction strategies, the gender-sensitive energy policy is still the exception rather than the rule in the region.

<b>Box 3: Linking Project Impacts at Micro Level to the Millennium Development Goals and Targets</b>		
<b>Goal</b>	<b>Target</b>	<b>Linking Project Impacts to the MDGs</b>
<b>Goal 1: Eradicate extreme poverty and hunger</b>	Target 1: Reduce by half the proportion of people living on less than a dollar a day  Target 2: Reduce by half the proportion of people who suffer from hunger	<ul style="list-style-type: none"> <li>• After adoption of water and energy related technologies women are able to save several hours previously spent on collecting water and fuelwood. The time saved is used for income generating activities to increase income and improve family well-being</li> <li>• Use of new technologies improves farm productivity and diversifies rural income</li> <li>• Improved farm productivity enhances household income and nutrition of family members</li> </ul>
<b>Goal 2: Achieve universal primary education</b>	Target 3: Ensure that all boys and girls complete a full course of primary schooling	<ul style="list-style-type: none"> <li>• Access to efficient fuels and technologies frees up children's time, especially girls who are unable to attend school because they help with fetching wood, collecting water, and other domestic chores.</li> <li>• Income generated through use of improved water and energy technologies is used for children's education and well being</li> <li>• Solar lanterns permit children's to study at night in a less smoky environment (due to ICS)</li> </ul>
<b>Goal 3: Promote gender equality and empower women</b>	Target 4: Eliminate gender disparity in education	<ul style="list-style-type: none"> <li>• A decentralised water and energy system reduces the time and burden of fetching water and fuelwood, thereby enabling women and girls to use the time saved on education (adult literacy and schooling) and income earning activities (economic empowerment)</li> <li>• Solar lanterns permit women to use time productively even at night</li> <li>• Women's individualised (e.g adult literacy and training) and collective organisational capacity enhances their self esteem and self confidence to address their strategic needs (social empowerment), which in turn has strengthened women's decision making role at the household and community levels</li> <li>• Mobilisation of financial resources has allowed women to participate in community development activities</li> </ul>
<b>Goal 4: Reduce child mortality</b>	Target 5: Reduce by two thirds the mortality rate among children under five	<ul style="list-style-type: none"> <li>• Reduction of indoor air pollution and water borne diseases through the use of smokeless ICS and clean water reduces exposure to diseases and improves child health</li> <li>• Women have more time for child care as they spend less time on water and energy activities</li> <li>• Education helps to increase awareness of health, hygiene and sanitation issues</li> </ul>
<b>Goal 5: Improve maternal health</b>	Target 6: Reduce by three quarters the maternal mortality ratio	<ul style="list-style-type: none"> <li>• Reduction of excessive workloads and drudgery associated with carrying heavy loads of fuelwood and water have positive effects on women's health</li> <li>• Reduction of arduous and repetitive food processing tasks and cooking in a smoky environment improves women's health and well-being</li> <li>• Empowerment and increased incomes enhances awareness and access to health facilities</li> </ul>
<b>Goal 7: Ensure environmental sustainability</b>	Target 9: Reverse loss of environmental resources  Target 10: Reduce by half the proportion of people without sustainable access to safe drinking water	<ul style="list-style-type: none"> <li>• Rainwater harvesting through micro reservoirs recharges traditional water springs</li> <li>• Plantation ensures slope stability and retards soil erosion</li> <li>• Adoption of social fencing by women to control livestock grazing promotes healthy growth of trees and ground cover and promotes carbon sequestration and other environmental services</li> <li>• Availability of cleaner fuels and energy-efficient technologies reduces demand for fuelwood, increases availability of dung and agricultural wastes for fertiliser, and reduces air pollution and greenhouse gas emissions</li> </ul>

Women's energy needs have been left out of the existing supply-driven energy planning paradigm. A substantial shift is called for in policy and priority through placing the W&E needs of women at the centre of the overall poverty reduction strategy. This will be the surest way to harness the full range of women's potential, transforming women from passive recipients of welfare to active participants in development. This is consistent with the attainment of social equity, national productivity, and fuller utilisation of the human resource capability. Just as environmental impact assessments (EIAs) are compulsory for all project proposals, so is it important to apply gender analysis as a filter through which all project proposals should go before approval to assure some degree of equity, even if projects are not deliberately designed with gender as a primary concern.

## **Removing the Information Barrier**

Because of massive illiteracy and a low level of awareness, often compounded by inaccessibility in the rural mountains, most people in rural areas (especially women) still do not know about W&E technologies already on the market elsewhere. When they do learn about them, they do not have adequate information on their performance, limitations, and costs, and so they tend to maintain their traditional systems even when new, more convenient ones are available. For example, after some training in drip irrigation, women in Bhutan did not pursue this technology as they thought it was beyond their reach financially, which was not the case.

Governments can play an important role in overcoming this information barrier through supporting national promotional awareness campaigns, so as to make people aware of sustainable W&E alternatives for enhancing livelihoods. Lessons from the project experience in Nepal suggest that the targeting of such a campaign to educational institutions (schools) in collaboration with NGOs and the rural development network can be an effective way of reaching a larger stratum of the rural population with information about the options offered by renewable energy technologies and their environmental aspects.

Demonstration is equally crucial, because seeing is believing for many rural women. Experience further suggests that the exposure visit to a technology demonstration site can be instrumental in overcoming entrenched cultural norms and practices that act as a deterrent to the adoption of new technologies. The concept of the technology demonstration village, such as the one established at project sites in Nepal, is effective as a model for other inaccessible mountain regions for speeding up the technology transfer/dissemination process. The demand for this type of technology demonstration was found to be very high; many women from other villages in the district benefited from seeing the field-tested, drudgery-reducing, and profitable technology in actual operation. Governments need to promote demonstration projects as a means of disseminating information, as part of a scheme to create the appropriate conditions for the diffusion of sustainable W&E systems carried on by market forces.

The information barrier also works in the other direction, towards the government, because of the insufficient base of knowledge available to governments and other decision makers in the field of W&E. Policy makers and planners often have to make decisions without having enough hard data on renewable energy through the gender lens. For example, solar radiation maps, and data on time and space distribution of wind regimes, quantities of biomass residues available for energy production, potential for energy from forestry and for energy crops, and so on are rare, and when they exist generally inadequate. The lack of gender-disaggregated data in the W&E sector further limits the scope for developing gender-sensitive policies and programmes. Even less is known about what is necessary to assess a market's potential: how ready people are to pay for energy services, what are their priorities, who takes the decisions at the various levels (including the household) on the implementation of new energy schemes, and what is the availability of certain items on the market. Experience suggests that rural W&E projects have more possibility of success when participatory appraisal methods are included as integral parts of W&E programmes, and when women are directly involved in the decision-making process.





# Towards Gender-sensitive Policies

The lessons learned from the pilot project experience, together with the review of country-specific national policies and programmes, which are summarised in more detail in Part 2, have a number of policy implications for developing programmes that are environmentally friendly and pro-women, especially in the rural settings of the Himalayan region. Suggested below are the major evidence-based policy directions that are deemed important for incorporating the roles and needs of women in W&E management practice in any attempt to design and implement gender-sensitive policies and programmes.

## Supporting Renewable Energy and Water Needs at the Household Level

Policy makers and planners have long treated energy projects as gender neutral, based on the assumption that energy bottlenecks and solutions impact men and women in similar ways. In most countries this does not reflect reality, as men and women have different needs and they use and benefit from water and energy services differently (Skutsch 1997; Clancy, Oparacocha, and Roehr 2004). For example, a major focus of energy planning in the rural areas of the three project countries, as in many developing countries, has been on increasing the supplies of grid electricity or forms of commercial energy – especially for industrial and urban use – with little or no attention paid to the characteristics of women’s energy demands, especially in underserved rural areas. These commercial forms of energy meet lighting, entertainment, and similar needs, but are unable to meet the cooking, space heating, and other energy service needs of the majority of the rural population, particularly the women. While modern energy services may be the preferred choice, biomass will continue to remain the main source of rural household energy for many years to come. Since cooking is the single largest rural energy end use, women’s energy needs will remain largely unaddressed if cooking needs and issues related to the efficient use of biomass are not tackled. The affordability of commercial energy forms is low in rural areas as a result of the high incidence of poverty.

Household energy is usually taken as synonymous with cooking fuel, but there are a whole range of energy-demanding tasks on which the household is dependent for its survival, such as water provision and food processing. Since the responsibility of meeting the household water needs as well as other practical needs for immediate survival generally lies with women, the time taken up in and the drudgery involved with meeting these needs should be reduced by the application of modern energy forms and appropriate technologies. However, these are neglected areas of household energy. As a result, rural women have benefited little from past gender-

neutral W&E interventions. Experience shows that approaches that favour demand-side (roles and needs) considerations rather than supply-side targets are more likely to positively reflect women's actual needs. As a starting point for gender-sensitive W&E planning, it is important to identify the W&E services that are of primary importance to women and to consider options for providing these services.

Women and children in our study areas travelled on average 3-4 hours a day to collect fuelwood and water (see Part 2). In rural areas biomass provides the most secured source of energy despite a high occurrence of deforestation in many parts of the Himalayas. As a result, W&E policy should focus on facilitating women's access not only to biomass fuel and water, but also to different forms of technologies that help reduce drudgery and save time spent on energy- and water-related activities. Experience from the pilot project shows that W&E interventions using appropriate technologies based on the prioritised needs of women can help women reduce drudgery and save up to 60% of the time they would usually take in these activities. The productive use of time saved from water- and energy -related activities has also helped women earn an income. During the ToT and exposure visits, women were instrumental in helping other women select W&E-related technologies. The selection of technology varied, reflecting the roles and needs of women across the Himalayas. The study results also indicate other emerging benefits such as those related to improved health, children being able to study in a smokeless kitchen environment with their mothers, and so on.

### **Suggested actions to address renewable energy and water needs at the household level**

- Carry out a needs assessment to understand the roles and needs of women in W&E using a PRA approach, and develop baseline information to monitor and measure project impacts
- Build awareness about the different energy needs of men and women among policy makers by establishing gender-disaggregated data and impacts
- Prioritise the W&E needs of women as an entry point for enhancing their real participation in W&E-related activities
- Prioritise technological interventions to address women's practical, productive, and strategic needs
- Establish support mechanisms to enhance women's productive and strategic needs

### **Addressing Gender Differences in Energy- and Water-related Interventions**

Rural energy programmes are often based on the premise that fuel saving is the chief concern of women with little attention paid to other benefits which are more valued by women such as time saving, drudgery reduction, and productive use of time (Skutsch 1997; Dutta 1997, 2003). As a result, the impact of renewable water and energy is inequitably distributed, and does not properly address the heavy workload and reduction of the drudgery faced by women and the widening of their options for productive use of saved time. Women's role in the collection and use of traditional fuels is invisible in energy statistics (Skutsch 1997). One way to make the relationship

between women and energy visible is by applying gender analysis to generate gender-disaggregated data to identify gender-specific activities and needs (see Box 4). This understanding of who actually does what, and who has access to, who controls, and who owns which resources, is important as a tool for gender sensitisation and formulation and for programme design. It is necessary to generate and analyse gender-disaggregated data so that policy makers can have appropriate data to take action to overcome unequal gender relations. Clearly, an understanding of the priorities and preferences of the different stakeholders in the rural energy sector can go a long way to designing appropriate delivery systems for technology innovations (Dutta 1997).

**Box 4: A Summary of Gender Analytical Tools**

	<b>Harvard Analytical Framework</b>	<b>Gender Analysis Matrix (GAM)</b>	<b>Forcefield Analysis</b>	<b>Capacities and Vulnerabilities Analysis</b>	<b>Gender Needs Assessment</b>
<b>Focus</b>	Focuses on improving the efficiency of projects and improving overall productivity	Used by grassroots workers to determine the impacts of an intervention on men and women	Tool for analysing 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 distinguishes whether these will meet the strategic or practical needs of women
<b>Key Components</b>	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; listing actions that can reduce the restraining forces and steps for solving the problem	Uses a matrix format to identify physical, material, social organisational, motivational or attitudinal capacities and vulnerabilities of men and women	Assesses how and to what extent the project activities address the practical needs of women; and also their strategic needs
<b>Strengths</b>	Systematic, easy to understand, and flexible	Easy to understand and carry out; involves groups	Provides a framework for analysing complex problems; goal oriented	Explicitly covers organisational/ institutional assessment	Can be used for policy as well as project analysis; clearly exposes the project goals in terms of benefits to women
<b>Limitations</b>	Is descriptive and not goal oriented; does not look at needs	Gives little data for later analysis; is 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
Note: Adapted from Skutsch 1997					

Project experience shows that the division of tasks amongst men and women in household W&E management are similar in all three of the Himalayan countries studied, with women shouldering the main responsibility for managing the household water and energy needs, and playing a key role as the collectors, processors, and users of biomass fuels. While women are engaged for about six hours daily in W&E-related activities men spend approximately one tenth of this time on such tasks. Experience based on PRA tools used in the three countries shows distinct gender roles, needs, and interests. Household work such as cooking, cleaning, fetching fuelwood and water, rearing children, and looking after the household are almost purely women's work. Although Bhutan is a matriarchal society, the condition of women there is no different from that in India and Nepal. In Bhutan there is also a lack of institutionalisation of gender analysis tools to address gender issues as a basis for incorporating them into the mainstream programmes.

### **Suggested actions to address gender differences**

- Conduct baseline and needs assessment surveys to establish gender-disaggregated data at all levels in order to understand gender-based needs, constraints to participation, ability to participate, and different benefits from participation.
- Conduct gender analysis to discover the needs and roles of women and men in the W&E sector.
- Raise awareness about the need for gender analysis in energy planning, and integrate these tools into the W&E planning process.
- Conduct an analysis of how W&E policy affects women and men differently.
- Conduct gender sensitisation training for women and men at all levels (policy, planning, and implementation).
- Explore local opportunities for income generation that can be readily linked with improved W&E technologies.
- Establish gender-sensitive baseline indicators against which to assess the impact of interventions.

### **Promoting Drudgery-reducing Technologies**

The failure in the past to address women's workload and the drudgery involved in collecting water and fuelwood has limited the full participation of women in most development processes. Giving priority to drudgery-reduction technologies as an entry point for interventions can be the first step in engendering W&E projects and empowering women. Factors related to women's status, their role and division within families, ease in adoption, usage, and social acceptance of the technology are the determining factors for the choice of technology.

The status of women within the household can be a determining factor for technology adoption (Venkateswaran 1995). In situations where the man controls the household cash and the woman has no opportunity to earn extra income, the decision maker, i.e., the man, may not see the need to spend cash on improved technologies. Likewise, men do often not consider leisure time for women important, so they will not spend cash to reduce women's working hours. In contrast, in areas where there

are opportunities for women to earn an income, it has been observed, for example, that fuel-saving cooking stoves (which also save time) are being adopted more readily.

Ignoring the differences in roles and responsibilities of men and women can lead to ineffective and even adverse interventions. At times, new technologies have displaced women from their traditional areas of employment, while leaving the activities where women predominate untouched, as in the subsistence sector. One such example is the mechanised grain processing mills, which employ only male labour, displacing the women who earlier carried out such tasks (Vekateswaran 1995).

In general, women desire simple technologies that they can understand and that can be put into practice with local materials and with minimum external inputs (ICIMOD 1995). Specifically, women want technologies that (a) reduce their time and labour inputs into subsistence activities; (b) help increase the availability of biomass for fodder and fuelwood; and (c) offer multiple use products. For example, apples are a preferred horticultural crop because besides providing fruit for home consumption and sale, apple prunings make good firewood.

In many rural areas, the acceptance and popularity of any technology by rural women is socially administered by the male head of the household (Hafeez 1998). Gender sensitisation is an essential process, as followed in this project, to address the acceptance of the new technologies by men.

Women in the present project's sites in India and Nepal adopted ICS mainly because the women themselves were involved in the design and training programme and the women's group selected the women promoters. In India, women preferred ICS with water heating facilities, while in Bhutan women did not opt for ICS, as it did not suit their lifestyle. In both the project sites in Nepal (Dhankuta and Palpa), women replaced their traditional stoves with ICS. Women were also provided training in making and repairing the ICS and other technologies they adopted. The technologies selected by women were also affordable. In Bhutan women quickly perceived the benefits of the solar dryer as it helped preserve food in a cheap and hygienic manner. Realising these benefits, women in Bhutan have established a commercial venture to manufacture solar dryers for sale to other women who are not members of their group. The women are also managing an LPG gas depot to sell gas cylinders not only to women from their group but also to the entire larger village community. In Nepal too, women are using solar dryers to dry fruit for sale in the market. The widespread use of drip irrigation systems at both sites in Nepal also clearly indicates how women are able to use new technologies to not only reduce drudgery but also to earn an income, in this case by cultivating and selling vegetables, once they are able to save time from W&E related activities.

Adapting technology to meet local conditions requires such things as making equipment/technologies more reliable, resistant to the local environment, low cost, possible to make with local skills, instruments, and materials, and adapted to the specific requirements and habits of the users. Governments should set up

autonomous R&D institutions for the promotion of women-friendly and environmentally benign rural technologies. Such institutions, when strictly connected with local realities, can serve as powerful instruments for change.

Technological intervention must be supported with the necessary wherewithal for women to be able to repair, maintain, and get support for the technologies. The presence of local NGOs and accessible ToT sessions for women within the same location all helped to build confidence in the technology.

### **Suggested actions to promote drudgery-reducing technologies**

- Generate awareness and sensitise men and women to the benefits of the different technologies.
- Conduct social/community mobilisation programmes for better acceptance of the programme.
- Expose women to different W&E technologies that are practical and affordable to rural women and are women-friendly (drudgery reducing) to identify their prioritised needs.
- Conduct demonstration programmes that show women the tangible benefits of the technologies by establishing village technology demonstration centres.
- Allocate sufficient funds for R&D on low cost, labour saving, energy efficient home technologies for reducing women's housework.

### **Policy Focus on Mitigating Negative Impacts on Health**

Most energy interventions in the past have focused on energy saving with little or no attention to mitigating negative health impacts. Since biomass fuels are the major source of all household fuel consumption, mostly for cooking done primarily by women, women are exposed to high levels of indoor air pollution leading to acute respiratory infections, chronic obstructive lung disease, low birthweight, lung cancer, and eye problems (Wickramasinghe 2003). The problem is further compounded by water-related diseases resulting from unacceptable quality and inadequate quantity of water in rural areas. Women, as they walk long distances to collect fuelwood, also suffer frequent falls, bone fractures, fatigue, and miscarriages, caused by carrying fuelwood often weighing 50 to 70 kg – almost equal to their own body weight.

National policies that diversify women's choices of household energy sources and promote access to clean water and fuels, as well as more efficient cooking equipment, can have significant benefits in terms of the health of women and children, thereby contributing to a number of MDG targets. This requires not only appropriate energy policies, but also cross-sectoral coordination among concerned entities, such as ministries of health and the environment.

In many rural households and communities, people often have very limited information on the serious health hazards associated with the use of biomass fuel in traditional cooking stoves, and with water-related diseases. Overcoming the information barriers to the introduction of and demand for new technology options, such as improved cooking stoves as well as modern fuels, would allow people to

make their own choices out of a range of possible options. Experience from the pilot project in Bhutan, India, and Nepal shows that women have realised a number of health benefits from the installation of improved cooking stoves (integrated with kitchen management and sanitation, especially in Nepal) and improved access to safe drinking water (infiltration wells, rainwater harvesting, piped drinking water, and so on).

### **Suggested actions to mitigate negative health effects**

- Design and support kitchen management and sanitation as an integral component of W&E intervention at the household and community level.
- Build an awareness campaign on the adverse health impacts of indoor air pollution and poor sanitation.
- Establish cross-sectoral coordination with the ministries of health and environment to design policies for mitigating the negative impacts on health of burning biomass for cooking and of collecting fuelwood.

### **Promoting Income Generating Activities**

For the sustainable adoption of new technologies, women must be able to afford the repair and maintenance cost of the new technologies and must also be able to use the time saved through the adoption of new technologies in a productive way to generate income. Women at all the project sites suffered from economic hardship. Suitable W&E interventions that address women's roles and needs also provide new avenues to alleviate poverty in rural areas. This is an important issue, since rural women often lack control over land resources (a primary asset in rural areas) and do not have cash incomes. In Bhutan women possess land rights (which pass from mother to daughter) but the use and decisions related to land and property are made only by men, as women do not participate in public affairs. When W&E interventions are also supplemented with small income generating activities, women become economically empowered. Providing additional sources of income generation also improves the chance that the new technologies will be adopted, by increasing the purchasing power of women through higher disposable incomes.

A variety of income generating activities were also initiated by the project to enhance the productive use of women's saved time. Women adopted different income generating options at different sites. In Nepal, women adopted vegetable farming using drip irrigation systems not only to supplement their incomes but also to enhance the quality of family meals. They also purchased beehives after the one-week training that was provided to them. In India, women also cultivated vegetables using rainwater harvesting systems. In Bhutan, women adopted solar dryers and earned an income from the sale of dried fruit, and from the sale of solar dryers themselves and of LPG. Women in India opted for training in sewing, and while not all the women who received the training were able to earn a direct income, the skills acquired enabled them to stitch some of their own clothes and save money which would otherwise have been paid to a tailor.

Women have been able to demonstrate their ability to save as a group, and to use these savings to lend money to other members of their group on terms and conditions that they themselves decide; and to borrow from formal credit institutions by relying on their individual and joint liability as a basis for collateral. Credit facilities made available through banks and from self-help groups have also helped improve access to new technologies. The women's group savings increased in the short period of the project implementation and is being used to start income generating activities, procure technologies, and for community development. The women's group in Dhankuta is registering itself as a cooperative. In Nepal, one of the women connected her house to grid electricity, investing the Rs. 10,000 that she earned as a result of the project. In India, a link was established with a bank using group funds as collateral for accessing formal credit. In Bhutan a community fund was established to help meet the credit needs of women for IGAs.

### **Suggested actions to promote IGAs**

- Integrate access to W&E technologies and finance (revolving fund, banks, micro-finance) for the promotion of income generation, which helps to improve women's socioeconomic status.
- Provide training on income generating activities to enable women to use the time saved from the adoption of renewable W&E technologies.
- Assess the marketability of products, in terms of quality, affordability, and competing alternatives during the project design phase.
- Incorporate business training and market development approaches to make the energy entrepreneurship or micro-enterprise/business activities viable over the long term.

### **Promoting Women as Energy Entrepreneurs**

Women should not only be seen as passive users and consumers of renewable energy, but also as good candidates for becoming successful energy entrepreneurs provided an enabling environment is created. Energy policies that support the development of entrepreneurial energy activities involving women can achieve positive impacts beyond the energy sector. Encouraging women to become energy entrepreneurs has multiple benefits, including the advancement of women, the expansion of economic activities, the diversification of productive options, and the creation of new sources of income to support family investment in education and health, among other things. Promoting women as energy entrepreneurs through technical training to successfully own and run businesses will also be an effective way to upscale the wood-saving stoves in the region.

Lessons from the pilot experience in Nepal and Bhutan reveal that when provided with appropriate training and support, women prove themselves capable of operating and also constructing renewable energy technologies on their own. A key factor appears to be the ability of the renewable energy source to generate income for the users. For example, women ICS promoters in Nepal trained by the project in producing, distributing, and installing the stoves are able to sell more stoves effectively to other women both within and outside the project areas, as their access to potential

female clients is not hindered by social constraints. The profit generated by the stoves is comparable to wages in rural areas. The benefits to men and women in the project areas include improved health and time savings for users of the energy-efficient stoves, as well as relief from pressures caused by fuelwood shortage. These women have gained in status, self-confidence, and financial independence, thereby enhancing their economic empowerment. Women in Bhutan are also emerging as energy entrepreneurs with the establishment of the solar dryer production venture and LPG depot in the project sites. As rural women's groups in Bhutan (Limukha sites) were found to be more interested in solar dryers for income generation than for food security, women were trained to construct and sell a solar dryer to the group. Likewise at the Phobjikha project site, women energy entrepreneurs have set up an LPG depot. All these provide important lessons that the enterprise-based approach of W&E management with the active participation of women in decision making, and access and control over programmes for capability building, is vital for the economic empowerment of women. This shows that women are not only the victims of W&E scarcity, and the potential beneficiaries of W&E interventions, but that they are also already managers of W&E-intensive micro-enterprises in the informal sector. Experience suggests that women entrepreneurs are more averse to taking risks than men. This means that women need more support to adopt new technologies, taking into account the realities.

### **Suggested actions to promote women as energy entrepreneurs**

- Support the implementation of enterprise awareness, general entrepreneurship and business advice, and technical skills training.
- Assess the feasibility of energy-intensive, micro-enterprise development with strong backwards and forwards linkages based on the comparative advantages of the areas.
- Support for market access/linkages for sustainable rural enterprises.
- Support for access to funding (micro-credit schemes, linking up with local banking facilities).
- Develop an enabling environment/networks and partnerships for local enterprise development.
- Enable women to be small-scale dealers in W&E.

### **Supporting Capacity-building Needs at Different Levels**

The basic issue of integrating the needs and roles of women in W&E management practice is not merely which technologies are suited to women, but rather more importantly, how to empower them through enhancing their individual and collective capabilities so that they have a say in decision making. Women's organisations are an important part of women's individual and collective empowerment. Although empowerment in mainstream development is often envisaged as an individual process focused on entrepreneurship and individual self-reliance rather than a collective process of challenging power relations, individual women's influence and bargaining power may be limited without collective organisation and institutional change.

Empowerment is essentially a bottom-up process, whereby women – individually and collectively – freely analyse, develop, and voice their needs and interests, without them being pre-defined or imposed from above. However, appropriate external support is equally important to foster and support this bottom-up process of empowerment. For this, planners should play a facilitative role to support capacity building to strengthen the involvement of women throughout all levels of W&E policy making, planning, and project implementation. Clearly supporting capacity building needs at different levels is essential (Box 5). Capacity building at the policy and national levels with regard to women and energy means seeking the involvement of women’s organisations and expanding the development opportunities for their members through networking and partnership. Training is required for energy policy analysis in order to evaluate, choose, and implement programmes both centrally and locally (evaluating all the consequences and implications of the introduction and diffusion of a new technology from the economic, social, and environmental points of view). Capacity building at the project level requires creating awareness of energy and environment issues and developing technical and managerial expertise to plan and manage programmes effectively through various training programmes and support for women’s organisations that work locally to address the causes of gender subordination.

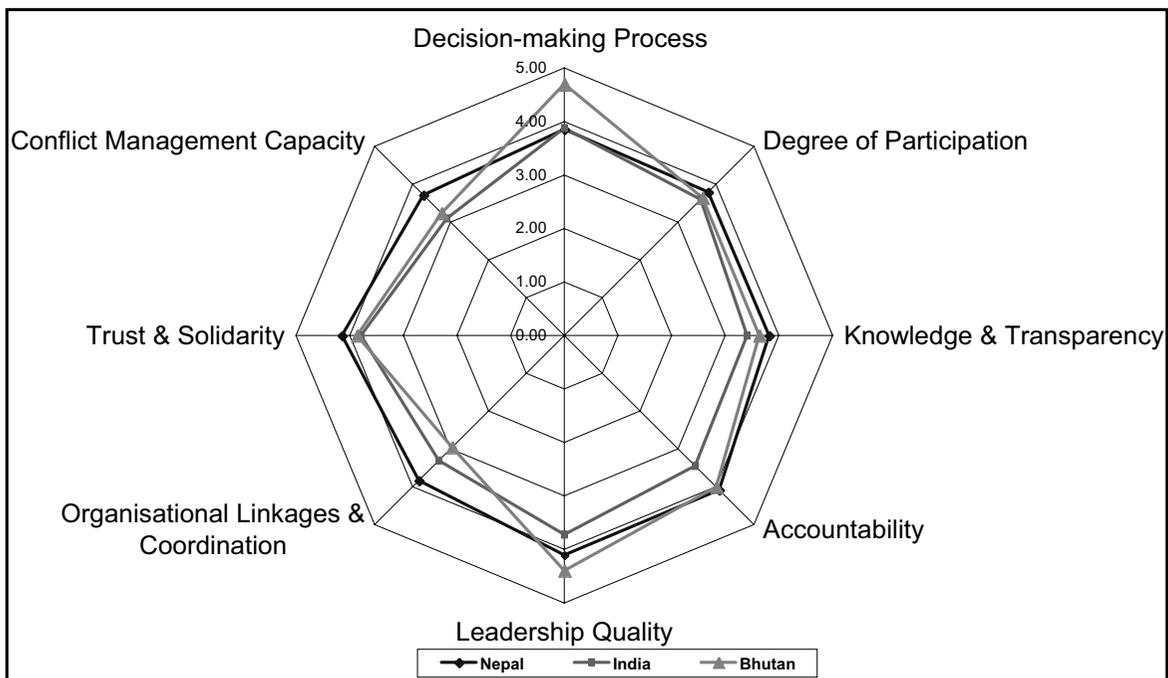
Women’s empowerment does not imply women taking over control previously held by men, but rather the need to transform the nature of power relations. Power may be understood as ‘power within,’ or self-confidence; ‘power with’, or the capacity to

<b>Box 5: Capacity Building Needs for Mainstreaming Gender in Water and Energy</b>		
<b>Target Group</b>	<b>Capacity Building Needs</b>	<b>Means</b>
National Policy Makers	<ul style="list-style-type: none"> <li>• Knowledge on gendered approach to water and energy policy and planning</li> <li>• Willingness to institutionalise gender analysis, gender statistics and other techniques of gender mainstreaming planning</li> <li>• Willingness to make space for and strengthen female staff in organisational set up</li> </ul>	<ul style="list-style-type: none"> <li>• Advocating involvement of women organisational and gender advocates in policy dialogue</li> <li>• Supporting measures to build gender disaggregated database to feed into national planning</li> <li>• Structured and focused interaction with researchers and NGOs</li> </ul>
Implementers of Water and Energy Programmes	<ul style="list-style-type: none"> <li>• Sensitisation towards gender issues in water and energy</li> <li>• Practical tools and techniques to incorporate women’s roles in planning</li> </ul>	<ul style="list-style-type: none"> <li>• Field level workshop in local language</li> <li>• Exchange visits and interaction with local organisations working on gender issues</li> <li>• Interaction with researchers and policy makers</li> </ul>
Village Communities	<ul style="list-style-type: none"> <li>• Sensitisation towards gender issues in water and energy</li> <li>• Information on energy options and their uses</li> <li>• Training in technology plus skills (enterprise development, marketing, leadership etc.)</li> </ul>	<ul style="list-style-type: none"> <li>• Exposure visit</li> <li>• Focus group discussions</li> <li>• Community meetings</li> <li>• Interaction with NGOs</li> </ul>
Source: ESCAP 2003		

organise with others towards a common purpose; and the ‘power to’ effect change and take decisions, rather than ‘power over’ others (Oxall and Baden 1997).

Capacity building and empowerment among women was the major focus of the project. Women in the project areas of all the three countries had little or no access to knowledge, skills, and awareness about the use and management of different W&E-related technologies to address their practical, productive, and strategic needs as a result of their illiteracy, poverty, and the amount of household drudgery they were involved in. Experience from the pilot projects suggests how the provision of training sessions on RETs, income generation, and group empowerment can enhance individual and collective capabilities, leading women to a path of empowerment. The use of a technology manual prepared in the local language and ToT sessions for women selected by the women’s group were both effective in multiplying the training both within and outside the project areas. Within a short span of time, the project was able to nurture women’s organisational capacity building through social mobilisation efforts. This organisational capacity building was found to be relatively strong, based on the scoring of qualitative indicators underlying the different dimensions of organisational capacity building rated on a five-point ordinal scale between 1 (worst outcome) and 5 (most desirable outcomes). Figure 3 shows the results of such an assessment of women’s organisational capacity building at the project sites, the qualitative indicators used are shown in Box 6. This approach can be used as a tool for institutionalising participatory monitoring at the group level.

One important lesson that emerged from the pilot experience is that social mobilisation is the surest way to help women to empower themselves by forming self-help groups and enhancing their capacity to plan and implement W&E-related activities based on their prioritised needs. Women have realised that group



**Figure 3: Status of Women’s Organisational Capacity Building in the Project Sites in Bhutan, India, and Nepal**

**Box 6: Indicators Used for Assessing the Local Organisational Capacity  
Building of Women at Project Sites**

<p><b>Degree of Participation</b>            Making rules            Needs identification            Making action plan for the pilot programme            Implementation of the pilot programme            Monitoring the programme  <i>Scale: very high 5, high 4, moderate 3, low 2, very low 1</i></p>	<p><b>Information, Knowledge and Transparency</b>            Project goal/objectives            Group saving and investment            Group revolving fund            Group rules and regulations  <i>Scale: know everything 5, almost everything 4, some knowledge 3, little knowledge 2, don't know 1</i></p>
<p><b>Organisational Linkages and Coordination</b>            With other groups/SHGs            With district level line agencies            With financial institutions  <i>Scale: very high 5, high 4, medium 3, low 2, very low 1</i></p>	<p><b>Trust and Solidarity</b>            Trust/unity between group and non-group members            Level of self confidence  <i>Scale: very much improved 5, somewhat improved 4, same as before 3, bad 2, worse 1</i></p>
<p><b>Leadership Quality</b>            Honesty /sincerity            Dedication            Responsible/accountable            Skill and capability  <i>Scale: very high 5, high 4, medium 3, low 2, very low 1</i></p>	<p><b>Accountability</b>            How accountable are you to your group decision            How accountable is your group to its members            How accountable is NGO social mobiliser to your group  <i>Scale: very high 5, high 4, medium 3, low 2, negligible 1</i></p>
<p><b>Decision-making Process</b>            Committee formation            Making rules and regulations            Selecting programmes/technologies            Preparing action plan            Implementation of the pilot project  <i>Scale: consensus 5, majority rule 4, voting 3, leader's imposition 2, imposed from outside (NGO) 1</i></p>	<p><b>Conflict Management Capacity</b>            Conflict management within group            Conflict management between groups  <i>Scale: very high 5, high 4, medium 3, low 2, very low 1</i></p>

organisation is a useful platform to come together, nurture social capital, build awareness, address their W&E problems, and resolve disputes and initiate productive activities enthusiastically. With a modest amount of revolving funds supported by project and regular group savings, both managed by women, they have started to reap incremental benefits in their pursuit of income generating activities. Many benefits in terms of health, education, and other forms of social awareness have emerged with spill-over benefits to neighbouring communities. Women are gradually becoming empowered to have control over decisions about community development activities. One substantive area of impact has been the confidence gained by women in managing their own affairs.

Simply providing training on RETs and income generating activities is not enough to enhance women's capabilities and encourage empowerment. Organisational capacity building requires managerial training and confidence-building measures, including training on loan management/bookkeeping, leadership, and entrepreneurship. Women should also be aware of their right to use any income generated whenever required. Women were provided with most of this training at all the project sites.

## Suggested actions to support capacity building

- Prepare women-friendly training manuals on various technologies in local languages to conduct ToTs.
- Conduct exposure/exchange visits to the technology demonstration centre and interact with local organisations working on gender, water, and energy issues.
- Encourage the formation of women's groups leading to cooperative and entrepreneurial development.
- Conduct training sessions on group empowerment, managerial skills, leadership, marketing, and skills development.
- Invest more resources in women's capacity development and confidence-building measures.
- Promote partnerships among government and non-government organisations as well as with the private sector.
- Support and strengthen project management committees and build operational mechanisms from project level to national level.

## Facilitating Networking and Partnership Development

Establishing networking among the organisations and stakeholders involved in the sector is important for developing a common platform for information sharing and for developing coordination. Since energy problems permeate all sectors – economic, environmental, and social – the cooperation and coordination of energy aspects in the various ministries is of critical importance. Networking with the government and line agencies working at the district, village, and local levels is vital for the sustainability of a programme. It is essential for all the actors, policy makers, implementers, and users to have first-hand knowledge and familiarity about the project. It is essential to have clarity about the responsibilities of each of the actors and the goals to be accomplished at the three levels: policy makers (in the government), implementers (INGOs/NGOs or CBOs), and target groups (the community).

Within a short period of time, the project was successful in developing networking and building partnerships. Coordination and linkages with various line agencies and NGOs in all the countries involved in the project were satisfactory. Various organisations provided different types of support to the programme and also helped with leveraging funds and incentives available in the line agencies into the programme. This also motivated some line agencies to incorporate the project activities into their existing programmes. In some places, Nepal for example, experience shows that the formation of a coordination committee at implementation level is crucial for establishing linkages and receiving support from the various line agencies and NGOs at district level. Such networking can also be instrumental in anchoring good practice into government programmes at the district level (e.g. in Dhankuta, Nepal).

## Suggested actions to facilitate networking and partnership

- Form coordination committees at the project implementation level.
- Develop partnerships and networking with district and local level organisations (horizontal and vertical).

- Disseminate lessons learned to all actors at all levels for sharing responsibilities.
- Support capacity building at all levels – policy makers, implementers, and target community – in mainstreaming of gender in W&E policies and programmes.

## Financing Water and Energy Interventions

Women need access to credit and other promotional strategies to purchase new W&E technologies to reduce drudgery and improve energy efficiency in their micro-enterprises and to act as energy entrepreneurs. Policies to support credit opportunities for women must address the collateral or revenue stream requirements of commercial credit organisations, 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 mortgaging becomes an option. Loan procedures and formalities should be simplified and reduced to a minimum.

There are a variety of financial mechanisms with flexible lending schemes that can be targeted at the end users to help them acquire the necessary technologies at an affordable price and stimulate markets for sustainable energy. The higher upfront cost for initial investment is the first and foremost barrier against widespread adoption of renewable energy based technologies. The availability of accessible financing is the key to overcoming the initial cost barriers. Although amortised costs over the lifetime of the technologies are much less than those of conventional energy use, people living in poverty generally think in terms of the first /upfront cost, rather than the life cycle cost. For villagers living in poverty, modern energy services are not only not affordable, they also compete with a host of other health, sanitation, and survival needs for a share of the household's resources. In order to bring the costs within the reach of many end users, it is necessary to spread the high initial/upfront cost over a period of time through flexible financial arrangements. This is where micro-credit can play a key role by providing small amounts of credit to women who are underserved by traditional, formal banking institutions, because of their lack of property or assets, or because of having no collateral. Micro-finance institutions (MFIs) have developed lending mechanisms that do not depend on the collateral, credit history, and loan guarantees required by the formal banking sector. In general, MFIs strive to attain sustainability through charging an interest rate sufficient to cover their costs. This is often higher than the commercial rate, but lower than the rates of alternative sources of credit available to their customers.

Micro-credit experiences from the project sites and elsewhere show that women are extremely creditworthy with excellent repayment records. Experience further shows that the provision of modest amounts of project core funds to establish a revolving fund has been effective in mobilising group saving on a monthly basis to initiate small-scale, micro-finance activities among women's groups. Women in India have even initiated inter-loaning activities with financial institutions. This has greatly facilitated the ease of credit, as women have been able to take larger loans from the bank and disburse the loans to meet the credit needs of their group members. Lessons further indicate that while financing is a key component of energy service delivery, it

should be carefully designed so as to support the creation of new markets and to avoid market distortions.

### **Suggested actions to help finance water and energy interventions**

- Provide women with better access to credit through micro-credit with flexible/comfortable lending arrangements.
- Establish a group revolving fund/group savings and link them with financial institutions to facilitate ease of credit for micro-enterprises.
- Ensure women's access to property rights, as well as agricultural inputs and implements.

### **Anchoring Good Practice in National Programmes**

Although many good practice examples exist at the micro-level with potential for replication and up-scaling, one major challenge remains: how to integrate these micro-level successes into macro-policies and programmes. Experience suggests that policy must be understood as a process which is as important as the outcome (state policy legislation, laws, plans). The more participatory the process, the better the result and the experience of hammering out a policy. The participatory process of anchoring the good practice in national programmes through grassroots initiatives is a powerful, demand-driven approach to ensure that the voice and choice of the people are ultimately reflected in the policy programme and action continuum. The pilot project in Nepal demonstrates how good practice can be anchored in national-level programmes using a bottom-up approach. The decision to replicate the demonstrated success of the pilot project in Nepal by one district development committee (DDC) provides an important example of anchoring a good practice in a policy process through a bottom-up approach (see Box 7). Experience shows that the formation of a district coordination committee right from the beginning of the project, as well as advocacy and information sharing, are necessary steps for integrating good practice into a national programme. Intensive dialogue and interaction with different stakeholders is critical for the successful implementation of small-scale infrastructure and linking such projects with existing programmes that are operational at the field level. Working together in partnership, as a multi-disciplinary team with district partner organisations, is an effective strategy for successful project implementation.

#### **Box 7: Example of Anchoring Good Practice in National Programmes through the Bottom-up Approach**

Technology demonstration model villages were established at two project sites in Nepal to demonstrate the technologies operated by women and to help speed up the dissemination of these technologies. A management committee made up of women members was formed to manage the centre. These villages are visited by women from neighbouring areas and are proving to be an effective medium for learning about the application of field-tested technologies that meet women's practical and productive needs and reduce drudgery. Influenced by the demonstrated success at the Dhankuta pilot site, the Dhankuta Local Development Fund Secretariat under the DDC decided to replicate and integrate the pilot project at another site (Vedetar). Similar integration is envisaged for the second site in Nepal. While it is not always possible for small-scale projects to directly influence national policies, this method demonstrates how good practice can be anchored in a national programme using the bottom-up approach.

## **Suggested guidelines for promoting anchoring of good practice in national programmes**

- Establish good practice examples using internationally accepted criteria to demonstrate their impacts, replication potential, and sustainability.
- Form project steering committees at the central level for overall guidance, policy coordination, and advocacy.
- Form district coordination committees at the project implementation level, involving key stakeholders at the district/project level.
- Establish innovative pilot technology demonstration model villages for technology transfer to rural women residing in remote mountain areas.
- Share project experience with DDC (or equivalent) members.
- Ensure policy dialogue through dissemination of project information, impacts, and demonstration.
- Promote policy dialogue and sharing of information at the central level.

## **Mainstreaming Gender**

Gender mainstreaming is the integration of the gender perspective into every step of policy processes – design, implementation, monitoring, and evaluation – with a view to promoting equality between women and men. The mainstreaming strategy does not mean that targeted activities to support women are no longer necessary. Targeted initiatives focusing specifically on women are important for reducing existing disparities, serving as a catalyst for the promotion of gender equality, and creating a constituency for changing the mainstream. All the steps discussed in the sections above are important for mainstreaming gender policies. The focus of this document is on water and energy, some other elements of gender mainstreaming are discussed in the following section.

Since gender is a cross-cutting issue, every ministry and government department should integrate gender into their policies. Mainstreaming requires change at different levels within these institutions, in agenda setting, policy making, planning, implementation, and evaluation. Instruments for the mainstreaming effort include new staffing and gender budgeting practices, training programmes, policy procedures, and guidelines. Without changing institutions to reflect and represent women's interests, the goal of gender equality cannot be attained.

There are certain practical and social constraints to incorporating women into W&E policies, which still stand as barriers. These include the lack of ownership over resources, restrictions on participating in activities outside the home, and lack of income sources, education, access to knowledge and information sources, and opportunities for involvement in enterprises. Overcoming these barriers to mainstreaming women in W&E policy planning processes is both a technical and a political process which requires substantial shifts in organisational cultures and ways of thinking; as well as in the goals, structures, and positive discrimination in the resource allocations of international agencies, governments, and NGOs.

As women in much of the rural Himalayas have been subordinated, and lack knowledge and opportunities as a result of prevailing societal norms and practices, an intervention through the empowerment approach, as in this project, can be the surest way to enhancing women's capabilities to come to a par with men. Enhancing women's needs and interests will benefit both the family and the community and can lead towards the sustainability of the project. Project experience shows that women are more comfortable in a homogeneous group due to their long segregation and through sharing similar situations. Women-specific initiatives (such as the one focused on by the project on the W&E needs of women as an entry point) can create an empowering space for women and act as an important incubator for ideas and strategies that can be transferred to mainstream interventions. Since gender mainstreaming and women's empowerment are complementary in a real sense, gender mainstreaming must be carried out in a manner that is empowering for women. The approach taken in the project was a bottom-up approach through needs assessment, capacity building, and continuous feedback from the grassroots to the policy level.

The project showed some important successes which differentiate it from many past projects: the women themselves expressed their water and energy demands, organised themselves for collective action, selected different technologies, implemented them based on their roles and needs, became energy entrepreneurs, and operated technology demonstration centres. This allowed the women to take ownership of the technologies and to expand their application as opportunities arose. The formation of women-only groups clearly helped in this process. In such groups women felt comfortable in taking charge of the technology instead of handing over control to men and being relegated to being passive 'beneficiaries'. Once their level of confidence grows through initial women-only initiatives, it is believed that women leaders and entrepreneurs will provide leadership in their communities in mixed groups. At the same time, mainstreaming of good practices at district and higher levels will take place, as was shown in the case of Nepal.

### **Suggested actions for mainstreaming gender**

- Prepare a training manual covering the gender component at all stages of planning.
- Institute an ongoing gender training programme as an effective mechanism for integrating gender perspectives and gender analysis into the operations of an organisation.
- Establish gender-disaggregated data on gender roles and responsibilities, assets, needs, and priorities, and a perspective on W&E using gender analysis tools.
- Promote the integration of women and men in decision making at all levels by building their capacities to plan, implement, and manage the programme effectively.
- Build the capacities of women and men to apply gender analysis tools to plan and manage programmes in W&E effectively.

- Sensitise policy makers to mainstream gender concerns in W&E policies, plans, programmes, and interventions.
- Facilitate the dissemination of good practice regarding gender mainstreaming among different institutions and all inter-agency strategies.
- Strengthen the gender focal point to coordinate work on gender mainstreaming.