

Introduction

In the Hindu Kush - Himalaya Region, a fuelwood crisis has evolved, due primarily to excessive dependence on forest biomass energy. Inadequacy and inflexibility of traditional technologies, lack of new arable land, and the subsistence level of the rural economy are contributing factors. While total forest resources are abundant in areas of Bhutan, the northeastern Indian Himalaya, and Sichuan and Yunnan, China, where exploitation is limited due to inaccessibility and high transportation costs, deforestation near human settlements is widespread. It is ironic that the Region, endowed with one of the largest hydropower potentials in the world, should face an energy shortage. Rural energy is accorded high priority by all countries of the Region, as well as by bilateral and multilateral agencies. Yet many important energy issues relevant to research, training, implementation, coordination, and monitoring and evaluation, remain unresolved.

The question of how energy is related to the rural development framework is particularly complex. The challenge is to achieve a balance in a situation of continuing deforestation and pressing need for improved standards of living in rural areas. Throughout the Region, the importance of decentralisation as a means to achieve rural development is being reiterated. Although the district is often considered an appropriate planning unit, the diversity of the Region allows for little generalisation as to the most effective means. Nevertheless, scope exists for evolving a general approach in decentralised energy planning.

A systematic data base, upon which to wrestle with this issue, is largely non-existent, which makes analysis of alternative solutions to energy problems a difficult task. Yet, understanding of the traditional economies, population trends, and ecological balance is essential to permit interventions and promote innovations, while preventing detrimental environmental impacts.

Ongoing national efforts can be made more effective by information exchange and the sharing of experience in rural energy development. While location - specific approaches and responses are essential, lessons learned in one area will have implications for other areas. Mutually reinforcing and successful approaches can be systematised for the benefit of the Region as a whole.

With this target in view, ICIMOD initiated an intensive eighteen - month review of energy development in the Hindu Kush - Himalaya. Reports at national, regional, and subregional levels, in addition to issue and theme papers, were prepared by national energy institutions and professionals actively involved in mountain development. Several in - depth working papers were also prepared by ICIMOD energy specialists. Country review activities encompassed Bhutan; Nepal ; Sichuan, Yunnan, and Tibet in China ; the western, central, and northeastern Indian Himalaya; and Pakistan.

The principal national collaborating institutions which conducted review activities were: the Energy Research Institute, Academia Sinica, Beijing ; the Tata Energy Research Institute, New Delhi ; the Water and Energy Commission, Kathmandu ; the Appropriate Technology Development Organisation, Islamabad ; the Science and Technology Division, Planning Commission, Thimphu ; and the Bangladesh University of Engineering and Technology, Dhaka. (Refer to Annex 3. Background papers.)

The International Workshop on District Energy Planning and Management for Integrated Mountain Development, held in Kathmandu, 3 to 5 May 1986, represents the culmination of ICIMOD's Phase I review activities on rural energy planning. The fundamental objective has been to review work completed and in progress in the energy sector, to share experiences, and to look ahead to a future of collaborative effort and activity. This Workshop Report has three principal sections. The first encompasses the findings of state - of - the - art reviews from Bhutan, China, India, Nepal, and Pakistan, undertaken prior to the Workshop, and provides brief thematic descriptions. Themes developed in the reviews provide the basic framework for the Workshop papers and discussions, which elaborate the complexities involved in the task of decentralised energy planning and management. The concluding section looks ahead to the proposed collaborative work initiated by ICIMOD in the sphere of rural energy planning.

The themes were subsequently elaborated to encourage and assist the discussions of the Workshop, in identifying research, training, and policy concerns. Five major themes were identified:

The first theme of **District Energy Planning Framework** provided the setting for energy development, in terms of the existing institutional and organisational structures. The second, third, and fourth themes focused respectively on **fuelwood problems**, **non-wood energy options** and the **interrelations between energy and other sectors**. The final theme was the **planning and policy implications** that could be drawn from the previous discussions.

The specific objectives of the Workshop based on the review findings were:

- To review experiences concerning energy planning and implementation in the participating countries of the Hindu Kush-Himalaya Region

- To understand how the evolution of policies, as well as the planning and implementation framework of government and related agencies, could effectively meet energy needs and priorities of local communities
- To assess potentials and constraints of candidate energy technologies, financing arrangements and research and extension mechanisms by focusing particularly on the motivation and participation of local communities and organisations
- To analyse the relations of energy with the mountain economy, environment, and production systems

Participants at the Workshop included energy planners, policy makers, practitioners, and researchers from five of the countries of the Region (Bangladesh, China, India, Nepal, and Pakistan) and the representatives of selected international agencies (Refer to Annex 5).