Promoting Technological Interventions Related to Water and Energy Resources

A Case Study from Nepal

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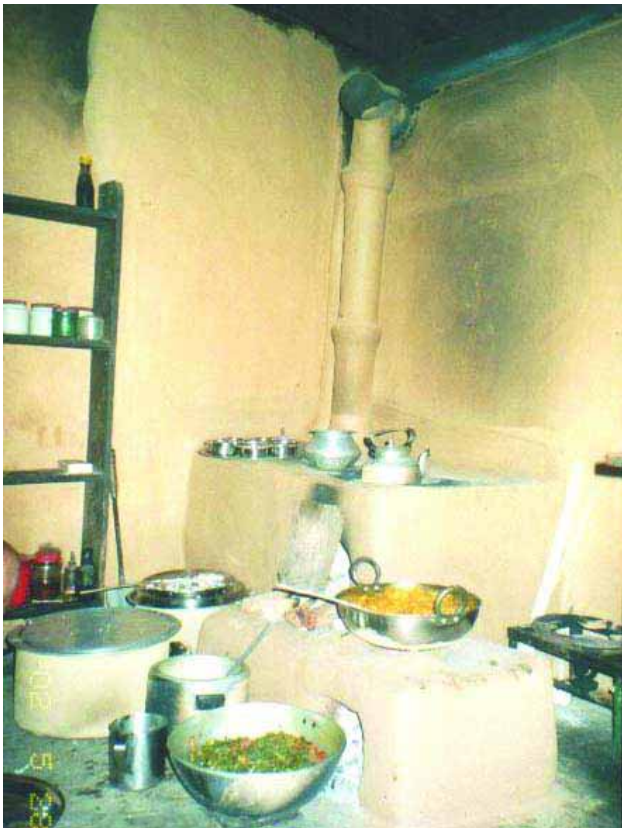
Water and energy are prime resources vital for human survival and well-being. Their scarcity has serious implications for livelihoods. Over the years, poverty, population growth, and the growing demand for firewood and agricultural land to cultivate food have resulted in deforestation and the degradation of natural resources.

In the Himalaya, the scarcity of water and energy has the most serious effect on women. They have to travel away from their homes to meet the water and energy needs of their households. With the increase in work hours and drudgery, opportunities for income generation and other livelihood options are also jeopardised. This perpetuates poverty among women and has been a serious problem in many parts of the Himalaya.

To address this problem and diversify livelihood opportunities for mountain communities, especially women, the Centre for Rural Technology Nepal (CRT/N) with support from ICIMOD/UNEP, implemented a two-year pilot project from April 2002 to September 2004 in two micro-watersheds of Nepal – Palpa and Dhankuta districts in the west and east, respectively. The project was implemented in coordination with local partner organisations, the Nepal Red Cross Society (NRCS) in Palpa and the Society of Local Volunteers Effort, Nepal (SOLVE-Nepal) in Dhankuta.

The project sought to integrate women in decision making, in implementation, and in the management of household energy and water initiatives. This was done by building the women's capacity to organise themselves in order to identify their needs and roles and to implement energy and water related technologies that reduce drudgery and enhance their options for productive employment and socioeconomic advancement. The project focused on both meeting women's immediate practical needs and on enhancing opportunities to meet women's productive and strategic needs. The project followed a participatory 'learning by doing' approach and placed the women in the forefront at all stages of the project. It focused on utilising the strengths and operational mechanisms of the existing women's groups as an entry point for project intervention. This created an enabling environment for women, who could identify their water and energy needs and implement technologies according to their felt priority. The creation of a district coordination committee at the project level was another distinct feature of the project approach, which later became instrumental in building rapport



Centre for Rural Technology (CRT), Nepal

A combination of improved cooking stove and water collection technologies make for cleaner kitchen environments

and strengthening coordination and linkages with various district-level line agencies supporting the project in different ways.

Impacts

Project interventions through orientation, demonstration, and skills development training in various technologies and in capacity building have led to the introduction of simple, appropriate technologies and have enhanced people's ability to maintain the technologies. Some of the more popular include improved cooking stoves (ICS), drip irrigation, solar dryers, solar plastic houses, rainwater harvesting tanks, and wastewater management systems.

The introduction of these technologies along with support mechanisms such as a revolving fund, group savings, among others, have generated visible impacts on the lives of women. Use of these technologies has reduced their workload and the drudgery involved in collecting water and energy, improved their health and that of their families through reduced indoor air pollution, and wider options for the productive use of saved time for income generating activities.

Almost all women members at the project sites have adopted ICS. Women have also emerged as energy entrepreneurs, producing and marketing the stoves. The immediate impact has been the reduction in indoor air pollution and its associated health hazards. Many women have installed drip irrigation systems, recognising not only the scarcity of water but also the need to irrigate vegetables. Vermi-composting has increased in farm and vegetable production in the project areas. Women have produced vegetables and other food crops both for sale and home consumption. The beekeeping training provided has resulted in its adoption as a new micro-enterprise, providing a source of income for many women at both project sites.

The project has had a positive impact on the livelihoods of the women and their communities, reducing drudgery and opening up livelihood options.

Women have used their collective strength to establish group nurseries and vegetable collection centres to sell their produce at distant markets. They have also established a village technology centre to demonstrate and enable the speedy transfer of field-tested technologies already adopted by the women in other areas. Linking the women's group with other line agencies has helped them acquire support for capacity building and has also helped generate wider impacts. The community groups in the project have become proactive and have initiated activities on their own such as improving sanitation in their village through the construction of toilets, and regular village clean-up campaigns. They have also initiated adult literacy classes and training in tailoring – activities that were unplanned for in the project.

Elizabeth Khaka

Mud-covered, three-hole metal improved cooking stove in HP, India

Within a short implementation period of just two-and-a-half years, the project has had a considerable impact on the livelihoods of the women and their communities in terms of reducing drudgery and opening up livelihood options. The impact has extended from the micro-level to the meso-level in the district. The District Development Committee of Dhankuta is firming up the success of the project and replicating it in Bhedetar Village Development Committee, where the nationally-recognised Village Development Programme (VDP) is currently operating in 62 out of 75 districts of Nepal. This has profound policy implications in terms of integrating the project concept into the development planning process in Nepal.

Sustainability and replicability

The project has focused on training key local women as trainers in water and energy management along with enterprise development activities. The local trainers have been responsible for an exchange of information among the villages and have started to provide the information required through various technical support services to other villages and communities. Local women now have the skills and confidence to operate the micro-enterprises which have been developed with various market linkages and channels. Business development training for the promotion of their products, such as fresh vegetables, honey, candied fruits, pickles, and dried vegetables has created new income generating opportunities. A vegetable marketing group has also been formed in each project site, activated by the villagers themselves. Accordingly, the marketing committee chairperson hauls surplus vegetables from the members and regularly takes them to distant markets. Coordination and linkages with various line agencies in the district has also contributed to leveraging funds and other support activities. In addition, the line agencies and organisations have taken the project as a platform for integrating their own project activities in the area. CRT/N has also taken the project beneficiaries as the target group for the SARI (South Asia Regional Initiatives for Energy)/Energy Small Grants Programme-supported Solar Dryer Project since December 2004 to ensure continuity of the project's success. Under the SARI/Energy project, a further twelve groups of women have been formed within only six months. Earlier, it took two years to reach these many groups.

Conclusion

Addressing women's development needs, reducing their workload and drudgery, and improving their health, income, and position in society require that a bundle of services and multiple technologies be offered, using an integrated participatory planning approach. This will enable women to access improved energy and water services and enhance their entrepreneurial and technical skills. Awareness development and mobilising the communities and local organisational capacity building should be key components of any project. Through these components project activities can be launched and upscaled. The approach also helps replicate good practices in adjoining villages. Establishing village technology demonstration centres can be an effective model for information dissemination and demonstrating the positive impacts of the project in and around the village. The creation of a revolving fund and improved community access to micro-credit are effective mechanisms to help start micro-enterprises in mountain communities whose members have limited financial means to meet their productive needs and to establish group funds. The peer transfer of knowledge and skills on the adoption of technologies and the management of the groups has contributed to more groups being formed in the adjoining areas. Based on its demonstrated success, the project has been selected as an example of good practice by the Wuppertal Institute for Climate, Environment and Energy, Germany. Focusing on women's needs and roles in water and energy can make a big difference in meeting the development challenge of the mountains areas. Policy makers and development practitioners can readily take up these experiences, replicate them, and adapt them to their particular needs and settings.

Xu Jianchu

ICIMOD Director General J. Gabriel Campbell tests the quality of local energy sources in the Tibet Autonomous Region.

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