

# Experiences in End-use Development and Small Industry Promotion In Salleri

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## Mini Hydropower Development in Salleri

The Salleri-Chialsa Hydropower Project with a capacity of 400kW, was constructed in the Salleri Valley, the headquarters of Solukhumbu district, under Swiss grant assistance. His Majesty's Government of Nepal (HMG/N) and the Swiss Development Cooperation (SDC) agreed to manage the plant under the Salleri Electricity Utilisation Project (SELUP), which was operational from 1987 to 1994, with the ultimate objective of establishing a public shareholding company, the Salleri Chialsa Electricity Company (SCECO), for operation and management. SCECO is now in-charge of the plant's operation and management and aims to achieve operational and financial sustainability. Self-sustainability of the plant calls for maximum use of the installed capacity by increasing the daytime load (load factor). For this purpose, SELUP had maintained a business and industrial promotion unit at Salleri-Chialsa.

## Initial Problems of End-Use and Industrial Development

### *Industrial Development*

Before SELUP started its activities, the area faced various problems which deterred end use and industrial development.

In addition to supplying electricity, SELUP provided inputs to the local entrepreneurs in the form of technical information dissemination, coordination of business ventures, and advisory services. The SELUP/SCECO efforts in this area also included assistance in preparing schemes for industrial and business ventures, preparing and acquiring technical designs and quotations for equipment, and assistance in bank loan processes.

### *Transportation and Communication*

The valley is inaccessible by road and takes about four to five days' walk from the nearest road. A scheduled but irregular air service connects Salleri to Kathmandu. Similarly, communication facilities were very poor.

### *Institutional Support to the Entrepreneurs*

There were two financial institutions, the Agricultural Development Bank of Nepal (ADB/N) and the Rashtriya Banijya Bank (RBB), in Salleri. The former finances the

agricultural sector and the agro-based industries, and the latter is a commercial bank which does not invest in cottage industries. Slow decision-making in the banking system and high interest rates on available financial assistance did not encourage end use and small industry development.

### *Technical Skills and Awareness*

The entrepreneurs lacked the capabilities for preparing schemes, proposals, and feasibility studies, and they also lacked general management and book-keeping skills. Due to the low level of education and inadequate technical know-how, local entrepreneurship was lacking. Moreover, there were no institutions in the vicinity engaged in supporting local entrepreneurs.

### *Local Resources and Market*

The lack of necessary infrastructure (energy, water, transport, communications, etc.) for industrialisation and limited availability of raw materials (available raw materials were mainly based on forests and agriculture) also adversely affected industrial development.

### Small Industry Promotion

A Handicraft Centre was the only industrial establishment prior to SELUP. In collaboration with the Small Business Promotion Project (SBPP)/GTZ, SELUP organised several training programmes for entrepreneurs on management, book-keeping, and so on. SBPP prepared the feasibility study reports for a printing press, bakery, and dry fruit industry at the request of SELUP. However, acquiring bank loans remained one of the main hurdles in industrial and end-use development.

### *End-use Development*

In the initial stages of electrification in the area, except for some households with contacts in Kathmandu and abroad, most of the people were unaware of the versatility of electricity. Therefore, SELUP started a programme to promote electrical appliances, and other potential industrial uses. The programme introduced numerous appliances, such as rice cookers, electrical kettles, mixer-grinders, irons, immersion rod water heaters, blower fans, and so on.

### *Bijuli Dekchi*

In 1990, to reduce the high power consumption of rice cookers and clay heaters and to reduce fuelwood consumption, low-wattage cookers — *Bijuli Dekchi* (450 watts) — were introduced in collaboration with the Butwal Bijuli Dekchi Company. A 50 per cent subsidy was provided from time to time for this appliance. A training programme on *Bijuli Dekchi* maintenance was conducted by the manufacturer who also provided free after-sales' services for a period of one year. This service is now provided by SCECO.

## Demonstration, Repair and Maintenance Services

A showroom for demonstration of and instruction on electrical appliances was established in Salleri by SELUP/SCECO, and electrical appliance repair and maintenance services were also provided.

## Private Electric Shop

With an increase in the demand for electrical appliances, local shopkeepers have started to market electrical appliances. This development has provided the intended relief to SELUP's activity in the promotion of electrical appliances. SCECO has now stopped marketing electrical appliances, except for the Bijuli Dekchi.

## **Results and Processes of Development**

As a result of the efforts of SELUP/SCECO, government offices, businessmen and economically-sound families started to use electricity for heating and other applications. People have started to cook meals with electricity, albeit the process of fuel switching was slow. The energy consumption pattern in 90 surveyed households is given in Table 1. The table shows that electricity has completely replaced kerosene and, to some extent, fuelwood. Consumption of dry cells, which was about 3.7 cells per household per month, has decreased drastically and evening working hours have been extended.

**Table 1: Energy Consumption Pattern of Sampled Households  
(% of households using various forms of energy)**

Energy	Lighting	Cooking	Heating	Electrical Appliances
Fuelwood	2.2	95.6	13.3	-
Kerosene	0	0	0	-
Electricity	100	35.5	11.1	82.2

Another SELUP study shows a rapid growth in installed consumer load capacity estimated at 25.6 per cent per annum, on an average between 1989 and 1994.

The following commercial and industrial units were established during the project period (December 1987 - June 1994), which is very encouraging.

Flour Mills	11	Nepali Paper Industry	3
Bakery	1	Noodles	1
Printing Press	1	Photocopy Service	2
Colour Lab Service	1	Radio and Watch Repair Services	4
Sauna	1	Public Bath	1

The distribution of the connected load in 1993 between various appliances is presented in Table 2.

**Table 2: Structure of Connected Load**

Appliances	Lighting	Cooking	Heating/Cooling	Water Heating	Household Appliances	Electronic Appliances	Tools Machines	Others	Total
Load, kW	166 (17.0)	151 (15.5)	337 (34.5)	42 (4.3)	35 (3.6)	60 (6.1)	182 (18.7)	3 (0.3)	976 (100)

\* Figures inside parentheses are in percentages.

Similarly, in order to reduce the fuelwood consumption of the Tibetan Refugee Camp in raw wool processing, the SDC has constructed a small hydel. Since then, two electric vats are being used for wool processing.

### Conclusions

- i) From June 1994, the efforts undertaken by SELUP have come to an end. The SCECO efforts should be continued.
- ii) Cooperation among local government agencies, financial institutions, and entrepreneurs is vital for small industry development.
- iii) The ADB/N, as a development bank, should take the responsibility for providing technical and financial services to local entrepreneurs in small industry development.