
Opening Session

Dr. T. S. Papola chaired the Opening Session. He welcomed all the participants to the consultation and expressed his regrets about the absence of the Chinese delegate. Dr. Papola stated that the energy development programme was one of the most important programmes of the Mountain Enterprise and Infrastructure (MEI) division of which he was the head. The mandate of the division, was poverty reduction through diversification of mountain economies and the promotion of eco-friendly activities. He briefly described the programmes of the division in mountain areas and emphasized two special features. Firstly, energy systems in mountain areas had to be eco-friendly, using renewable resources, and decentralized. Secondly, energy is an essential input in terms of meeting the basic needs of mountain people and in terms of poverty reduction. Finally, Dr. Papola expressed the hope that interaction with the participants on energy-related issues would be forthcoming during the workshop.

Mr. Egbert Pelinck, Director General of ICIMOD, delivered the opening address. He welcomed the participants and remarked that opportunities for greater co-operation would surely increase through interaction amongst various experts, planners, developers, promoters, and manufac-

turers. He thanked the representatives of the Canadian International Development Agency (CIDA) for their generous support to the consultation.

Mr. Pelinck stressed that mountain people had relied upon renewable energy resources, but due to the growing aspirations and increasing population, the prevailing technologies were unsustainable. He added that, although renewable energy resources and technologies had received attention in the 1970s, the era of cheap fossil fuels during the 1980s prompted many to shy away from renewable energy development, and this was unfortunate for mountain regions. He cited an example from the HKH Region in the context of overcoming the gross disparity between the potential and current contributions of renewable energy as a major challenge. He pointed out that energy use in the mountains had received scant attention, because the government and donor agencies, as well as the private sector, were more interested in large-scale energy development and their focus had mainly been on providing energy from the mountains to meet the growing needs of urban areas and the plains. He stated that attention is rarely given to the sustainability of use and the potential of energy for generating incomes for mountain communities, and that moun-

tain-specific conditions were inadequately reflected in national energy strategies, policies, plans, and programmes.

Mr. Pelinck said that this was the reason why ICIMOD had embarked on a programme for renewable energy technologies suitable for mountain areas. He cited two important questions in relation to the energy sector. Firstly, how can energy use and development in mountain areas be adopted in such a way as to overcome the main constraints to development such as inaccessibility and fragility? Secondly, how can one make use of the comparative advantages that mountains provide for sustainable development, based on the biological, ecological, and cultural diversity of the region?

Mr. Pelinck outlined the policies and technologies that could be discussed during the consultation. The issue raised regarding policies was which national policies favour the use of renewable energy systems and which the use of non-renewable energy? Another issue was the national energy-related policies that favoured mountain people and those that had a negative impact on them. Regarding technologies, he emphasized the types of renewable energy technologies suitable for mountain communi-

ties, taking sufficient account of the mountain specificities; what are the quantities and qualities of energy services required for different purposes? and how can social and economic benefits be maximised in both the short and the long term? and what are the potentially harmful and potentially positive effects on the environment of the use of different energy sources, taking into account the global imperative to reduce CO₂ emissions and local imperatives for maintaining adequate vegetation cover to prevent soil erosion and landslides? Regarding economics, he discussed whether the market prices of various sources of energy included the environmental and social costs to the nation as a whole; and whether we had enough knowledge about the costs of investing in the production, commercialization, and use of various types of energy. The last issue was the need to identify appropriate institutional mechanisms to ensure the development and sustainable management of the right type or mix of renewable energy resources and technologies at the household, village, and district levels. Such identification should be carried out with full participation from the ultimate beneficiaries and other stakeholders in the energy programmes.

Mr. Pelinck expressed the hope that the meeting would be able to produce policy recommendations suitable for mountain areas, in general, but specifically for Nepal. Finally, he expressed his hopes for a successful outcome and that the participants would have a pleasant stay in Nagarkot.

Mr. Jaipal Shrestha, Environment Advisor and SPEF Coordinator, Canadian Cooperation Office, welcomed all the participants to the consultation on behalf of CIDA and the Canadian Cooperation Office. He explained the importance of RETs within the HKH Region. He described the HKH Region as being a most beautiful area in terms of scenic beauty, cultural heritage, and natural endowments. He added that the



Participants in Regional Experts' Consultation on Implications of National Policies on RETs

people of this area were facing severe hardships in terms of energy needs, therefore they had to depend on the ever-diminishing forest resources to meet this demand, and this resulted in deterioration of the ecosystem in the area. He mentioned the promotion of environmentally sound water and natural resource management as being one of the key Overseas' Development Assistance (ODA) priorities of CIDA in Nepal. He emphasized the contributions of ICIMOD to the field of mountain development and expressed his pleasure to be supporting the consultation initiated by ICIMOD. He hoped that the policy recommendations from the consultation would help the government and affiliated stakeholders in the adoption of RETs in the mountains of Nepal. He added that the knowledge and expertise shared in the consultation would increase the understanding of this important sector. Finally, he thanked ICIMOD for providing him with an opportunity to express his point of view.

Dr. Kamal Rijal, Coordinator, welcomed the participants and reviewed the past activities and the present focus on the energy sector by ICIMOD. ICIMOD had been concentrating on the key issues of energy in the mountains since 1984. From 1987 to 1989, a decentralized energy planning and management programme to develop methods of rural energy planning and management in mountain regions; to disseminate them among district-level officials; and to train trainers from selected institutions was undertaken. From 1990 to 1993 ICIMOD shifted its focus to generating more knowledge about renewable energy technologies (RETs) and their suitability in the context of mountain areas. For the development of a sustainable energy system in the HKH Region, ICIMOD formulated the energy programme with the objective of identifying appropriate policies and investment strategies. With this objective in mind, ICIMOD introduced a programme on Sustainable



Improved Cooking Stove Installed in a Remote Mountain Household of Nepal

Energy Development in Mountain Areas through the Four-year Regional Collaborative Programme, 1995-1998. Regarding mini- and micro-hydropower, from 1994-1995, ICIMOD prepared five country reports, organized national seminars and training programmes, and held a Consultative Meeting of International Experts. As part of its energy programme, ICIMOD commissioned a series of studies on the 'Analysis of Present Energy Use Patterns in Urban and Rural Areas of the HKH Region' in 1996. As a follow-up activity, a 'Regional Meeting on Energy Use in Mountain Areas' was organized in April 1997. A programme on 'Solar Energy Networking' commenced in mid-1996.

Dr. Rijal explained that the study funded by CCO had three important components: a) national policy studies in four countries of the HKH Region, namely, China, India, Nepal, and Pakistan; b) four case studies on renewable energy technologies (RETs) in Nepal, namely, micro-hydropower, biogas technology, improved cooking stoves, and solar technologies; and c) a Regional Expert's Consultation. The main components of the national policy studies were to review and examine the implications of national/provincial policies, to review and assess the implication of sectoral policies, to review

institutional arrangements, and to recommend a comprehensive policy package. Detailed case studies on biogas, micro-hydropower, improved stoves, and solar photovoltaics were carried out by the Centre for Rural Technology, Nepal. The terms of reference for case studies included a review of technology, financing mechanisms, dissemination, promotional approaches and R&D with regard to each technology, a review of policy initiatives, a review of institutional arrangements, analysis of environmental implications, and review and analysis of existing information. Field surveys were carried out based on structured discussions and interviews and on a participatory rural approach. The main issues examined during the field survey were factors that influence the success and failure of RET promotion and dissemination, gender, institutional and management and financial aspects, the role of each stakeholder in the project or programme, and strengths and weaknesses of various forms of ownership and management practices.



Solar Water Heaters Installed on the Rooftop of an Apartment Building in Kunming, China

He highlighted the objectives of the consultation, which were to assess the implications of national policies, to identify factors that influence the adoption of RETs, and to recommend policies specific to Nepal. The expected outcomes of the consultation are increased understanding of the implications of national policies, improved knowledge of their status, identification of key factors, and policy recommendations.

Dr. Rijal added that Mr. Pelinck had raised a number of pertinent issues with regard to the development of renewable energy. These issues in themselves gave rise to a number of questions related to methodologies, implementation, and planning. He spoke about how to estimate the environmental cost of energy production and use and to internalise social costs while evaluating various energy options. He emphasized the minimisation of interference in energy-investment choices without disrupting the economy and allocative efficiency and how to influence the existing decision-making procedure of utilities so that RETs are also considered as appropriate supply options. He raised questions about how to change energy users' investment incentives to promote RETs and how to accelerate investment in renewable energy commercialisation without compromising concerns for social equity? Finally, he raised questions about how to overcome the existing institutional barriers, in view of the fact that the provision of energy has always been the responsibility of centralized supply-side institutions where implementation of decentralized RETs demands decentralized energy institutions. Finally, Dr. Rijal expressed the belief that these questions and issues would be dealt with in depth during the consultation.