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RURAL ENERGY AND RELATED TECHNOLOGIES



HMG, WECS

Report of the
Seminar on Rural Energy and Related Technologies in Nepal



**Organised jointly by Agricultural Development Bank, Nepal,
International Centre for Integrated Mountain Development, and
Water and Energy Commission Secretariat,
HMG, Nepal**

**Kathmandu, Nepal
26-28 March, 1991**

ICIMOD Workshop Series

The International Centre for Integrated Mountain Development began professional activities in September 1984. The primary concern of the Centre is to search for more effective development responses to promote the sustained wellbeing of mountain people. One of the continuing activities of ICIMOD is to review development and environmental management experiences in the Hindu Kush-Himalayan Region. Accordingly, International Workshops are organized in major fields to review the state of knowledge and practical experiences, and also to provide opportunities for the exchange of professional expertise concerning integrated mountain development.

Workshops held included :

- **International Workshop on Watershed Management in the Hindu Kush-Himalaya**
14-19 October, 1985, Chengdu, China
- **International Workshop on Planned Urbanisation and Rural Urban Linkages in the Hindu Kush-Himalaya Region**
25-29 March, 1986, Kathmandu, Nepal
- **International Workshop on Off-farm Employment Generation in the Hindu Kush-Himalaya**
3-5 May, 1986, Kathmandu, Nepal
- **International Workshop on District Energy Planning and Management for Integrated Mountain Development**
17-19 May, 1986, Dehra Dun, India
- **International Workshop on Mountain Agriculture and Crop Genetic Resources**
16-19 February, 1987, Kathmandu, Nepal
- **International Workshop on Women, Development, and Mountain Resources: Approaches to Internalising Gender Perspectives**
21-24 November, 1988, Kathmandu, Nepal
- **International Symposium on Mountain Environmental Management**
11-14 April, 1989, Kathmandu, Nepal
- **International Expert Meeting on Horticultural Development in the Hindu Kush-Himalayan Region**
19-21 June, 1989, Kathmandu, Nepal
- **International Expert Meeting on Apicultural Development in the Hindu Kush-Himalayas**
21-23 June, 1989, Kathmandu, Nepal
- **Regional Workshop on Hydrology of Mountainous Areas**
11-15 December, 1989, Kathmandu, Nepal
- **Consultative Meeting on Mountain Risk Engineering**
20-22 February, 1990, Kathmandu, Nepal

These Workshops were attended by experts from the countries of the Region, in addition to concerned professionals and representatives of international agencies. A large number of professional papers and research studies were presented and discussed in detail.

Workshop Reports are intended to represent the discussions and conclusions reached at the Workshop and do not necessarily reflect the views of ICIMOD or other participating institutions.

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RURAL ENERGY AND RELATED TECHNOLOGIES

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International Centre for Integrated Mountain Development

Kathmandu, Nepal

ANNEX 1

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Cover photographs:	Display during the Seminar at the Venue
Right	Hydropower Turbine Models - Kathmandu Metal Works
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In the preparation of this report, an attempt has been made to reflect the views and interpretations expressed by the participants at the workshop. These views and interpretations are not attributable to the International Centre for Integrated Mountain Development (ICIMOD), and do not imply the expression of an opinion concerning the legal status of any country, city, or area of its authorities, or concerning the delimitation of its frontiers or boundaries.

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FOREWORD

The Seminar on Rural Energy and Related Technologies was held in Kathmandu from the 26 to 27 March, 1991. It was held partly in recognition of the fact that, in rural communities, the energy needs can no longer be met by relying on traditional sources and that adequate provision has to be made to find sustainable supplies of energy in the very near future.

It was, therefore, a matter of great honour to the sponsors that the Rt. Honourable Prime Minister, Mr. K. P. Bhattarai, inaugurated the seminar and that the Honourable Minister for Water Resources and Local Development, Mr. M. N. Nidhi, presided over the inaugural session. Their presence was instrumental in emphasising the importance of the theme of the seminar.

Rural Energy planning and management in the mountain areas of the Hindu Kush-Himalayan Region have been a priority in the ICIMOD mountain development agenda. This is in recognition of the fact that development in these countries cannot be conceived in isolation of and independent of developments in the field of rural energy.

Decreasing forest resources have put a great strain on the people of Nepal in terms of meeting their basic energy needs. People not only have to spend more time in collecting fuelwood but also have to meet their energy needs by using inferior forms such as agricultural residue and animal dung. This in turn means that the traditional use of these forms as plant nutrient and organic manures also diminishes.

Alternative energy sources, although full of potential, are yet to make a significant impact in terms of easing the overall situation. Technologies, such as micro-hydro, have as yet only realised a fraction of their potential in terms of the number of units established. Biogas development and dissemination have been less than satisfactory in areas of high potential for their uses, e.g. the *Terai*. Energy conservation technologies could be popularized all over Nepal to help conserve fuelwood use. Other non-conventional technologies, such as solar and windpower, are hardly being used at all in the rural energy sector.

The seminar deliberated upon important issues concerning rural energy and related technologies and has made suggestions and recommendations as to how they may be dealt with. The participation of technology producers, promoters, and facilitators in the seminar helped them understand each other's requirements.

ICIMOD's experience over the years has been that alternative technologies remain unexploited unless they are used in tandem with other main energy sources. It has also been observed that a decentralised approach to the planning and management of energy resources is necessary to achieve this end. Specific issues such as the relevant role of the

private sector, government sector, lending agencies, and NGOs, their strengths in pursuing a decentralized policy, and the constraints they face in doing so, assume great importance. It is with the objective of arriving at consensus concerning the future programmes of these organizations that this Seminar on Rural Energy and Related Technologies was organized by ICIMOD in collaboration and partnership with the Agricultural Development Bank, Nepal, and the Water and Energy Commission Secretariat of His Majesty's Government of Nepal.

I would like to take this opportunity to thank all those who worked so hard to make the seminar a success. In particular, thanks are due to Suresh Sharma, the coordinator, and the authors of the papers presented. Last, but not least, thanks are due to ICIMOD's cosponsors, the Agricultural Development Bank of Nepal and the Water and Energy Commission Secretariat of His Majesty's Government of Nepal. Without their wholehearted collaboration, the Seminar would not have been such a success.

E. F. Tacke
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ICIMOD