Chapter 1
Introduction

Background

Why women in water and energy management?

Water and energy are essential resources for human survival and well-being. Today, some 1.1 billion people lack access to improved water, with Asia having the highest number of people unserved by a clean water supply (65% – WHO/UNICEF 2002). Projections show that by 2025 as many as four billion people, or one half of the world's population, could live in conditions of severe water scarcity, especially in Africa, the Middle East, and South Asia (WICEE 2004). At the same time, more than 2 billion people in developing countries, particularly in rural areas, still continue to use traditional fuels such as wood, charcoal, and dung for cooking, and lack basic modern energy services.

Over the years, poverty, increasing population, and inappropriate development interventions in the Himalayas 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 consequent social dislocation. Mountain women in the Himalayas are finding it increasingly difficult to meet their daily water and energy needs in a sustainable manner as a result of deforestation, a scarcity of freshwater resources, and increasing population pressure. 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 (Figure 1.1).

Besides lost opportunities, women are also faced with a variety of health hazards from fetching heavy loads to cooking for long hours in a smoky environment (Dutta 2003; UNDP 2001). The annual number of deaths attributable to biomass indoor air pollution is over 1.6 million people worldwide and the casualties are predominantly women and children (WHO 2002). Environmental health and hygiene problems related to a shortage of clean water is another hazard, again especially for women. 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). Despite the significant positive effects on rural livelihoods of improved access to water and energy services, women's time and effort saving (drudgery reduction) as well as women's health issues have not received the attention they deserve (Denton 2002; Clancy et al. 2002).

Greater attention to the needs and concerns of women in these areas could help governments promote overall development goals such as poverty alleviation, employment, health, and education through improved water and energy policies (UNDP 2004a; Dutta 2003). However, most energy- and water-related institutional and technological interventions in the past have not only ignored the special circumstances and needs of women, but have also failed to consider women as active partners in water and energy programmes, despite women's prime responsibility for managing the household's water and energy needs (ICIMOD 2002). Not

Figure 1.1: Collecting water in Bhutan

only do the needs identified by male and female groups differ significantly (men focus on physical infrastructure including roads, and electricity; while women identify social infrastructure including health, education, and drudgery-reducing technologies as important), but also the benefits of renewable energy technologies are inequitably distributed between men and women. The EnpoGen study clearly showed, for example, how men and women perceive the benefits of electricity differently. Women and men have different perceptions about the benefits of energy: for example, men see the benefits of electricity in terms of leisure, quality of life, and education for their children; while women see electricity as providing the means for reducing their workload, improving health, and reducing expenditure (Clancy and Skutsch 2003; Cecelski 2002)

Despite the differential impacts of energy policies between men and women, policy makers continue to treat energy policy as gender-neutral (Clancy et al. 2004). The focus of most energy policies in the past has been mainly on centralised (supply-driven) power plants and other commercial fuels with little attention paid to conventional energy (biomass fuels), which still accounts for 80% of all household fuel consumption in developing countries, most of it used for cooking done primarily by women (Figure 1.2). Meeting the energy needs of women generally calls for a shift in focus to the demand side of the energy sector, well-integrated with water and other rural development activities.

As with energy, focusing on women's domestic water needs has a multiplier effect leading to benefits that go beyond good water project performance. For example, better access to water reduces time spent collecting water and the drudgery involved in this, giving women more time for income-generating activities, meeting the needs of family members, and allowing children – especially girls – to attend school, resulting in intergenerational impacts.

Figure 1.2: Carrying wood for cooking and heating

Although water and energy are inseparably connected to enhancing livelihood options, they are generally not treated in a combined/integrated way to address the problems women face in the daily collection and use of these resources. A lack of energy often restricts the availability of fresh water and vice versa. While conventional energy production is dependent on the availability of water, water delivery relies on energy for pumping (WICEE 2004). Similarly, women's time and contributions are often undervalued, and the invisibility of women's labour perpetuates policies that reinforce subordinate roles for women. The lack of value placed on women's time and work tends to makes it difficult to implement policies designed to reduce the drudgery they face.

Past failure to recognise the special needs and roles of women has not only worsened environmental degradation due to the continued, unsustainable exploitation of biomass and water resources, but has also limited the participation of women in most development interventions. Although women play a key role as collectors, transporters, users, and managers of domestic water and traditional fuels, they have been excluded from participation in policy formulation and decision-making processes due to their low political and economic status. This has led to a situation where women are bound up with the conditions of disempowerment, as they are unable to voice their concerns and make strategic choices (Sharma and Banskota 2004). By reducing their heavy work burden and drudgery it becomes possible for women to participate in development activities, thereby addressing their productive and strategic need – empowerment. Focusing on women's needs and roles in water and energy management can make significant differences in meeting development challenges, including the Millennium Development Goals (MDGs). Women throughout the world continue to have fewer options and opportunities than men, and in many countries women face overt inequalities, marginalisation, and discriminatory practices. 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). This marked gender inequality clearly underscores the importance of focusing on women's needs and roles for gender mainstreaming.

Lessons learned from the region

The limited benefits of the many past energy- and water-related interventions are the result of a poor focus on women. Women's participation has remained marginal, and despite capacity building efforts, their self-esteem and confidence has remained low. However, women continue to utilise biomass and water resources judiciously despite their increasing scarcity. Experience suggests that in the absence of opportunities to earn a cash income, women have little incentive to adopt the water and renewable energy technologies that help save the time and effort they expend in collecting these resources (quoted in Clancy and Skutsch 2003). The improved cooking stove (ICS) programme initiated during the early 1980s in India and Nepal failed completely because the technologies were designed without consulting women and did not address their actual needs, including the need for capacity building (ICIMOD 2002). In the past, most programmes were biased towards fulfilling the needs of the male members of the family without adequately addressing the needs of the women. Male members preferred physical infrastructure (roads and electricity) and income-generating activities, while female members emphasised the importance of social infrastructure (health and education) and drudgery-reducing technologies. For instance, solar home systems fit well with meeting men's need for entertainment but not with women's cooking needs. Biogas systems meet the need for cooking energy but in some cases they have increased women's workload, as dung and water have to be added daily to the pits, increasing the women's work burden. Likewise, the provision of electricity does not address the cooking energy crisis in rural areas since many of the activities performed by women require process heat for which electricity is neither the most appropriate nor the cheapest option (Clancy and Skutch 2003). Experience shows further gender differences in the perception of the benefits of renewable energy technologies. In an assessment of biogas plants in India, women saw time saving in terms of reduced fuel collection and food preparation, whereas men saw time saving in terms of faster cooking and more timely availability of meals. Women valued smoke reduction both for the health benefits and the decreased drudgery of cleaning smoky pots. Men placed a higher value on savings in fuel and money (Dutta et al. 1997). Understanding how the priorities of women might differ from those of men thus becomes critically important for devising gender-sensitive water and energy policy strategies.

The manuals currently available are unable to address the special roles and needs of women and largely focus on the needs and priorities of men. In addition, most training programmes have also been geared towards building men's capabilities. The approach and/or methodology used in these training programmes is not effective in training women, given their different roles and needs. It is therefore not uncommon to see a high participation of women in the social mobilisation phase of a programme with this participation gradually tailing off during the implementation phase. As a result, males generally tend to take over from females, even in water- and energy-related training activities.

In short, an important lesson learned from past experience is the genuine need for women-centric water and energy projects that cater to the practical needs of women and help them to

meet their productive and strategic needs. This would help women gain increased control over their lives and enhance their access to water and energy resources and appropriate services. A project with women as the primary stakeholders in the planning, implementation, and monitoring of the activities would therefore be the best model.

The Women, Water and Energy Project

Project rationale

From January 2002 to December 2004, the International Centre for Integrated Mountain Development (ICIMOD) supported by the United Nations Environment Programme (UNEP) and Swedish International Development Assistance (SIDA) implemented a project 'Capacity Building of Women for Energy and Water Management in Rural Areas of the Himalayas' which was designed to test a new approach to water and energy development that addressed the issues raised by the experience of earlier interventions, as outlined above.

The project was designed to promote the integration of women in the decision making, implementation, and management of household energy and water initiatives by building their capability to organise themselves, identify their needs and roles, and implement energy- and water-related technologies. The project distinguished between the practical, productive, and strategic needs of women in the context of energy and water. Practical needs might be met by technologies that reduce drudgery, save time, and improve health through improved access to energy and water. Productive needs would be met by technologies that provide an income to women, utilising the time saved by improved access to water and energy. Strategic needs would be fulfilled by processes and technologies that empower women to choose their own technologies and improve their standing in society. The project was based on the underlying principle that any new interventions for women in the Himalayas should aim to reduce hours of work and drudgery, minimise hazards and risks 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 in other areas. The underlying assumption is that reduced drudgery for women and girls through increased access to energy, and to better sources of energy for lighting, cooking, and productive activities can have a dramatic effect on women's education, literacy, nutrition, health, economic opportunities, and involvement in community affairs, with significant benefits for their families and communities as well.

In order to focus on the needs, perceptions, and aspirations of women, it is essential that they be at the forefront of the dissemination of technological options that are pro-environment and pro-poor in the rural hill and mountain context. Emphasis should be given to forming groups made up exclusively of women. The project was envisaged as primarily focusing on women's needs and identifying technological options that not only catered to their needs and empowered them, but which would also enhance environmental sustainability. Applying a participatory approach, the project followed the process of 'learning by doing'.

Two hill and mountain settlements were selected from each of three countries (Bhutan, India, and Nepal) for the participatory action research.

Since the participatory process in itself is resource-intensive, the project stressed the need to document the methodologies employed and the experiences gained in order to prepare

training manuals, policy guidelines, and video films to suit the needs and aspirations of women living in mountain areas. This is crucial for the replication of the process in similar areas, and to ensure that the results can used by different extension agencies and grassroot NGOs to train women's groups in the management of pro-environment, pro-poor, and pro-women water and energy technologies.

Major objectives

The main objective of the project was to promote the integration of women in decision making, and in the implementation and management of household energy and water initiatives that better reflect their roles and needs and are environmentally sound. This was achieved by building the capabilities of women to organise themselves in order to identify their needs and to implement energy- and water-related technologies that help them in reducing drudgery, improving productivity, and widening their options for more productive and useful time allocation.

The specific objectives were as follow.

- Ensuring self-sufficiency in meeting needs at the community level through the enhancement of traditional water and energy technologies, and the development and adoption of new technologies. The new technologies would contribute to sustainable development and protection of the environment, for example, water harvesting for household irrigation, fuel-efficient stoves, solar energy, biogas, and briquettes from biomass waste.
- Creating awareness and an enabling environment for women in areas relating to water and energy management through training and institutional strengthening.
- Preparing policy guidelines, including an institutional framework for the replication of appropriate and innovative water and energy resource management practices that are pro-women, pro-environment, and pro-poor that can be carried out in similar environments in the region and in other regions.
- Creating awareness about the activities of the pilot project through video shows in participating communities that can also serve as a training tool to enhance the replication of the programme by extension agencies operating in the mountain areas of Nepal, Bhutan, and India.

Project implementation

The expected results, planned activities and outputs, and details of the implementation framework, evaluation, and financing mechanism of the project as given in the project document are summarised in Annex 1.

The project was implemented in two hill or mountain settlements each in Bhutan, India, and Nepal. The national collaborating partner NGOs were 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. RSPN implemented the pilot itself in Bhutan, whereas TERI and CRT/N selected local NGO partners in India and Nepal to implement the project activities. The basic project approach and implementation framework are summarised in Figure 1.3.

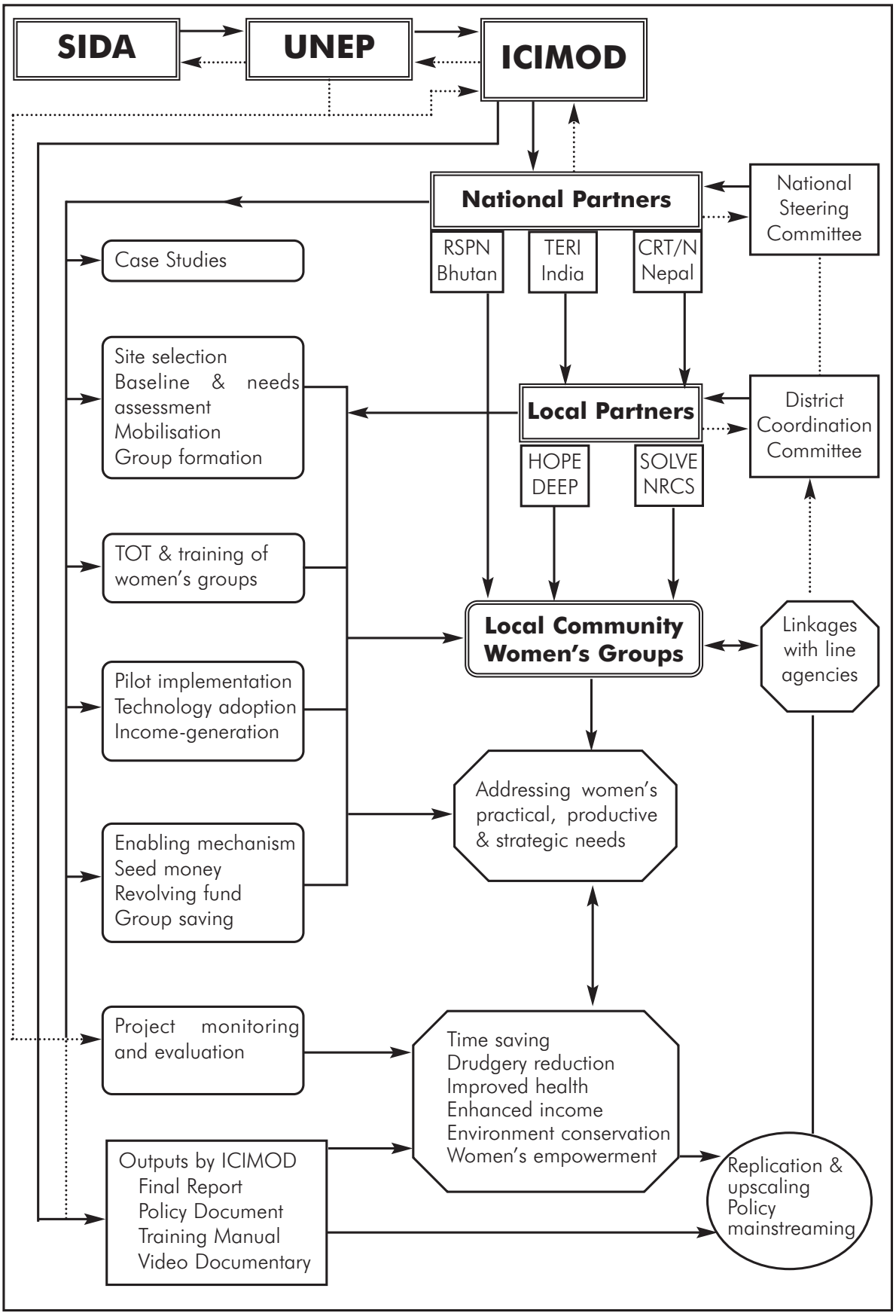

Figure 1.3: Project approach and implementation framework

Case studies were carried out to understand how women's roles and needs could be incorporated into the use and management of energy and water resources. Gender sensitisation and gender analysis were conducted to raise awareness and to increase the confidence of project participants and women beneficiaries through training, group meetings, and social mobilisation for institutional capacity building. Technology manuals were prepared in national languages to train selected women as trainers in a TOT workshop. Observation/exposure visits and exhibitions on various technologies were also organised. Various fuel-efficient and drudgery-reducing technologies were promoted according to women's prioritised needs.

Women face considerable constraints in obtaining loans as they do not own collateral or have legal rights to land. Thus the project established revolving funds to facilitate access to credit and promote income-generating activities. The project also encouraged women to set up group savings schemes. Seed money was provided for demonstrations and to create the revolving funds. The implementation process was documented in training manuals, a video documentary, policy guidelines, and this detailed report for the future design, scaling up, and replication of similar projects in the region.

Organisation of the Report

This publication provides a detailed account of the project learning. It is divided into six chapters, the first of which is this Introduction. The process involved in the implementation of the project, the preparatory activities, the project sites selected for programme implementation, and the major issues emerging from the case studies conducted in each country are described in Chapter Two. Chapter Three is devoted to a discussion on the implementation of the pilot project, focusing mainly on the training component. Chapter Four highlights the various water- and energy-related technologies adopted by the women along with the types of income-generating activities taken up. Chapter Five looks at the impacts of the project in major areas of concern such as workload and drudgery reduction, capacity building through training and social mobilisation, and productive use of saved time for income-generating activities. Finally, the major experiences and lessons learned and their implications for the future design and implementation of similar projects are highlighted and major conclusions and recommendations made.