

# Session 6

## Gender in Water and Energy Management

**Time: 2½ hours**

### Preparation

#### Purpose of the Session

The purpose of this session is to allow participants to understand the role women have been playing in managing water and energy resources for domestic use and the problems they are facing in managing day-to-day water and energy needs. The session also aims to build an understanding of the gender-related roles that influence women's work burden in managing the water and energy needs of the household. Ultimately, participants will be made aware of how mainstreaming gender in the water and energy sector is critical to achieving a number of Millennium Development Goal (MDG) targets.

#### Learning Objectives

By the end of this session the participants will be able to

- assess the role of women in the management of water and energy sources for domestic purposes
- understand the impact of water and energy resource scarcity on the lives of women
- understand the need to mainstream gender to achieve the MDGs from the perspective of gender equality

#### Session Content

- A. Role of women in water and energy management
- B. Water and energy resource scarcity and their impacts
- C. Gender mainstreaming and the MDGs

#### Materials

Flipcharts, marker pens, white board, coloured pens, masking tape

#### Handouts

- 6A Worksheet – Household Water and Energy Management Pattern
- 6B Rural Women's Role in Domestic Energy Management
- 6C Time Allocation for Water- and Energy-related Activities in India and Nepal
- 6D Worksheet – Impact of Water and Energy Source Scarcity in Local Areas
- 6E Coping Mechanisms for Energy Source Scarcity
- 6F Water Source Scarcity and Innovative Measures: Example from UNEP/ICIMOD Project Sites in Almora District, Uttaranchal, India
- 6G Examples of Inclusion of Women in Energy and Water Development Projects
- 6H Mainstreaming Gender in Energy and Water Policies
- 6I Gender Equality Action Frame

#### Trainer's Preparations

Collect together the materials and handouts for the session.

## Activities

### A. Role of Women in Water and Energy Management

#### Step 1

- Distribute Handout 6A to each participant and ask them to fill it in individually, listing the water- and energy-related work carried out by male and female members in their households and the time involved.
- Ask the participants to analyse the tasks performed by each individual, the time taken, and the drudgery involved.
- Ask each participant to present their matrix to the whole group.
- After the presentations, make it clear that women take almost the whole responsibility for water and energy management of a household.

#### Step 2

- Distribute Handouts 6B and 6C on women's role in rural energy management and time taken for different tasks. Explain that most of the work to manage the household water and energy needs is performed by women and children. Scarcity of resources means that women work even longer hours.
- Referring back to the discussions on the gender division of labour and gender-related issues in Session 4, explain further as to why it is the responsibility of women to manage water and energy within the household. Who suffers more and why? Who is more responsible for this situation? What social implications (gender stereotype/prejudices) are there in doing this job?

### B. Water and Energy Resource Scarcity and the Impacts

#### Step 1

- Ask participants to share their problems related to scarcity of water and energy sources, and how they cope.
- Divide the participants into three groups and give each group Worksheet 6D to fill in together.

#### Step 2

- Reassemble the participants and ask each group to share their findings with the plenary group.
- Distribute Handout 6E and compare with the participants' findings. Explain to the group the impact of water and energy resource scarcity on the lives of women.
- Distribute Handout 6F and discuss briefly how water and energy resource scarcity can be addressed through women-focussed projects using the example of the UNEP/ICIMOD project

### C. Gender Mainstreaming and the Millennium Development Goals

#### Step 1

- Distribute Handout 6G with two case studies about including women in mainstream development projects.
- Analyse the two cases and show how far each project has considered gender mainstreaming.
- Explain the need for mainstreaming gender for equal opportunity and to achieve the Millennium Development Goals (MDGs). Distribute Handout 6H.

#### Step 3

- Explain how gender equality is the main purpose of MDG 3 and how water and energy also address other MDGs.
- Distribute Handout 6I and explain that although this course focuses on integrating women in energy and water activities, this is just one aspect of working towards gender equality. The framework in the handout is provided for information and to promote further thought after the course is over.

**6A: Worksheet – Household Water and Energy Management Pattern**

Task	Person Involved (tick the correct box)			Time Required in a Day (hrs/mins)					
	Male	Female	Both	Winter			Summer		
				Male	Female	Both	Male	Female	Both
Cook food									
Fetch water									
Collect firewood									
Collect fodder									
Grind grain									
Clean house									
Make dung cakes									
Chop wood									
Child care									
Other household chores									

Make a list of each task in the management of water and energy, with the name of the person and the time involved.

## Handout

### 6B: Rural Women's Role in Domestic Energy Management

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

*Source: Dutta 2003*

#### Activity Matrix on Domestic Fuel Management in Rural India and Nepal

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

M = task typically performed by men; W = task typically performed by women, C = task typically performed by children  
*Source: Dutta 1997*

## 6C: Time Allocation for Water- and Energy-related Activities in India and Nepal

Activities	India	Nepal <sup>1</sup>
<b>Fuelwood collection</b>		
Women	0.65	2.37
Men	0.57	0.83
<b>Fetching water</b>		
Women	1.23	0.67
Men	0.04	0.07
<b>Food processing</b>		
Women	1.42	0.70
Men	0.27	0.20
<b>Cooking</b>		
Women	3.55	2.10
Men	0.03	0.38
<b>Average Total Work Time/Day</b>		
Women	9.07	11.88
Men	5.07	6.53

<sup>1</sup> For Nepal, fuelwood collection includes leaf fodder collection  
Sources: Tinker 1990; Kumar and Hotchkiss 1988

Hours per day spent by men and women as recorded in two studies in India and Nepal in 1988 and 1990

Activities performed by women	Almora	Chamoli	Pithoragarh
<b>A. Outdoor activities</b>			
Agriculture	4.21	4.05	4.16
Animal husbandry	0.72	0.69	0.77
Fetching water	1.15	1.33	1.50
Fodder collection	1.85	1.75	2.14
Fuelwood collection	2.12	1.79	2.26
<b>B. Indoor activities</b>			
Cooking	2.30	1.36	1.27
Washing clothes	0.62	0.91	0.86
Cleaning house	0.52	0.79	0.70
Grinding and husking	0.56	1.26	1.16
Care of children/aged	0.82	0.55	0.74
<b>Total work time/day</b>	<b>14.87</b>	<b>14.48</b>	<b>15.56</b>
<b>C. Leisure and recreational activities</b>	1.58	1.36	1.52

Source: TERI 2004

Hours per day spent by women as recorded in a study in selected districts of Uttaranchal, India, in 2004

### Women in water and energy management in India and Nepal

The UNEP/ICIMOD project in Uttaranchal and Himachal Pradesh in India, and Palpa and Dhankuta in Nepal, observed that women take two to three hours or more per day to collect fuelwood and water in these areas. Water and wood scarcity was observed at all the project sites. Fuelwood consumption in the hill areas of Bhutan, India, and Nepal comprises 60% to 70% of total energy consumption. The routine household work, including cooking, washing clothes, cleaning, and others, requires 15 to 17 hours a day in each of these countries. The project sites were in hill areas where women experience great drudgery, especially in collecting fuelwood, fodder, and water, and grinding grain. In India and Nepal, most of the task of water and fuel collection falls to women and children.

## Handout

### 6D: Worksheet – Impact of Water and Energy Resource Scarcity in Local Areas

Resource	Constraints	Traditional Coping Mechanisms	Implications
Cooking fuel			
Water			
Fodder			
Home-bound micro-enterprise			

## 6E: Coping Mechanisms for Energy Source Scarcity

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

Source: Dutta 2003

## Handout

### 6F: Water Scarcity and Innovative Measures: Example from UNEP/ICIMOD Project Sites in Almora District, Uttaranchal, India

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**Naila**, a small village of twenty-four families in Almora district, faced an acute scarcity of drinking water. The Government of India has tried to provide safe tap water, but has not been able to fulfil the water needs of the area. The situation was getting worse over time, especially during the summer season when women had to spend all night waiting in line to fill their vessels. A group of men from TERI visited the site to collect information and met one woman social worker who said that people can barely collect 40 litres of water even after travelling 6 km every day during the summer months. People cannot provide water to domestic cattle; some even sell water to other people. For washing clothes and bathing, the community members travelled 10 km away from the village twice a week.

Infiltration well technology was identified as the only feasible option for overcoming the water scarcity situation. Women contributed land for this innovative scheme and each household contributed INRs. 200 for the construction of the well. It took a month to construct. Water is lifted using a hand pump installed inside the covered well. Even though each family gets 4-6 vessels of water a day after TERI constructed the well, and the water quality is now better, there is still not enough water to meet all the people's requirements. Each family takes the responsibility for opening and closing the tap twice a day on a rotational basis. All the families, irrespective of their economic and social status, work in unity. No problems or resentment have surfaced to date – a unique example of social harmony.

The situation was the same in **Bajeena** village, another project site in Almora district. With the gradual drying up (very low discharge) of the only traditional water source (a spring), women had to wait 45 minutes to fill a 15-litre jar. To overcome this situation of water scarcity, women's groups in the village decided to restore the whole of the open barren land above the water source through micro-reservoirs and plantation activities to recharge the traditional spring. In consultation with the women's group and the local NGO, TERI supported these ideas after carrying out a detailed investigation of the area and of slope stability, including measuring the water discharge in the traditional spring. In the monsoon, women constructed 14 micro-reservoirs spread spatially on barren slopes to trap and store rainwater, which could then percolate into the hill and recharge the traditional village water source. Women also planted 2500 saplings of multiple species (such as medicinal plants, and trees for horticulture, fodder, and fuelwood) on 5 hectares of the hill slopes to ensure slope stability, generate income, and ensure the availability of firewood and fodder. Grazing was controlled through social fencing. Restoring the land above the water source resulted in the discharge of water increasing. Even in the dry season, the discharge, was double that of the previous year.

*Source: TERI 2004*

## 6G: Examples of Inclusion of Women in Energy and Water Development Projects

### Rural Energy Development Programme (REDP)

The Rural Energy Development Programme (REDP) in Nepal aims to enhance rural livelihoods through micro-hydro systems and through the expansion of sustainable rural energy along with economic development and poverty alleviation. It stresses community mobilisation, bottom-up participatory planning, and decentralised decision making. Productive income-generating activities are targeted as the intended end uses of the energy supplied, and skills training is provided to promote agricultural and home-based business. The project ensures equity and empowerment of women and men through the establishment of separate community organisations. It provides equal opportunity for training in ICS to both men and women and mobilises women in equal numbers as a strategy for mainstreaming gender. Two out of five micro-hydro schemes in remote areas of far-western Nepal (where women have low social status) are operated and chaired by women.

The equal opportunities offered have had a visibly positive impact on mobilising women and integrating them into mainstream activities. The women in community organisations have a distinct voice in local affairs and their capability for independent and collective action has increased.

*Source: Dutta 2003, REDP 2002*

### Strategy of UNEP/ICIMOD Project on Women, Energy and Water

The UNEP and ICIMOD project was carried out in the three Himalayan countries of Bhutan, India, and Nepal. The project sought to promote the integration of women in the decision making, implementation, and management of household energy and water initiatives that better reflect their roles and needs and are environmentally sound.

The provision of water and energy for household use was the entry point for enhancing women's condition and for poverty alleviation. The main thrust of the project was to bring women into mainstream development through a process of efficiency, equality, and empowerment. The project followed participatory action research, placing women at the forefront of every aspect of the project. The programme was implemented after gender analysis, needs assessment, and gender sensitisation was carried out in the project areas. The programme stressed community mobilisation, bottom-up participatory planning, and decentralised decision making. The project sought to tackle the question of how women can be empowered by building their capacity to meet their water and energy needs in a way that frees them from excessive workloads and drudgery and allows them to engage in more productive activities to enhance their income (productive needs) and improve their position in society (strategic needs). Productive income-generating activities were introduced through skills training to harness the time saved, and a support mechanism was put in place for home-based businesses and micro-enterprises. Women were given training to operate simple technologies, such as the installation of ICS, a running water mill, drip irrigation, and water harvesting. In Nepal, men were also involved in some of the income-generating activities.

Within the short implementation period (around two years), the project has made a difference in the lives of women and their families and communities. Women have not only experienced a reduced workload and less drudgery, but have also improved their incomes through the productive use of saved time for various income-generating activities. Some women have emerged as successful energy entrepreneurs, for example, operating an LGP depot, producing and selling solar driers and ICS, and establishing technology demonstration centres. The formation of women-only groups has clearly helped this process. Women feel comfortable taking charge of a technology in such groups instead of handing over control to men and being relegated to the role of passive 'beneficiaries'. Some women's groups (for example in Nepal) whose level of confidence and empowerment has been adequately enhanced have now started providing leadership in their communities in mixed groups. Women specific initiatives can create an empowering space for women and act as an important incubator for ideas and strategies that can later be transformed into mainstream interventions. The project concluded that women-centric interventions in water and energy interventions are a fundamental prerequisite for empowering women and making the gender mainstreaming approach into a successful strategy for achieving gender equality.

*Source: Sharma and Banskota 2005*

### 6H: Mainstreaming Gender in Energy and Water Policies

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At the project level, mainstreaming gender means that projects have to be designed to ensure that women as well as men are entitled to participate and benefit from a project. The ultimate goal is to achieve gender equality. Gender mainstreaming does not preclude women-only projects. Sometimes special provisions have to be made so that women can overcome the obstacles that have prevented them participating in the past. One approach to reducing inequalities in project participation is positive discrimination in favour of women, enabling them to take up management and decision-making positions so as to achieve the ultimate goal of gender equality. It supports women-only (or men-only) projects designed as strategic interventions to address aspects of gender inequality and promote greater equality. In situations in which women may not be in a position to participate on an equal basis with men due to their heavy workload and the entrenched sociocultural norms that preclude women from speaking up in front of men, mainstreaming may not work. Likewise the men in a society may oppose women-only projects as they consider women's empowerment as a threat to traditional gender roles and relations. It is therefore often considered necessary to focus on women-only projects up to a certain threshold, beyond which a mainstreaming approach is followed.

Although the energy and water sectors are women's domain, both as users and managers, women are not yet part of the mainstream. Mainstreaming gender in energy and water policies requires an understanding of women's needs and interests which could be different from those of men and are a fundamental factor to take into account. The strategies for mainstreaming gender are as follows.

- Gender equality as a fundamental value is reflected in development choices and in institutional practices.
- Efforts to achieve gender equality are brought into mainstream decision-making processes and are pursued from the centre rather than the margins.
- Increased involvement is ensured of women in decision-making processes, both formal and informal (social values, development directions, and resource allocations).
- Development cooperation, development programmes, and developing countries should have a common goal of gender equality.
- The main aspect is not ensuring equal numbers of men and women in programme initiatives, but to change policies and institutions to promote gender equality (Side 1996).

There are certain practical and social constraints to incorporating women into energy and water policies, which still stand as barriers. These include a lack of ownership over resources, restrictions on participating in activities outside the home, the lack of income sources, lack of education and access to knowledge and information sources, as well as lack of opportunity to become involved in enterprises.

#### **The Millennium Development Goals**

The Millennium Development Goals, which were adopted by the UN General Assembly in 2000, established a set of time-bound and measurable goals for combating poverty, hunger, disease, illiteracy, environmental degradation, and discrimination against women. Even though energy is not mentioned as a separate goal, addressing the energy and poverty linkage is going to be a critical factor in the attainment of the MDGs (Sharma and Banskota 2005).

Limited access to energy is a problem that has a disproportionate effect on women, especially in rural areas. Greater attention to the needs and concerns of women in energy policies could help governments promote the overall development goals of poverty alleviation, employment, health, and education through improved energy policies. Addressing gender issues in energy and development is of vital importance to the Millennium Development Goals for two reasons. In order to eradicate poverty, policies and projects must clearly focus on the disadvantaged groups in society, and in most developing countries women suffer the most from poverty and environmental degradation. Conversely, because of their traditional responsibility for household energy management, women are likely to benefit the most from access to improved energy services. The second reason relates to the role of energy services as an input to development. Within the energy sector, especially household energy, gender differences and inequalities have serious consequences for needs, uses, and priorities, and these must be recognised and reckoned with if long-term sustainable development goals are to be met (Dutta 2003).

Mainstreaming Gender in Energy and Water Policies cont.

## Linking water and energy project impacts to the Millennium Development Goals and Targets

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

Source: Sharma and Banskota 2005

## 6I: Gender Equality Action Frame

Types of Actions at Different Levels	Issues to Consider
<b>Organisational Level</b>	
Information system and research	<p>Collating and commissioning targeted gender analytical research</p> <p>Establishing a sex -disaggregated information system</p>
Building capacity of staff in management, policy making, and implementing agencies	Developing staff gender -related skills, knowledge, and commitment through training, workshops, consultancy support, and provision of guidelines
Promoting gender equality in policy making, management, and implementing agencies	<p>Development of procedures to promote equality in recruitment and career development</p> <p>Identifying and addressing gender -related issues in the organisational culture</p>
Solidarity and networking	Activities to link together individuals and groups working for gender equality
<b>Beneficiary/Implementation Level</b>	
Addressing women's and men's practical needs	Recognising and addressing practical needs/problems identified as particular to either women or men, e.g. developing domestic labour saving devices for women
Promoting equality of access and benefits	Promoting greater gender equality in relation to resources, services, opportunities, and benefits, e.g. increasing women's access to previously male dominated employment opportunities ( use of tools and technologies, management)
Increasing equality in decision making	Promoting women's and men's equal participation in community-level decision-making institutions and in community representation
Addressing the ideology of gender inequality	<p>Working with beneficiary groups to reflect on gender norms, traditions, and values, e.g. participatory community workshops on various aspects (linking the focus areas)</p> <p>Addressing inappropriate gender stereotypes in work, in the media, or in programmes and projects</p>
<i>Source: DFID 2002</i>	