



Women, Energy and Water in the Himalayas

Integration of Women in Planning and Management
Policy Guidelines



Bikash Sharma
Kamal Banskota
Samira Luitel

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Samira Luitel**

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Foreword

Increasing numbers of gender awareness and development interventions are helping to increase opportunities and improve the lives and well-being of women and rural communities across the Himalayan region. Nevertheless, in many areas women continue to bear a disproportionate burden in meeting their household water and energy needs. Increasing chemical pollution and ecosystem degradation often exacerbates their daily plight.

Fortunately, there are an increasing number of technical solutions available. A number of good practices in energy and water management are able to reduce the need for fuel, provide alternative energy sources, and increase water availability close to the home. However, such technologies and approaches are only accepted and used in practice if women are directly involved, and their special concerns taken into account in the decision-making and implementation processes. Unfortunately, the failure to recognise this has meant that many water and energy initiatives have been much less effective in the long-term than originally hoped.

ICIMOD, with its long experience in diverse mountain communities, recognises that any new interventions for improving the well-being of mountain women need to focus on ways to free women from the long hours and drudgery of work to enable them to engage in income-generating and other activities. This is accomplished by bringing them into the technology choice and decision-making process from the outset. This approach has the added benefit of contributing to women's overall empowerment and status.

In 2002, UNEP and ICIMOD initiated a project on 'Incorporating the Needs and Roles of Women in Water and Energy Management in Rural Areas in South Asia – Capacity Building of Women in Rural Areas of the Himalaya' with financial support from the Swedish International Development Co-operation Agency (SIDA). The project focused on enabling women to participate fully and effectively in the planning and implementation of household water and energy initiatives by building their capability to organise themselves and to identify and prioritise their own needs. The project was carried out in partnership with the Royal Society for Protection of Nature (RSPN) in Bhutan, The Energy and Resources Institute (TERI) in India, and the Centre for Rural Technology (CRT/N) in Nepal.

In less than two years, the project made a marked difference in the lives of the women, their families, and their communities. Women developed their own solutions to their water and energy needs, and many were able to use the time saved to generate income. Women have operated a technology demonstration centre from the technologies they adopted for the benefit of other women. Some have emerged as energy entrepreneurs, for example, as liquid petroleum gas depot managers, and producers and sellers of solar dryers and improved cook stoves. The impact was further broadened by coordinating with different development partners to provide

additional inputs and training to the women, providing the basis for mainstreaming good practices at district and national levels.

The project has demonstrated that the issue is not merely which technologies best serve the needs of women, but also how to enable them to choose the options that meet their needs and improve their livelihoods. The major challenge now is to translate such experiences into gender sensitive policies that can extend the impact across the Himalayan region.

The experiences and lessons learned from the project have been encapsulated in three publications and a film, one of which is this Policy Guidelines publication. A Project Final Report and a Training Manual complete the series. The Policy Guidelines book highlights the importance of bringing the gender perspective to water and energy policy analysis and design. It identifies approaches and actions to 'mainstream' gender concerns in policies and programmes and to implement them in water and energy activities. Policy makers and rural development practitioners can pick from these experiences those that are useful or suitable to their particular needs for replication and upscaling.

I hope that the Guidelines will be of use to policy makers, planners, and development specialists in national institutions, NGOs, and donor agencies engaged in engendering development and empowering women, especially in mountain areas. I would like to extend my sincere gratitude to UNEP-Nairobi and SIDA for the financial support, without which this important work would not have been possible.

Dr. J. Gabriel Campbell
Director General
ICIMOD

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Acronyms and Abbreviations

AEPC	Alternative Energy Promotion Centre
CBO	community-based organisation
CEDAW	The Convention on the Elimination of All Forms of Discrimination against Women
CRT/N	Center for Rural Technology, Nepal
CSD	Commission for Sustainable Development
DAC	Development Assistance Committee
DDC	district development committee
DEEP	Society for Development and Environmental Protection
DEPI	Division of Environmental Policy Implementation
EIA	environmental impact assessment
GAD	gender and development
HKH	Hindu Kush-Himalayas
HOPE	Himalaya Organisation for Protecting Environment
ICIMOD	International Centre for Integrated Mountain Development
ICS	improved cooking stove
ICWE	International Conference on Water and the Environment
IGAs	income generating activities
INGO	international non-government organisation
IWEP	Integrated Water and Energy Programme
IWM	integrated water management
LPG	liquefied petroleum gas
M&E	monitoring and evaluation
MDGs	Millennium Development Goals
MFI	micro-finance institutions
NFE	non-formal education
NGO	non-government organisation
NWAB	National Women's Association of Bhutan
O&M	operation and maintenance
PRA	participatory rural appraisal

R&D	research and development
REDP	Rural Energy Development Programme
RETs	renewable energy technologies
RSPN	Royal Society for the Protection of Nature
SIDA	Swedish International Development Co-operation Agency
SOLVE	Society for Local Volunteer Effort
TDV	technology demonstration village
TERI	The Energy and Resources Institute
ToT	training of trainers
UNCED	UN Conference on Environment and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
VDC	village development committee
VDP	village development programme
W&E	water and energy
WECS	Water and Energy Commission Secretariat
WED	women, environment, and development
WHO	World Health Organisation
WID	women in development
WWDR	World Water Development Report

Glossary

Basic needs approach: Projects and programmes targeted to meet practical needs, on the basis that women need to have their basic living requirements fulfilled before they can participate in development activities.

Efficiency approach: The mainstreaming or integration of gender aspects into projects in order to maximise project efficiency. The purpose is not especially to benefit women, or change the status quo, rather the approach 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.

Empowerment approach: Policies and programmes to meet strategic needs, i.e., education, legal, and political rights, and women's use of these; also mobility, and the self-confidence of women.

Energy services: These include lighting, cooking, heating and cooling, pumping, water sterilisation, refrigeration, transportation, communication, and power for productive purposes.

Equity approach: This was essentially a political movement, stimulated mainly by developments in the USA in the 1970s (anti-discrimination in job opportunities, equal pay for equal work, etc). It is based on the idea that women should participate equally with men in everything, thus they should be 'mainstreamed' in all projects. Also, the equity principle stresses the need to meet women's strategic needs as well as their practical ones.

GAD: The GAD (or 'gender and development') approach focuses on the socially constructed basis of differences between men and women and emphasises the need to challenge existing gender roles and relations.

Gender analysis: The systematic gathering and examination of information on gender differences and social relations in order to identify, understand, and redress inequities based on gender.

Gender awareness: The ability of persons or policies to understand the implications of a particular programme, project, or policy for both men and women, and to plan according to the needs of both.

Gender discrimination: The systematic, unfavourable treatment of individuals on the basis of their gender, which denies them rights, opportunities, or resources.

Gender division of labour: Socially determined ideas and practices which define what roles and activities are deemed appropriate for women and men.

Gender equality: Denotes women having the same opportunities in life as men, including the ability to participate in the public sphere.

Gender equity: Denotes the equivalence in life outcomes for women and men, recognising their different needs and interests, and requiring a redistribution of power and resources.

Gender gaps: Statistical and practical indicators of the differences in access to resources and to social and economic benefits for men and women.

Gender imbalance: Unequal distribution of women's and men's access to and control of resources, services, and benefits, and their participation in production and social reproduction.

Gender inequality: Biases against men or women determined by their gender, such that women's and men's participation in different social, political, and economic sectors, and in development in general, leads to unequal outcomes and benefits.

Gender mainstreaming: A process to realise gender awareness within an organisation and/or its policies, programmes, and projects. An organisational strategy to bring a gender perspective to all aspects of an institution's policy and activities, through building gender capacity and accountability. In energy it involves recognising gender differences in energy needs, use and priorities; developing programmes responding specially to these needs; and incorporating meaningful roles for both women and men in planning and implementing programmes.

Gender needs: Shared and prioritised needs identified by women that arise from their common experiences as a gender.

Gender planning: The technical and political processes and procedures necessary to implement gender-sensitive policy.

Gender relations: Hierarchical relations of power between women and men that tend to disadvantage women.

Gender training: A facilitated process of developing awareness and capacity on gender issues, to bring about personal or organisational change for gender equality.

Gender-aware policy: A policy which takes into account the social relations of women and men as well as the differences in their needs, as opposed to a policy specifically for women or men.

Intra-household resource distribution: The dynamics of how different resources generated within the household, or which come into the household, are accessed and controlled by its members.

National machineries for women: Agencies with a mandate for the advancement of women established within and by governments for integrating gender concerns in development policy and planning.

Patriarchy: Systemic societal structures that institutionalise male physical, social, and economic power over women.

Practical needs: Those needs which arise immediately from the gender division of labour. In rural areas where women's tasks almost always involve fetching water and fuelwood, cooking, and other domestic chores, meeting these immediate practical needs requires improved water provision, easier access to fuel, better (less smoky) cooking stoves, or other time and effort (drudgery) saving technologies to make women's work less arduous.

Productive needs: Many women, in addition to their reproductive work, are engaged or would like to be engaged in productive activities that earn income. Many of these may be an extension of household tasks, for example, cooking food for sale, or making clothes at home for sale to others.

Sex and gender: Sex refers to the biological characteristics that categorise someone as either female or male. Gender refers to a system of socially defined roles, privileges, attributes, and relationships between women and men which are not determined by biology, but by social, cultural, political, and economic forces.

Strategic needs/interests: These refer to those things necessary to change the balance of power between men and women with the underlying assumption that women are on almost every front (social, economic, and political) subordinate to men in society. It involves strategies to change this through laws (equal property rights, opportunities and their effective enforcement) which aspire to women's emancipation, equality, and empowerment.

WED approach: The 'women, environment and development' approach considers that women have a special relationship with the environment, which is very different from men's, and more 'sustainable'. Programmes and projects should use women's special skills and indigenous knowledge about the natural environment. In doing this, a better overall outcome can be attained, in addition to catering to the special needs of women.

Welfare approach: Programmes aimed at practical needs, targeted especially to 'needy' women, who are seen as passive recipients (the charitable approach).

WID: The WID (or 'women in development') approach calls for greater attention to women in development policy and practices, and emphasises the need to integrate them into the development process.

Women's empowerment: A 'bottom-up' process of transforming gender power relations, through individuals or groups developing awareness of women's subordination and building their capacity to challenge it.

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Introduction

Introduction

Background

Water and energy are essential resources for human survival and well being. Over the years, poverty, increasing population, and inappropriate development interventions in the Himalayan region have led to adverse effects on the environment, including the degradation of forests and water resources, a decrease in soil fertility, and land and air pollution. Adverse socioeconomic effects are also visible, most importantly, migration and its resultant social dislocation. Caught between poverty and environmental degradation, mountain women are finding it increasingly difficult to meet their water and energy (W&E) needs in a sustainable manner. With increasing water- and fuel-related work burdens, women are even forced to keep their children, especially their daughters, out of school to assist with household activities including fuel and water collection – thereby perpetuating intergenerational poverty. Besides lost opportunities, women are also faced with a variety of health hazards from fetching heavy loads, cooking for long hours in smoky environments, and others (Dutta 2003; UNDP 2001).

Meeting the water and energy needs of rural households can release large amounts of time and energy that women spend in collecting water and firewood, cooking, cleaning, and doing other household chores. Despite the significant positive effects of reducing women's drudgery by providing improved access to W&E services in rural livelihoods, the whole issue of saving women's time and effort (the reduction of drudgery) has not received the attention it deserves. Most of the W&E-related institutional and technological interventions of the past have failed to consider women as active partners in W&E programmes, despite their primary responsibility for managing the household's W&E needs. To meet the needs, perceptions, and aspirations of women it is essential to (a) bring them to the forefront of the dissemination of technological options that are pro-environment and pro-poor; and (b) focus on interventions that first identify their needs and then provide them with options which they can use and control. Women's role as managers of W&E resources at the household level has not been recognised and there are hardly any efforts to set in place mechanisms for the meaningful participation of women in W&E programmes. The participation of women in most development interventions in the past has remained marginal, leading to a situation where they are disempowered, unable to voice their concerns, and unable to make strategic choices. Gender and poverty sensitive W&E projects and action research are still the exception rather than the rule (Denton 2002).

In light of these experiences, UNEP and ICIMOD initiated a project entitled 'Incorporating Needs and Roles of Women in Water and Energy Management in

Rural Areas in South Asia – Capacity Building in Rural Areas of the Himalayas’, with financial support from Swedish International Development Co-operation Agency (SIDA). The objective of the project was to promote the integration of women in decision making, and in the implementation and management of household W&E initiatives by building their ability to organise themselves and identify their needs and roles, and to implement energy- and water-related technologies. This pilot implementation project was designed on the premise that any new intervention for women in rural areas of the Himalayas should aim to reduce their workload, reduce drudgery, minimise the hazards and risk to health and life, increase productivity, enhance equity in the sharing of work and benefits, and widen the options for productive work through the saving of time and energy. Collecting water and fuelwood are the main activities that take labour and time. This project has identified W&E as the key entry point for addressing the practical needs of mountain women’s empowerment, the interventions addressing women’s productive as well as strategic needs. The project provides space for women to participate in and benefit from multiple activities, addressing the twin challenges of engendering W&E and empowering women for sustainable development.

ICIMOD coordinated the overall project implementation that was carried out through its national collaborating partners in the three Himalayan countries. The collaborating partners were the Royal Society for the Protection of Nature (RSPN) in Bhutan, The Energy and Resources Institute (TERI) in India, and the Centre for Rural Technology (CRT/N) in Nepal. Activities were implemented at field sites in Phobjikha and Limukha in Bhutan; Uttaranchal and Himachal Pradesh in India; and Dhankuta and Palpa in Nepal.

A short time after the start of these interventions and the adoption of W&E-related technologies in two hill/mountain settlements each in the three countries (Bhutan, India, and Nepal), women experienced time saving and drudgery reduction of up to 60%, as well as health benefits. The establishment of a revolving fund and the credit made available through the savings and credit group that was formed by the women has helped to widen the options for productive use of the time saved and has also reduced market barriers to accessing technologies. Social mobilisation has empowered women through their own self-help groups and has enhanced their capacity to plan and implement W&E-related activities based on their prioritised needs.

Women have been able to demonstrate some innovative good practices with the potential for replication on a wider scale. More recently, using a number of internationally accepted criteria, the activities of this project in Nepal were selected as an example of good practice with a promising approach (WICEE 2004). A technology demonstration model village (demonstration of field-tested technologies that are practically operated by women at project sites in Nepal) has proved to be an innovative replicable model for speeding up the technology transfer process. The adoption of this model in the nationally recognised Village Development Programme (VDP) illustrates how a good practice can be anchored to policy using a bottom-up initiative. Recharging traditional water springs/sources through micro-reservoirs and

plantation activities on mountain slopes (Uttaranchal, India) is another innovative experiment carried out by local women to address their water problems in a sustainable way. Women are being empowered to have their say in making decisions concerning community development activities and are also beginning to function as energy entrepreneurs (Bhutan).

The importance of bringing gender perspectives to W&E policy analysis and design is still not widely understood and consequently is not fully integrated into mainstream W&E development activities. These guidelines, based on lessons from the project, seek to identify approaches and actions to mainstream gender concerns in policies and programmes and in their implementation. It aims to assist in finding answers to these issues, based on demonstrated successes and lessons from the project, for the future design, implementation, and replication of W&E management policies and programmes in the region.

Purpose and Rationale of the Policy Guidelines

The purpose of these Policy Guidelines is to facilitate the mainstreaming of gender roles and environmental sustainability in national W&E development policies and programmes, assisting policy makers and planners to integrate women's roles and concerns. The guidelines include lessons learned regarding good practices and approaches in pilot project experiences and those emerging from country-specific case studies. The goal is to support the building of national institutional and human capacities in cross-sectoral approaches to addressing women's issues and concerns in W&E management practices for the better design of sustainable W&E policies and programmes.

The guidelines are intended to examine the normally overlooked aspects of integrating women in the management of household W&E resources as an entry point for engendering development and empowering women. They also address the specific policy measures necessary to address linkages between gender, W&E services, and poverty. It is expected that the guidelines will serve as a useful tool for policy-advocacy, and for replicating and up-scaling pilot experiments in other parts of the Himalayas and beyond. The guidelines could be instrumental in designing future women-focused W&E programmes for implementation by line agencies and other development organisations.

More specifically, the guidelines are designed to:

- identify important policy issues covering technical, financial, and organisational elements to be considered in designing W&E services and systems for meeting the needs of women and communities;
- identify critical development bottlenecks that need to be addressed in policy formulation and suggest areas needing direct policy support for expanding opportunities to women;
- identify criteria for good project design, implementation, and sustainability; and
- demonstrate approaches that work best in reaching women and rural communities through modern forms of W&E management technologies.

Overview of the Policy Guidelines

These Policy Guidelines have been divided into an Introduction and Parts One and Two. Part One, which follows this Introduction, discusses the background, framework, and steps towards the introduction of gender-sensitive policies in water and energy, with a literature review on women in water, energy, and development in the global and regional context; a conceptual framework dealing with the policy objectives, underlying approaches, enabling conditions, and critical elements that are deemed important for realising gender-sensitive policies; and suggested policy directions, based on the experience gained overall in the country-specific activities. Part Two looks at the specific learning from the project activities with a summary of the lessons learned from the project and the major policy gaps emerging, and a section summarising the country-specific reviews of national policies and programmes on gender and water and energy. Part Two is followed by a Bibliography.

Part One

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

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

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

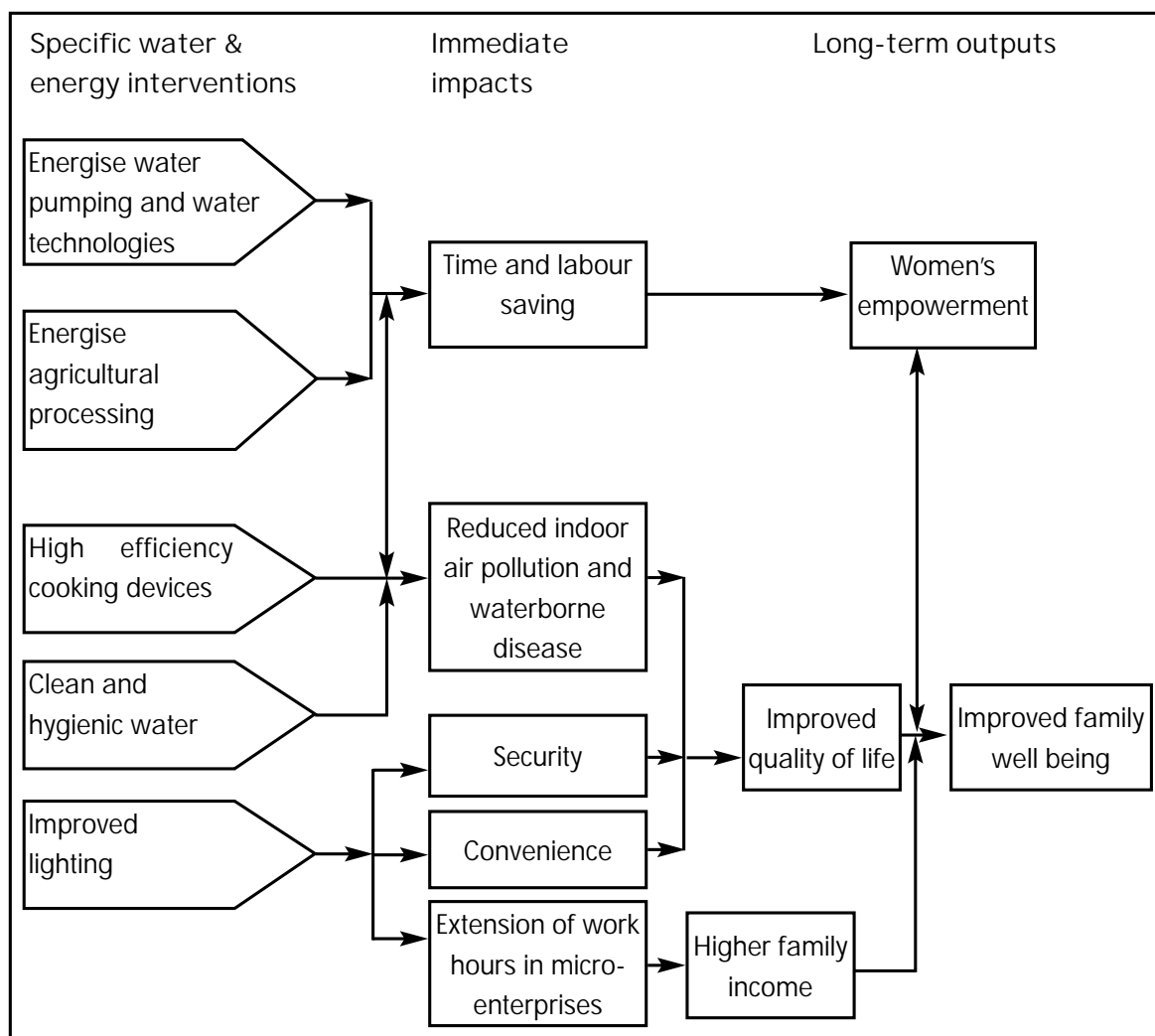


Figure 1: Multiplier effects of women-oriented water and energy interventions

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

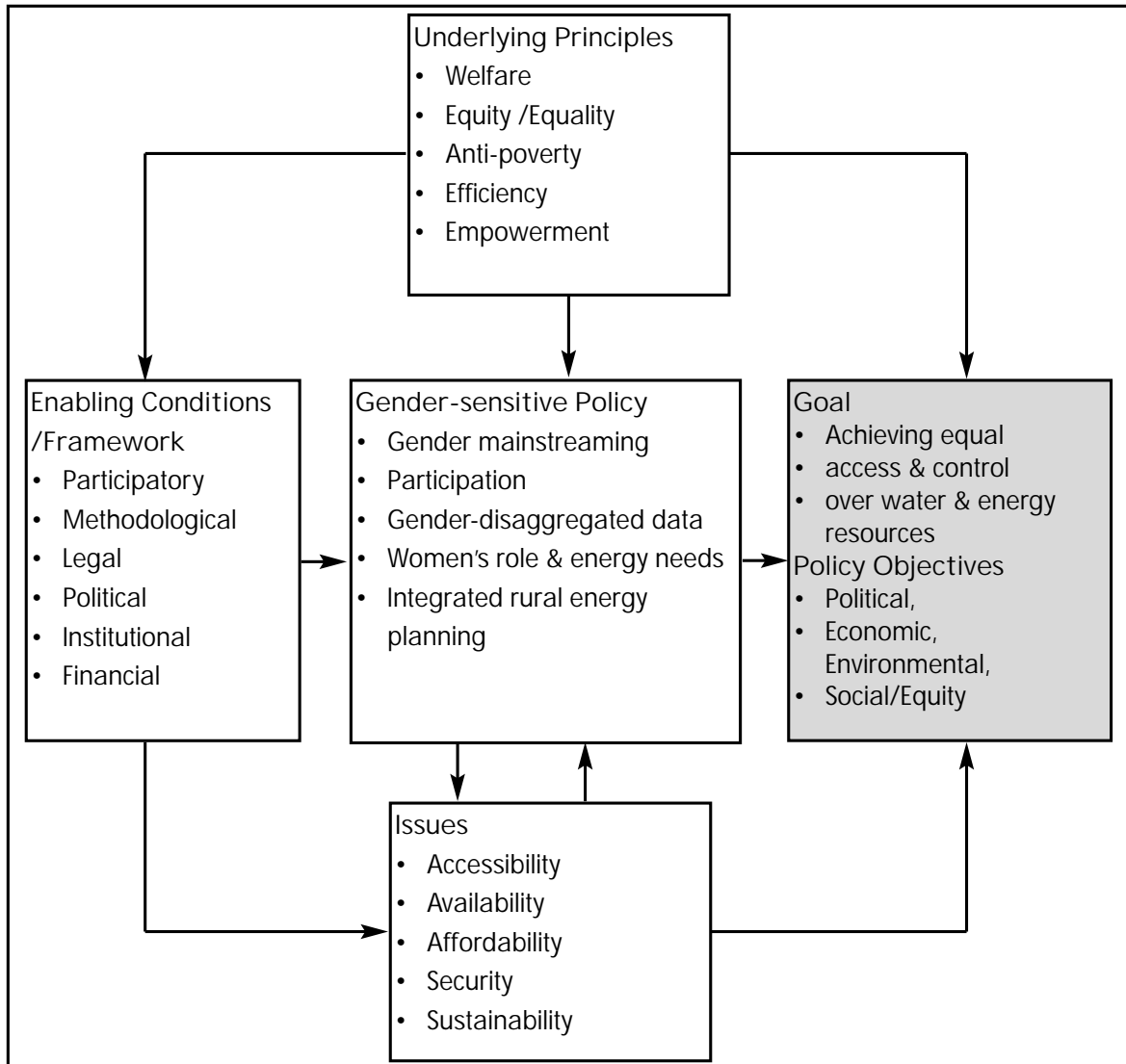


Figure 2: Framework for realising gender-sensitive policy

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)¹ 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).

¹ 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					
Access	Availability	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
	Affordability	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
	Safety/ drudgery reducing	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.

Box 3: Linking Project Impacts at Micro Level to the Millennium Development Goals and Targets		
Goal	Target	Linking Project Impacts to the MDGs
Goal 1: Eradicate extreme poverty and hunger	<p>Target 1: Reduce by half the proportion of people living on less than a dollar a day</p> <p>Target 2: Reduce by half the proportion of people who suffer from hunger</p>	<ul style="list-style-type: none"> • 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 • Use of new technologies improves farm productivity and diversifies rural income • Improved farm productivity enhances household income and nutrition of family members
Goal 2: Achieve universal primary education	Target 3: Ensure that all boys and girls complete a full course of primary schooling	<ul style="list-style-type: none"> • 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. • Income generated through use of improved water and energy technologies is used for children’s education and well being • Solar lanterns permit children’s to study at night in a less smoky environment (due to ICS)
Goal 3: Promote gender equality and empower women	Target 4: Eliminate gender disparity in education	<ul style="list-style-type: none"> • 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) • Solar lanterns permit women to use time productively even at night • 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 • Mobilisation of financial resources has allowed women to participate in community development activities
Goal 4: Reduce child mortality	Target 5: Reduce by two thirds the mortality rate among children under five	<ul style="list-style-type: none"> • 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 • Women have more time for child care as they spend less time on water and energy activities • Education helps to increase awareness of health, hygiene and sanitation issues
Goal 5: Improve maternal health	Target 6: Reduce by three quarters the maternal mortality ratio	<ul style="list-style-type: none"> • Reduction of excessive workloads and drudgery associated with carrying heavy loads of fuelwood and water have positive effects on women’s health • Reduction of arduous and repetitive food processing tasks and cooking in a smoky environment improves women’s health and well-being • Empowerment and increased incomes enhances awareness and access to health facilities
Goal 7: Ensure environmental sustainability	<p>Target 9: Reverse loss of environmental resources</p> <p>Target 10: Reduce by half the proportion of people without sustainable access to safe drinking water</p>	<ul style="list-style-type: none"> • Rainwater harvesting through micro reservoirs recharges traditional water springs • Plantation ensures slope stability and retards soil erosion • 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 • 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

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

	Harvard Analytical Framework	Gender Analysis Matrix (GAM)	Forcefield Analysis	Capacities and Vulnerabilities Analysis	Gender Needs Assessment
Focus	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
Key Components	Gender-based activity profile, access and control of resources, factors influencing gender division of labour, access and control	Impact of the intervention at four levels: women, men, households, and community, with respect to labour, time, resources and culture	Definition of problem and the desired situation (goal); listing of the forces working against and for the desired change; 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
Strengths	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
Limitations	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

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

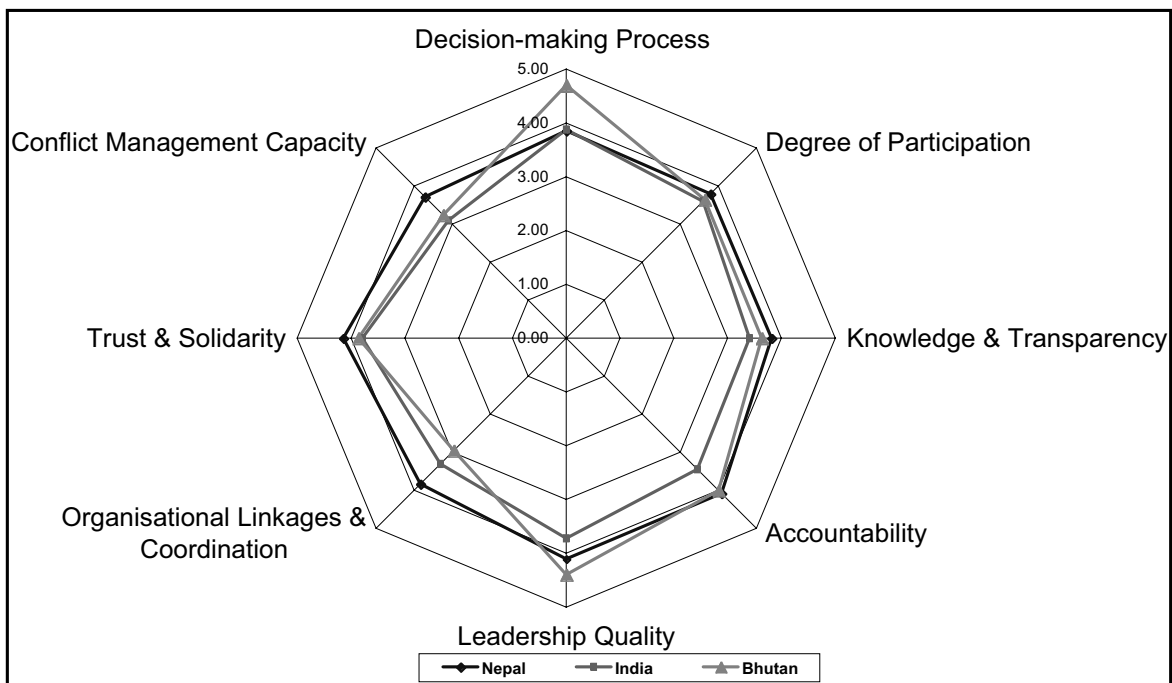


Figure 3: Status of Women’s Organisational Capacity Building in the Project Sites in Bhutan, India, and Nepal

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

<p>Degree of Participation 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>Information, Knowledge and Transparency 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>Organisational Linkages and Coordination 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>Trust and Solidarity 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>Leadership Quality 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>Accountability 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>Decision-making Process 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>Conflict Management Capacity 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.

Part Two

Lessons from Project Experience and Policy Gaps

Overall Lessons Learned and Policy Gaps

2

Experience from projects provides an important lesson, that engendering development in a real sense is not possible without first addressing the problems of women related to time and drudgery. Projects that consider only the short-term benefits and ignore productive and strategic gender needs are unlikely to be sustainable in the long run. The pilot implementation project, 'Incorporating Needs and Roles of Women in Water and Energy Management in Rural Areas in South Asia – Capacity Building in Rural Areas of the Himalayas' identified water and energy as the key entry points for intervention to meet women's practical needs first (ensuring daily survival) through improved access to W&E technologies.

The saving in time and the reduction of the drudgery involved in the daily collection of water and fuel was harnessed by integrating the support mechanisms of credit, skills training, and the organisational capacity building necessary to address women's productive needs for income generation and increased economic capability. The saving was also harnessed to meet women's strategic needs, i.e., their position in society, in particular to gain greater equality with men, and contribute to empowerment. The project provided space for women to participate in and benefit from multiple activities, and addressed the twin challenges of engendering water and energy management and empowering women. The experience from the project suggests that this is a method to achieve both efficiency goals (meeting practical needs) and equity goals (meeting strategic needs).

Lessons Learned

The key lessons that emerged from the project experiences are summarised below in thematic groups. (The project is described in more detail in the companion publication 'Capacity Building of Women in Energy and Water Management in Rural Areas of the Himalayas': Final Report, ICIMOD 2005).

Understanding and awareness of the issues and the solution

- Gender analysis in identification of needs and roles is the essential first step in any W&E related programme.
- Awareness raising about different renewable W&E-related technologies is important for enhancing rural women's access to water and renewable energy technologies (RETs).
- An exposure visit is critically important for breaking the entrenched sociocultural barriers that restrict the use of improved technologies.

Capacity building and training

- Training of prospective women as trainers is an effective way to train other women both within and outside project villages.
- The organisational capacity building of women at the grassroots level is essential for raising their voice in the decision-making process at the household and community level.
- Coordination and linkages with different organisations from the beginning of the project is essential for wider support in various areas.
- Women can be successful energy entrepreneurs.

Choice of appropriate technologies

- Time-saving and drudgery-reducing technologies are crucial entry points for addressing women's practical needs and for contributing towards their productive and strategic needs.
- As a more permanent solution to water scarcity, recharging traditional water springs is possible through innovative measures such as micro-reservoirs, plantations, and social fencing on mountain slopes.
- The technology demonstration village is an effective model for broadening awareness and speeding up technology transfer in inaccessible mountain areas.

Financing technological interventions

- The establishment of a revolving fund and group savings is essential for enhancing women's access to renewable energy technologies.
- Provision of a clearly designed level of initial subsidy is essential for pump priming.
- The availability of an accessible micro-finance institution with comfortable lending practices is the key to overcoming the initial cost barriers (high up front costs).

Policy mainstreaming

- Integration of good practices from pilot activities into the existing government programme is possible and is an effective method of linking bottom-up experience with national policy.

Targeting women

- Focusing on women as a target group for empowerment is an essential first step for gender mainstreaming. Women-specific initiatives can create an empowering space for women and act as an important incubator for ideas and strategies that can be mainstreamed later on.
- Women's empowerment and gender mainstreaming do not compete with each other but are complementary. Women are to be given priority because they are the key managers of energy and water resources at the household level, besides taking care of the whole household.

Policy Gaps

The pilot project also provided a possibility for analysing existing policies in the three countries studied and highlighting gaps in the country-specific policies and programmes related to integrating gender needs and concerns in W&E management. These are summarised below.

As in much of South Asia, the greater Himalayan region, particularly in India and Nepal, is an area of classical patriarchy in which women have few economic rights (land, formal credit); have low literacy levels; and suffer because of strong traditions of female seclusion. This patriarchy is manifested essentially in legal structures, e.g., tying women's property rights with marriage, the ideology of the compulsion of marriage, and the need for having sons for salvation. The relationship is circular and hampers women's access to resources and avenues of employment, health facilities, education, and knowledge, which in their turn make women more dependent on men for access to resources. Although Bhutan has a matrilineal system, in practice here also little voice is given to women to shape their own choices, and despite the fact that the government has recognised improvement in women's status as one of its major policy objectives, the inadequate gender sensitivity of the implementing machinery remains a major hurdle to the implementation of all government policies. Much of the problems with women's advancement are thus related to such societal ideology, behaviour, and structures. It is in this context that the realisation of pro-women W&E policies calls for confronting these societal norms, attitudes, and practices through changing people's mindsets, apart from the enforcement of formal law and regulations against gender discrimination.

A close review of the existing national policies and programmes in the three countries under study reveals that policy makers continue to treat W&E policies as gender neutral in terms of impacts, thus failing to recognise the differing roles and needs of women and men in water and energy management. As an example, the conventional investments in W&E that goes into larger infrastructures often do not benefit women and they have little control over such projects. Biomass energy at the national energy planning level has not received the attention it deserves despite the fact that it will be dominant in the overall rural energy scene for many years to come.

Many energy uses and energy sources are ignored completely in national energy planning, in particular, the human metabolic energy used. Women's interest in energy is narrowly defined in the sense that fuelwood is regarded as the main concern of women with no thought for other energy-using tasks and other sources of energy that impinge on them. With the exception of projects related to ICS, biogas, and forestation programmes, all other energy projects – both for conventional energy investment (power stations, extension of the electricity grid) and for new and renewable sources – are seen as gender neutral. Even in projects which are seen as 'women's projects' the voice of women is not always heard when women are not involved in the project, with little or no attention paid to women's opinions about the technology. This was the reason why the earliest improved cooking stove programmes were mostly a disaster. Projects which have a short funding period

coupled with a limited number of staff cannot afford to 'waste' time arranging for project staff to sit for hours discussing the technology with women. Programmes with a centralised, target-based, subsidised approach have mistakenly based their success on the hurried achievement of the allotted targets rather than the number of stoves – or other technology – actually used, often ignoring aspects such as awareness generation, training, and maintenance.

Sectoral division of responsibilities without full coordination for integrated planning has been another reason for illogical energy planning, particularly since energy is not really a sector on its own, but an input into many other sectors. Women are more likely to be represented at policy levels in 'soft' ministries such as health and community development than in technical areas/agencies of water and energy; and again lack of cooperation between 'soft' and 'hard' ministries hinders the process of introducing more gender-aware approaches.

Even though the governments of all the three countries involved in the project have begun to incorporate women's issues in their five-year plans, especially since 1975, none so far has a clear policy for integrating the needs and role of women in W&E management at the household and community levels. Some of the common concerns identified in the country reports are listed below (see below for summaries of country-specific policy reviews).

- Women, especially in rural areas, face particular hardship due to lack of water and energy services.
- Energy planning processes, policies, and projects generally have not been gender sensitive.
- National energy plans need to focus more on rural electrification and to be coordinated better with other policies, such as those on land use, forestry, and women's development needs.
- Better analysis is needed regarding past and current energy projects and policies because too often pilot projects have simply been discontinued and new ones begun without any consideration of the lessons learned from what was tried before.
- Participatory approaches are needed in W&E project planning.
- Education and training of women is needed to increase their role in W&E plans and projects.
- More public information is needed about possible W&E options.
- Better affordability and financing arrangements are essential for project continuity, especially credit for women.

Country-specific Policies, Issues, Lessons Learned, and Suggested Policy Directions

Bhutan

Bhutan is at the inception stage in gender mainstreaming. As the present priority of the Royal Government of Bhutan is on local governance, gender mainstreaming as a strategy has not yet been developed fully and effectively. In an attempt to promote decentralised governance and people's participation in development, studies were conducted to understand the different needs, interests, and constraints on women and men; and their involvement in development processes. The First Gender Pilot Study (2001) was conducted to collect and analyse gender-disaggregated information on key sectors in selected districts (urban and rural) to deepen understanding of gender relations in Bhutan and feed the key findings into the planning processes of the 9th Five-Year Plan. Some of the constraints outlined in the report are outlined below (RSPN 2004).

Societal perception stacked against women's participation in decision making

Community meetings are the men's domain. Men elect each other to management committees according to societal norms. The women, by contrast, are shy and diffident about speaking up or taking active roles, even though they are usually keenly interested in any discussion to do with energy and water. This societal bias against women's participation, even in matters where women have more experience and expertise than men, is one of the most serious impediments to women's involvement in energy and water management, for it has ingrained itself in the minds of both men and women over centuries and expresses itself concretely in the composition of local and national management and decision-making structures. For energy and water management systems to utilise the traditional knowledge and the concerns women have displayed, it is necessary to address these societal and power impediments.

Matriarchal relations do not necessarily express themselves in control over land rights

Water rights are often closely tied to land tenure arrangements and are often transferred with land. Although women may have the legal right over the land, which is passed on from mother to daughter, they often have no right to participate in organisations that take decisions regarding its use and are culturally excluded from decisions and activities involved in water provision for irrigation. Irrigation is regarded socially as an activity for men. Women are not consulted when infrastructure work to improve irrigation projects is being planned, or when grants are being allocated, and in general they are denied participation in decision making and benefits, which further exacerbates the discrimination and insecurity they suffer.

Women often lack skills relevant to participation, partly because of their lower access to education and resulting lower self-confidence

Women are often less informed about technical projects because project staff and village men consider this a male topic. When women are able to attend meetings, they often feel restrained by their lack of education. Because of societal norms as barriers, the accepted role of a woman at public meeting is often to listen to the men talk. Women have little experience in public debates, and even women people's representatives have been found to express themselves less freely or frequently than men. Women's mobility is restricted largely to visits to relatives, to the dispensary, the market, or the flourmill. In many cases, energy and water projects involve the introduction, operation, and maintenance of new technology and construction work. These are not regarded as activities for women, and women are often not offered the training necessary to equip them to enter these fields.

The challenge in Bhutan is to eradicate the more subdued and indirect forms of gender bias existing within society or emerging as a consequence of change. Despite equal opportunities and entitlements, and equal legal status for women and men, differences are seen in equitable access, particularly in education, enterprise development, and governance, leading to lower levels of achievement for Bhutanese women and girls. Societal perceptions that women are physically weaker and more vulnerable has greatly influenced women's access to educational and employment opportunities. Cultural barriers stand out as the major constraint preventing women from coming forward to participate in public functions. Women's own perceptions of themselves also seem to be based on these two factors. Women are now active participants in decision making in the programme areas of the Royal Society for the Protection of Nature (the implementing partner) as a result of its social mobilisation compulsion rules.

Lessons from project experience

- Focusing on women's water and energy needs as an entry point leads to multiple benefits that go beyond good project performance and are manifested in improved hygiene and awareness about nutrition. An important benefit is the intergenerational impact of children's schooling.
- Better access to energy and water gives women more time for income-generating activities, the needs of family members, or their own welfare and leisure.
- Project beneficiaries are likely to have a stronger sense of ownership when the project gives them enough time, design flexibility, and authority to take corrective action.
- Provision of project seed money for establishing a group 'revolving fund' and mobilisation of group savings on the basis of criteria set by the groups themselves can serve as an effective way of financing and ensuring financial sustainability.
- The community mobilisation process has encouraged women's participation in public life and provides them with a voice in the affairs of the community. The men have started realising that women are equal partners in family affairs as well as development activities.

- The formation of separate community organisations for women enables them to discuss the specific problems they face: in mixed groups women shy away from discussions and decisions. But to give them a voice in community affairs and integrate them into the decision-making process, it is necessary that all village-based activities have equal representation.
- The design of technology such as ICS is not viable given the structure and design of Bhutanese houses and modifications to the technology would require extra financial support.
- The feasibility of a new technology and comparative studies with existing technology are essential. In the case of ICS, the cost of the existing technology, 'burkhart', is lower than that of the introduced technology, and beneficiaries are not keen on accepting the new technology.
- The project duration was too short to meet the objectives effectively, considering that participatory initiatives and management are new concepts in Bhutan.

Policy directions

Women specific projects such as Women, Energy and Water are needed to promote gender equality because gender equality has not yet been attained and gender mainstreaming processes are not well developed. Such projects are important for reducing existing disparities, serving as a catalyst for promotion of gender equality and creating a constituency for changing the mainstream. Suggested policy directions are:

- Establish gender disaggregated data on energy and water collection and use patterns by end use activities covering the time, drudgery and health impacts associated with their collection/use, and on decision-making processes on household energy and water using standard gender analytical tools
- Promote technologies that reduce the time and drudgery spent, and also provide opportunities for women to assist in developing renewable energy forms by involving them in the design, construction and maintenance of the technology
- Invest in women's organisational capacity building and empowerment through social mobilisation to raise awareness, build self confidence, expand choices, increase access to and control over resources, improve logical sharing of burdens, benefits and responsibilities between women and men, and initiate actions to transform the structures and institutions that reinforce and perpetuate gender discrimination and inequality.
- Establish and strengthen mechanisms at grassroots, and national levels to facilitate the required participation of all stakeholders.
- Efficiency, effectiveness, equity, and affordability are the main gains of adopting a gender approach towards energy and water management. Reaching them requires detailed attention to social realities during the design, and throughout the execution, of energy and water delivery systems.

India

The Government of India is committed to mainstreaming gender perspectives in the development process and has taken various proactive measures to create such capabilities and opportunities for women. It is necessary to further facilitate the participation of women in the development process by first addressing their immediate concerns. This calls for an understanding of their needs and concerns as well as their resources, and the creation of time and energy through the introduction of drudgery-reducing and productivity enhancing technologies in rural areas. Until recently, programmes have mistakenly based their success on the number of units given out rather than the number used. The emphasis on numbers does not reflect user requirements. In a hurry to achieve the allotted targets, aspects such as awareness generation, training, and maintenance are often ignored. It is necessary to ensure that targets flow from bottom to top (TERI 2004).

Gender mainstreaming has been included in different ways in periodic plans. The Seventh Plan (1985-1990) declared for the first time the objective of bringing women into the mainstream of national development; while the Eighth Plan (1992-1997) projected a paradigm shift from development to empowerment to ensure a flow of benefits to women in the core sectors of education, health, and employment. The Ninth Plan (1997-2002) again declared the empowerment of women as its strategic objective, making assurances that at least 30% of funds/benefits from all development sectors would flow to women. The current Tenth Five-Year Plan (2002-2009) has suggested specific strategies, policies, and programmes for the empowerment of women. Chief among them are the targeting of women-headed households and disadvantaged groups on the basis of deprivation parameters; the formulation of gender sensitive development indicators as a tool for monitoring progress toward human development; and the devolution of authority to the panchayats and municipalities to administer progress at the grass roots level.

Evidence from the evaluation of national programmes for promoting renewable energy technologies like biogas, improved cooking stoves, and solar cookers shows a wide variation in functionality rates and long-term acceptability of the technologies. A lack of women's involvement at all stages in the project cycle was identified as one of the major causes of a project's limited sustainability. The experience further indicates that a lack of local involvement and capacity, especially women's, is one of the biggest constraints to the success of rural energy interventions in India (Dutta 1997).

Policy gaps and issues

- The disconnection between policy and implementation is amplified in cases where gender sensitivity is required.
- Women are not aware of their rights.
- There is a lack of synergy on gender issues between different programmes
- Policy does not factor in micro-complexities.
- There is no systematic approach to advocacy.
- More models are needed to convince policy makers.

Lessons from project experience

- Recognition of efficient energy/water provision is fundamental to women's empowerment.
- Actual needs should be incorporated. leading to local solutions.
- User needs and the changes desired in the traditional system have to be studied carefully before disseminating biogas, ICS, or any other technology. For example, ICS will be more relevant in areas where there is a perceived scarcity of fuelwood (arid areas where trees grow very slowly).
- Programmes should have a larger component of awareness generation.
- The water-energy nexus emphasises productive aspects.
- Women can be the catalyst and agents of change in the process of reform.
- Women's institutions can be given lead roles in entrepreneurship.
- Subsidies should be redirected to target women specifically (entrepreneurs).

Policy directions

Since water and energy are women's most immediate concern, appropriate interventions must include a comprehensive 'package' covering all aspects of household energy and water provision. Technological solutions should be arrived at by consulting women and preference should be given to their needs, aspirations, and convenience. Technological interventions should encourage and support women in looking at their lives as dynamic and progressive and should contribute to (self)-confidence building.

The needs are summarised below.

- Menu of technology options to address the water and energy needs of women
- Provide capacity building support for entrepreneurship
- Facilitate micro-planning with a focus on indigenous solutions
- Legal and policy support for giving a leadership role to women and increasing their empowerment
- Expand project activities to make an impact at the policy level through working jointly with the government and presenting 'model cases'
- Need for a programme approach to establish a demonstration model (e.g., entrepreneurship, technology options, credit and women-centric institutional mechanisms, and a deliverable, larger, and more structured component of advocacy and outreach) and a framework on gender mainstreaming across different programmes
- A bottom-up approach functions better than the centralised approach. A strong local NGO will help the government to design and implement the programme more efficiently at the local level.
- Technology should be implemented according to needs, aspirations, and convenience: points to consider are familiarity, simplicity, durability, aesthetic appeal.
- Needs assessment is necessary before implementation.
- Provision of soft package loans to address the problem of affordability
- Assessment of social structure of caste, gender, kinship and land holding, leadership etc.

- Energy services for the use of women requires that they have awareness – education, awareness and technological training required
- A single body is essential at the village level (which has adequate women's representation), other than the main implementing government organisation at the centre, to plan, implement, and manage energy programmes
- Increased involvement of NGOs will help in designing programmes that are closer to the social and cultural realities of rural society

Nepal

In Nepal the need to overcome the legal impediments to women's involvement in most economic activities and empower them was not recognised until the Sixth Five-Year Plan (1980-1985). The Eighth Five-Year Plan (1992-1997) also recognised the need for increasing women's participation at each decision-making level in government, non-government, and semi-government set-ups. It also gave major importance to the development of rural energy technologies (RETs). While the present Tenth Plan (2002-2007) attaches importance to gender mainstreaming as a cross-cutting issue across all ministries, it does not explicitly link gender concerns with energy and water-related policies. The focus of the energy sector strategy is on alternative energy development and environmental conservation rather than on reducing women's drudgery and addressing health hazards. However, many donor-supported programmes such as Rural Energy Development Programme (REDP), improved cook stoves, integrated water management (IWM) and the biogas programme have included women's concerns in their operational guidelines (CRT/N 2004).

The forestry sector policies are gender-blind, ignoring any gender implications. Rather than emphasising women's role as procurers, users, and managers, the Forestry Sector Policy 1996 categorically identifies women as 'woodcutters' and for this reason the policy emphasises extension activities for women in users' committees. In order to promote RETs, the government has introduced a separate subsidy policy on RETs channelled through the Alternative Energy Promotion Centre (AEPC). The subsidy policy (except for the biogas sector) needs to be simplified.

Although the draft water resources strategy has categorised women beneficiaries as a 'vulnerable group', there is as yet no strategy to mainstream gender in water resources. While the Irrigation Policy (2049 B.S {1992} Amended 2053 B.S.) emphasises that at least 20% of women beneficiaries should be included in the executive bodies of water users' associations (WUAs), there is a lack of policy on how to promote the participation of women in the WUA's decision-making process. The National Water Supply Sector Policy 1997 has given due importance to the gender equality aspect, primarily to enhance women's involvement in the development of water-related projects.

Issues concerning women have not been adequately dealt with at the policy level. In the name of gender mainstreaming, policy documents write the term 'gender' and forget it completely during programme formulation and implementation (Bhadra 2002).

In 1995, the Water and Energy Commission Secretariat (WECS) published guidelines for the incorporation of gender issues in the water and energy sector. In 1997, WECS recommended having gender sensitisation, a gender desegregated database, and the commissioning of gender experts for the planning and programming of water and energy projects. However, they have not yet been translated into practice.

Policy gaps and issues

- Lack of a critical mass of women in policy/decision making positions from the central to the local level
- Lack of information about women's essential roles for project planning
- Lack of the site-specific data on women's roles needed for project preparation
- Technologies relevant to women's practical needs in the water and energy sector under-researched
- Lack of serious attention in government plans, policies, and programmes to integrate women's active participation, both at the grassroots level and the programme and policy level
- The latest draft paper on Rural Energy Policy, 2060 B.S (2003) fails to incorporate gender dimensions (gender equity in participation and benefit sharing) in rural energy policy (CRT/N 2004).

Lessons from project experience

- Formation of project implementing and coordinating committees at the project, district, and national level is crucial.
- A gender-oriented participatory approach should be internalised at all the stages of the project cycle.
- Full participation of local people is necessary (men, women and community organisations).
- Needs and impact assessment is essential to determine women's roles and needs with regard to energy and water interventions and to prioritise technological interventions that address women's needs (practical, productive, and strategic) for improving their livelihood assets.
- Integration of drudgery reducing technologies with micro-enterprises is critically important to harness the saved time for income generation.
- Women should be targeted not as beneficiaries but as active participants at all stages of the project.
- Setting up of village technology and resource centres is an effective strategy for widespread dissemination of technology and operational know-how and effective 'learning ground'.
- Women should be made aware of and knowledgeable about the importance of water and energy, their impact on their lives, and their proper management and uses.
- More resources should be invested in women's capacity development and confidence-building measures to enhance skills, knowledge, and empowerment.
- Women's entrepreneurship can be enhanced through the integration of water and energy management initiatives with possible micro-enterprises and through

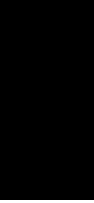
the provision of providing training and extension services for entrepreneurship development.

- Concerned agencies should facilitate women's access to credit and 'fair trade' marketing networks by providing entrepreneurial, managerial, and marketing know-how.

Policy directions

- Active involvement of district line agencies and women's organisations and other village bodies would be the best approach for identifying and selecting a project site
- Partnership and joint effort among national, district, and project-based implementing committees would be the best way to manage a project
- A gender-oriented participatory approach is the most desirable approach for any action plan or project
- Gender-sensitive policies and practices should be initiated following the 'bottom up' approach.
- Gender-sensitive water and energy interventions should be integrated in VDC and DDC-level project planning with fair representation of women at both VDC and DDC levels to enable them to articulate their concerns and needs.
- Replication of 'village technology centres' should be promoted as a programme component of DDCs.
- An enabling support mechanism should be created, focusing on easy access and the provision of credit, a market, and information including linkages of women's groups with financial institutions
- Micro-financing and banking policies and procedures need to be geared towards providing credit services to address rural women's needs.
- 'Revolving funds' and 'group savings' should be mobilised in the project areas as exemplary financing mechanisms.
- Effective participation of local and district line agencies and national organisations is crucial for strengthening the technical and institutional capabilities of women and their organisations in a project.
- It is vital that project management committees are supported and strengthened and that an operational mechanism is built from project level to national level.
- Documentation of all processes of project development and implementation, including good practices, is essential for future planning and policy formulation.
- Video documentation can be a very good visual aid for project promotion.
- Gender issues should be addressed at each and every step of a project cycle, in order to incorporate gender concerns successfully in the water and energy sector.

Bibliography



Bibliography

- Annecke, W.J. (1999) *Concept Paper for Energy and Women: Lessons Learned*, Energy and Development Research Centre (EDRC), University of Cape Town, South Africa
- Banskota, M.; Chalise S.R. (eds) (2000) *Waters of Life: Perspectives of Water Harvesting in the Hindu Kush-Himalayas, Volume II*. Kathmandu: ICIMOD
- Batliwala, S.; Reddy, A.K. (1996) *Energy for Women and Women for Energy: Engendering Energy and Empowering Women*, Brainstorming Meeting of ENERGIA: Women and Energy Network, June 4-5 1996, University of Twente, Enschede, The Netherlands
- Bennet, L.; Goldberg, M. (1993) *Providing Enterprise Development and Financial Services to Women: A Decade of Bank Experience in Asia*, World Bank Technical Paper No. 236, Asia Technical Department Series. Washington DC: World Bank
- Cecelski, E. (1992) *Women, Energy and Environment: New Directions for Policy Research*, IFIAS Working Paper, GSD-2. Canada: International Federation of Institutes of Advanced Study
- Cecelski, E. (1995) 'From Rio to Beijing: Engendering the Energy Debate, Special Issue Paper.' In *Energy Policy*, 23(6): 561-575
- Cecelski, E. (2000) *The Role of Women in Sustainable Energy Development*, NREL Report, NREL/SR-550-26889. Colorado (USA): National Renewable Energy Laboratory
- Cecelski, E. (2002) *Enabling Equitable Access to Rural Electrification: Current Thinking and Major Activities in Energy, Poverty and Gender*. Washington DC: World Bank
- Clancy, J.S. (2003) *Household Energy and Gender: the Global Context*, paper prepared for Sparknet. Available on line at <http://www.sparknet.info/goto.php/view/7/theme.htm>
- Clancy, J.S. (2003) *Blowing the Smoke out of the Kitchen: Core Issues in Household Energy and Gender*, briefing paper prepared for Sparknet. Available on line at <http://www.sparknet.info/goto.php/view/2/theme.html>
- Clancy, J.S.; Skutsch, M.; Batchelor, S. (2003) *The Gender-Energy-Poverty Nexus: Finding the energy to address gender concerns in development*, paper prepared under the United Kingdom's Department for International Development (DFID) Project CNTR998521. Available on line at <http://www.sparknet.info/uploads/file/gender-energy-poverty.pdf>
- Clancy, J.S.; Oparaocha, S.; Roehr, U. (2004) *Gender Equity and Renewable Energies*, thematic background paper prepared for the International Conference for Renewable Energies, 2004, Bonn, Germany. Available on line at www.renewables2004.de/pdf/tbp/TBP12-gender.pdf
- Clancy, J.S.; Feenstra, M. (2005) *How to Engender Energy Policy*, draft paper for the Department of Technology and Sustainable Development, Centre for Clean Technology and Environmental Policy, Faculty of Business, Public Administration and Technology, University of Twente, The Netherlands

- Coates, S.; Patkar, A. (2000) *Practical Guide to Mainstreaming Gender in Water Projects: report of a consultation exercise conducted in Mumbai, India, August 10th 2000*. London: Department for International Development (DFID), and Loughborough: Water, Engineering and Development Centre (WEDC), Loughborough University
- CRTN (2003) *Women in Energy and Water Management: Nepal Case Study*. Report submitted to ICIMOD, Kathmandu, Nepal, by Centre for Rural Technology, Nepal
- CRTN (2004a) *UNEP/ICIMOD Supported Project on Women in Energy and Water Management in Nepal: Final Report*, a report submitted to ICIMOD, Kathmandu, Nepal, by Centre for Rural Technology, Nepal
- CRTN (2004b) *Women in Energy and Water Management in Nepal: Plan and Policies on Gender, Energy and Water and Suggested Operational Guidelines on Incorporating Needs and Roles of Women in Water and Energy Management Practices in Nepal*. Report submitted to ICIMOD, Kathmandu, Nepal, by Centre for Rural Technology, Nepal
- OECD (1998) *DAC [Development Assistance Committee] Source Book on Concepts and Approaches linked to Gender Equality*. Paris: OECD
- Denton, F. (2002) *Gender: The Missing Link to Energy for Sustainable Development: Rethinking Gender Dynamics and Strategies through Sustainable Energy Services and Integrated Solutions*, policy paper prepared by Enda Tiers Monde – Energy Programme Senegal for presentation at the World Summit on Sustainable Development (WSSD), August/September 2002, Johannesburg, South Africa
- Dutta, S. (2002) *Programme Development in the Area of Improved Labour Saving Options For Mountain Women*, MEI (Energy) Internal Working Paper No. 2002/2. Kathmandu: ICIMOD
- Dutta, S. (2003) *Mainstreaming Gender in Energy Planning and Policies*, background paper prepared for the Expert Group Meeting of the UNESCAP Project on Capacity Building on Integration of Energy and Rural Development Planning, June/July 2003, Bangkok, Thailand. Available on line at http://www.energia.org/pubs/papers/dutta_egmbckgr.pdf
- Dutta, S. (1997) 'Role of Women in Rural Energy Programmes: Issues, Problems and Opportunities.' In *ENERGIA News*, 1(4):11-14. Available on line at <http://www.energia.org/resources/newsletter/enarchive.html>
- ESCAP (2003) *Guidelines on the Integration of Energy and Rural Development Policies and Programmes*. New York: United Nations, Economic and Social Commission for Asia and the Pacific
- Fong, M.; Wakeman, W.; Bhushan, A. (1996) *Toolkit on Gender in Water and Sanitation*, Gender Toolkit Series No. 2. Washington DC: World Bank
- Feenstra M. (2002) *Towards A Gender-Aware Energy Policy: A Case Study from South Africa and Uganda*, Master's Thesis. Enschede: University of Twente, Department of Public Administration and Political Science and Technology and Development Group
- Gurung, J. (ed) (1999) *Searching for Women's Voices in the Hindu Kush-Himalayas*. Kathmandu: ICIMOD
- ICIMOD (2002) *Incorporating Needs and Roles of Women in Water and Energy Management in South Asia – Capacity Building of Women in Rural Areas of the Himalaya*, Project Document for ICIMOD and UNEP

- Kabeer, N. (2003) *Gender Mainstreaming in Poverty Eradication and the Millennium Development Goals: A Handbook for Policy-Makers and Other Stakeholders*. Ottawa: Commonwealth Secretariate/IDRC/CIDA. Available on line at <http://web.idrc.ca/ev.php>
- Karlsson, G., Oparaocha, S. (2003) 'The Road to Johannesburg and Beyond: Networking for Gender and Energy.' In *Energy for Sustainable Development* 7(3): 62-67. Available on line at <http://www.ieiglobal.org/esd.html>
- Longwe, S.H. (1990) *From Welfare to Empowerment: the Situation of Women in Development in Africa. A Post-UN Women's Decade Update and Future Directions*. Women in International Development, Michigan State University, Working Paper # 204. Michigan: Michigan State University
- Longwe, S. (1991) 'Gender Awareness: the Missing Element in the Third World Development Project'. In Wallace, T.; March, C. (eds), *Changing Perceptions: Writing on Gender and Development*, pp. 149-157. Oxford: Oxfam
- Morna, C.L. (2000) *Mainstreaming Gender in Water and Sanitation*, literature review for the South African Department of Water and Sanitation, Gender Links, Johannesburg
- Moser, C. (1993) *Gender Planning and Development: Theory, Practice and Training*. NewYork: Routledge
- Oxaal Z.; Baden, S. (1997) *Gender and Empowerment: Definitions, Approaches and Implications for Policy*. Briefing paper prepared for the Swedish International Development Co-operation Agency, SIDA Report No 40. Stockholm: SIDA
- Parikh, J. (1995) 'Gender Issues in Energy Policy'. In *Energy Policy*, 23:(9) 745-754
- Ramani K.V. (2002) 'Energy as an Instrument of Women's Economic Empowerment'. In *ENERGIA News*, 5(1): 8-10. Available on line at <http://www.energia.org/resources/newsletter/enarchive.html>
- Pfohl, J.(1997) *Mainstreaming Gender in Water, Environment and Sanitation (WES) Programming*, draft. New York: UNICEF
- Rijal, K. (1996) *Developing Energy Options for the Hindu Kush-Himalayas: Rethinking the Mountain Energy Development Paradigm*, Discussion Paper Series No. MEI 96/1. Kathmandu: ICIMOD
- RSPN (2003) *Women in Energy and Water Management: Bhutan Case Study*, a report submitted to ICIMOD, Kathmandu, Nepal, by the Royal Society for the Protection of Nature, Bhutan
- RSPN (2004) *Women in Energy and Water Management: Country Report Final*, a report submitted to ICIMOD, Kathmandu, Nepal by the Royal Society for the Protection of Nature, Bhutan
- RSPN (2004) *Women in Energy and Water Management: Policy Guidelines*, a report submitted to ICIMOD, Kathmandu, Nepal by the Royal Society for the Protection of Nature, Bhutan
- SIDA (1997) *A Gender Perspective in the Water Resources Management Sector*, Publications on Water Resources No. 6. Stockholm: Swedish International Development Cooperation Agency, Department for Natural Resources and the Environment
- Sharma, B.; Banskota K. (2005) *Capacity Building of Women for Energy and Water Management in Rural Areas of the Himalayas, Final Report*. Kathmandu: ICIMOD/UNEP (forthcoming)

- Skutsch, M.M. (1994) *Gender in Energy: How Some Major Donors See It*. Enschede: University of Twente, Technology and Development Group
- Skutsch, M.M. (1997) *Gender in Energy Training Pack*. Occasional Paper No. 9. Enschede: University of Twente, Technology and Development Group
- Skutsch, M. (1998) 'The Gender Issue in Energy Project Planning: Welfare, Empowerment or Efficiency?' In *Energy Policy*, 26(12): 945-55
- TERI (2003) *Women in Energy and Water Management: India Case Study*, a report submitted to ICIMOD, Kathmandu, Nepal, by The Energy and Resources Institute, New Delhi, India
- TERI (2004) *Women in Energy and Water Management: Country Report Final*, a report submitted to ICIMOD, Kathmandu, Nepal, by The Energy and Resources Institute, New Delhi, India
- UNCED (1992) 'Global Action for Women Toward Sustainable & Equitable Development' Agenda 21, Chapter 24, *Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992*. New York: UN
- UNDP (2000) *Bio-energy Primer: Modernized Biomass Energy for Sustainable Development*. New York: United Nations Development Programme
- UNDP (2001) *Generating Opportunities: Case Studies on Energy and Women*, Misana, S.; Karsson, G. (eds). New York: United Nations Development Programme
- UNDP (2004) *Gender Energy – A Toolkit for Sustainable Development and Resource Guide*. New York: United Nations Development Programme, Bureau For Development Policy. Available on line at <http://www.undp.org/energyandenvironment/>
- UNEP/RELMA-in-ICRAF (2005) *Rainwater and the Millennium Development Goals*, brochure distributed by the Rainwater Partnership Secretariate. Nairobi: UNEP/RELMA-in-ICRAF
- Venkateswaran, S. (1995) *Environment, Development and the Gender Gap*. New Delhi: Sage
- WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation (2004) *Meeting the MDG Drinking Water and Sanitation Target : A Mid-term Assessment of Progress*. Geneva: World Health Organisation, and New York: United Nations Children's Fund
- WEDO (2004) *Common Ground: Women's Access to Natural Resources and the United Nations Millennium Development Goals*. New York: Women's Environment and Development Organization. Available on line at http://www.wedo.org/sus_dev/common1.htm#top
- Wickramasinghe, A. (2003) 'Gender and Health Issues in the Biomass Energy Cycle: Impediments to Sustainable Development'. In *Energy for Sustainable Development*, 7(3). Available on line at <http://www.ieiglobal.org/esd.html>
- WICEE (2004) 'Water and Energy – Precious Resources', author Wuppertal Institute for Climate, Environment and Energy. In *Promotion of Resource Efficiency Projects (PREP) 2*: 4-5. Available online at <http://www.wisions.net>
- UN/WWAP (2003) *UN World Water Development Report: Water for People, Water for Life*. Paris, New York, and Oxford: UNESCO and Berghahn Books. Available online at <http://www.unesco.org/water/wwap>
- Young, K. (1993) *Planning Development with Women: Making a World of Difference*. London: Macmillian

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