

Rural electrification in Nepal: Experiences of an integrative social contextual approach

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Introduction:

The word 'electrification' conjures up bright lights and urban expensive high technology powered gadgets, often considered as an unlikely intervention for the poor. This has led to the slow rate of high-grade energy technology intervention in remote or rural areas of developing countries, where over two-thirds of their total population live. However, there have been successful cases of bringing in electrification, in the form of micro-hydro plants (smaller than 100kW usually), solar or biomass options to light up rural areas. Apart from lights and domestic usage, they provide energy to power small scale industries as well. Nepal has had almost a two and a half decade of historical experience in bringing electric power to its villages, initially with mechanical systems to run milling machines and later when electrification came in the 1970s. Some systems are as remote as 7 days walk away from the main roadhead.

In Nepal, electrification projects are no longer seen as technical interventions alone. Practitioners and critics conclude that 'electricity if targeted at the poor alone' would not be a realistic approach. This is often because the poor alone cannot risk the heavy financial investments that are required to build and maintain an electrical system. In addition, the lack of proper feasibility studies, quick assessments, and non-participation of the beneficiaries has led to failures in some cases. However, alternative approaches are widely applied in electrification development interventions. The need to get communities actively involved is becoming a crucial factor for sustenance and improved liveli-

Electrification rurale au Népal: Expériences d'une approche sociale intégrée

Au Népal les projets d'électrification ne sont plus limités aux aspects techniques. Le besoin d'associer les communautés est devenu un facteur important pour l'amélioration du niveau de vie. L'énergie hydro-électrique est utilisée pour alimenter de petites unités industrielles. A travers plusieurs études de cas, l'auteur considère que l'approche à privilégier doit concilier les ressources naturelles nécessaires au fonctionnement du système électrique et le potentiel culturel, social et économique des communautés et des individus.

hoods. This article is based on some of the Nepali experiences in the micro-hydro sector.

A wider social strategy for intervention:

In Nepal, organisations and individuals working in the field of rural electrification has realised that the only way to be successful, while keeping in mind the poor, is to integrate technology within a wider social strategic approach. Participation of communities are key to understanding and implementing projects.

Often, energy constraints are about the same for both the rich and the poor. The wider social approach does not consider them as separate entities but that they are bound to each other in complex relationships that need to be fully understood. Therefore, thorough investigations and full par-

ticipation by all sections of the community is increasingly becoming prominent. Often, participation is achieved through a series of meetings, group formations, exposure trips and training for women, men and unemployed youths. In fact, electrification could reach the poor by maximising and tapping the potential of the richer sections of the community. One of such example is the case of Tikhedhunga presented below.

Within the integrative social context, the intervention approach takes into consideration all members of the community and how the benefits could be widely and equitably distributed. In many projects, benefits are largely unequal between the rich and poor, a major point of contention for the critics of rural electrification projects. To make this

In Tikhedhunga village, Kaski district, Nepal where the Annapurna Conservation Area Project (ACAP) works, a 40kW micro-hydro scheme provides service to several lodges and 102 houses. The locals had participated fully and provided active contributions in cash and kind to build the scheme. An elected Village Electrification Committee manages the scheme on behalf of the community. In this village, they have decided that the lodge owners, who have more income (this village falls under one of Nepal's famous trekking circuits) should pay almost double the tariff than ordinary households (Figure 1). Power is used continuously by lodges during daytime to cook with electricity while households can light up their homes during the night.

This example shows a good case of cross-subsidising the poorer members of the community by the other group of higher income earners. The chances of the price of electricity to remain stable and affordable are higher and will have a greater positive impact for the poorer households who may otherwise by themselves be unable to risk the technology and would have had to continue living in darkness.



Figure 1: Electricity used for showers in tourist lodge

possible, poorer sections of the community are all included to meetings and given equal opportunities to be members of the Village Electrification Committee. For example, in the successful community mobilisation process implemented by the Rural Energy Development Project (REDP), a UNDP project there are many cases where both poorer men and women have been actively participating in the decision making processes by forming their own social groups. They are allowed equal rights to attend trainings and start income generation activities or engage in-group saving and credit schemes. It is not necessarily only with lighting that communities benefit. Sometimes, as in the following REDP case,

micro-hydro plant succeeds because of the integration of resources, both human and natural.

Gaining Equity with informative choices and rightful participation

While considering the wider intervention approach, the issues of equity and right informative choices comes uppermost in successfully integrating the poor. Theoretically, the benefits of electrification to all sections are almost the same; however, their capability to utilise it may not be. In many schemes for example, equal participation of all members of the community is made compulsory but the benefits do not accrue to the same. Some electri-

fication plants in Nepal show this gap primarily because issues like information on usage of electricity, tariffs etc are not discussed properly with the poorer sections of the community. The fact that they are less educated makes the informative process a top-down one in many instances. Equity is possible only by including the poor, especially women, to participate actively in the provision of all informative processes. The following case gives a general picture of the benefits women accrue from an electrification scheme.

The right information and choices based on it have been crucial to the promotion of benefits to the poor. Information sharing can lead to communities valuing the range of option. In Nepal's remotest areas where the government body Remote Area Development Committee (RADC) works, micro-hydro was their main concentrated energy program to replace expensive kerosene or inefficient lighting woodfuels. However, in recent times, they have also taken in solar panels as another option to make it more cost effective and according to peoples needs, mostly for lighting purpose only. Beneficiaries therefore were therefore provided with a wider informative choice. In Ghandruk village where the community successfully runs a 50kW scheme, it has been now realised that initial phases had not concentrated on providing equal information to all members of the community. Today, even if there is equal participation in terms of labour provision and meetings, poorer people have not been able to access more electricity as the richer people (who often owns lodges) have already used up majority of the limited power supply.

The way forward:

Although, low cost electrification schemes have often been placed to be the right alternative to fossil fuels and expensive grids, the lack of incentives - financial,

Garlic farming in Pinthali village

The 11 community male and female groups from Pinthali in Mangaltar VDC, Kavre Palanchowk, are not only proud of the effort in bringing electricity to their village but also an added pride comes with the usage of the same water canal for irrigating land. The land earlier used for vegetable farming did not bring them income as cultural practices disallowed them to sell vegetables. Therefore, the villagers decided to shift to garlic farming and the impact has been found to be extremely positive. Ran Singh Lama, the Chairman of the Working Committee explains: "Today, about 76,302 sq.m of land has improved with additional irrigation from the canal. This has added 90,000kgs of garlic growth each year and brings a profit of at least 1.5 lacs (US \$1- approx. Nepali Rupees 72)". Nearly 80 per cent of the people from the village benefit from this activity. Mr. Salaam Singh Lama, another village leader praises the efforts of all the villagers particularly the community mobilisation processes to have made it a success. To improve this system, the Pinthali farmers have recently started to cement 1km of the canal. Thus, electricity and an economic gain can sometime come hand in hand, if people are involved as well as committed towards effective results.

(Source: REDP, 2000)

Benefits to women from a micro-hydro scheme

In the village of Harichour, Baglung district, Nepal an enterprising MHP entrepreneur, Capt. Ganesh Bahadur Khatri has been operating a 25kW micro-hydro plant for over 15 years. The mill serves about 380 households during the day-time and electricity is provided to 215 households in the evenings for about 5 hours. The impact has been positive especially to women. Prem Kumari, a user, feels that the replacement of unhealthy kerosene lamps has created a favourable impact especially for the children who can now study with better lighting. Also, the health centre for women had benefited largely with lights as emergency cases in the evenings could be treated well.

The accessibility to the electrically driven mill has provided a big difference to women's lives. While before, women had to walk about 1 hour to grind grains in the traditional water mill, it has been now reduced to a 5 minute one. Hira Gauchan, another user pointed out that they have more time now than before when they had to grind at least 4-8kgs of grain every morning. The mill facility has also made it easier on poorer women who were hired to grind grains by the richer houses. According to these poorer women, this time saving has allowed them to work in other productive activities. Time is equated with money and often women preferred to work and earn rather than rest.

Women also felt that the television has become an important medium for gaining access to information about political, social, cultural and economic issues. This has helped them widen their understanding particularly because they did not travel out of the village.

structural or institutional makes it a difficult proposition to follow. An integrative social approach shows promise and furthering it will only be possible with the support of all stakeholders. The key point in the participation process to gain equity and enhance information sharing is that of transparency. Often, communities feel that they are not provided all the right answers or informed inaccurately. Practition-

ers should learn to be open about the processes and its mistakes and also simultaneously create room for the communities to be transparent themselves. Open meetings involving the poor and women are crucial if equity is to be assured.

In conclusion, a gradual holistic approach not only in terms of natural resources as electrical systems demand (such as water for hydro or light for solar) but by

linking it up actively with individuals or communities social, cultural and economic potential should be the way forward. Continual assessment with communities and partners are required and equal opportunities prioritised. Low cost electrification technologies and their intervention must be continually assessed, researched, developed and disseminated. To lift the poorest of the poor out through electrification is no doubt a difficult proposition. However, to try to get there by using an integrative social approach through the right informative processes are showing positive results. A clear analysis of time, place and build up of expertise will lend a hand to improved access to electricity for all.

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Income from micro-hydro: Jogbudhha VDC, Dadeldura, Nepal

Jaya Bahadurs' case comes as one of the many in Nepal's micro-hydro interventions. This particular one comes from the efforts of the REDP, who has worked in Nepal since August 1996 concentrating its efforts in 15 districts. REDP uses energy as an intervention strategy to build up community groups as well as working with local governmental institutions. Its fully integrative method aims not only to lift people out from the reaches of poverty but also to help them create sustainable strategies. Jaya Bahadur (JB) is one such case amongst many.

JB hails from Jogbudhha VDC in Nepal's remote western district of Dadeldhura. Before REDPs intervention in his village, he had to move to India to earn cash for six months. However, from July 1997, he got involved in the REDP community mobilization programme. Soon, the community decided that he be sent to a one month operators' training and was employed as the operator for the 4 kW ShanKhola Jal Vidhyut Pariyojana (Village Electrification Programme). With a regular salary of Rs 800 per month (about US\$12), Jay is happy that he has cash for daily use and has kept aside his thoughts of going to India seeking temporary jobs. Today, JB is no longer just an operator as he also manages successfully his own community group. Where prestige is reigned supreme in Nepal's villages, he says his social standing has considerably increased. Within his group, he helps all the other members, poorer than himself to attain loan from the groups' saving credit scheme.

(Source: REDP, 2000)