Why Decentralised Energy Planning and Management?

The last ten years are remarkable for the progressive increase in realisation among national policy makers and planners, as well as international donor countries and agencies, that energy plays a critical role in rural development. It is now well known that production capability in rural areas is severely limited by shortage of energy input. In response to population increase, for example, agricultural production is correspondingly raised by extending cultivated area to the forest rather than by increasing the productivity per unit area through additional energy input. This phenomenon, compounded by the extraction of fuelwood and fodder from the forest area, has contributed largely to rapid deforestation, and hence, to the imbalance in natural resource systems. To avert pressure on natural resources and also to increase productivity, there has been near unanimity in the two-fold approach to rural energy planning and management, i.e., (1) to increase energy input into the rural systems, and (2) to establish a pattern of energy conservation without undue decrease in productivity (Bajracharya).

Despite this awareness, little enhancement in the rural quality of life has been achieved. What are the reasons for such a paradox?

Low Investment Priority. Part of the problem is that most energy assistance efforts have focused on production of energy for the modern sector and commercial energy use, ignoring the fact that most rural and many urban people, and especially the poorest, will continue to rely on forest - and farm - based fuels for the foreseeable future. As shown in Table 1, external support for energy development (which serves as a proxy for national investments in the developing countries) is mostly for electricity generation and fossil fuel development.

Although official development assistance from all sources for energy development in the developing countries rose from US$ 1.2 billion to US$ 4.0 billion between 1976 and 1980, the components that bear immediate relevance to rural areas are largely ignored. Moreover, 65 per cent of total investment in the forestry sector in 1979 (see Table 2) was

Table 1. External Support for Energy Development by Subsector, 1979-1982 Average (Per Cent)

	DAC ODA	Multilateral Concessional	Multilateral Nonconcessional	DAC Export Credits
Energy Planning and Technical Cooperation	14	-	2	-
Oil	8	6	14	27
Gas	2	7	6	2
Coal	9	22	8	3
Nuclear	-	-	-	17
Hydropower	28	12	30	11
Electricity Transmission	19	43	30	4
Fuelwood, Charcoal, Geothermal, Biogas, Solar	2	4	3	1
Other and Unallocated	17	6	6	31
TOTAL	100	100	100	100

Source : OECD 1984, Table 8, Quoted by Cecelski 1986, p. 34.

devoted to industrial processing plants that could potentially cause greater deforestation. Only 11 per cent was for any kind of afforestation and reforestation schemes, and 14.3 per cent was allocated to integrated development. The emphasis on large-scale, capital-intensive schemes is presumably due to the fact that they produce measurable outputs that are relatively easy to monitor and evaluate (Cecelski 1986). Whatever the reason, the consequence is neglect in promoting relevant projects for rural areas.

Table 2. Forestry - Related Projects : Ongoing and Proposed, 1979 (Thousands US$)

	Thousands US$	Per Cent
Industrial	1,581,892	64.4
Conservation	114,611	4.6
Education	88,046	3.5
Research	32,658	1.2
Afforestation and Reforestation	270,687	11.0
Integrated Development	351,022	14.3
Technical Assistance	24,074	1.0
TOTAL	2,454,915	100.0

Source : Christopherson *et al* 1982. Quoted by Cecelski 1986, p. 35.

While little enough investment goes to the rural areas, the mountain region receives only a small share of this. The level of rural electrification and the number of pumpsets installed in the Indian states bordering the Himalaya (Table 3) may be used as indicators (Kumar). Compared to the Indian average of 64 per cent of villages electrified, the percentage in most of these states (with the exception of Himachal Pradesh and Jammu and Kashmir) is well below average. In Assam, Uttar Pradesh, and West Bengal, the relatively high figures become much smaller if the mountain villages are considered separately. Similarly, the number of electric pumpsets installed provides an even more glaring disparity. Compared to the Indian average of 52 per cent potential pumpsets installed, the percentage in the states along the Himalaya is insignificant. Both cases above indicate the smaller proportion of investment in the mountain region; other countries of the Region share similar situations.

Table 3. Electrified Villages and Number of Pumpsets in Indian States Bordering the Himalaya

States	Electrified Villages		Pumpsets Installed	
	Number	Per Cent of Total No. of Villages	Number	Per Cent of the Total Potential
Assam	11,805	53.7	2,736	1.4
Himachal Pradesh	14,594	86.3	2,324	23.2
Jammu and Kashmir	5,705	7.7	1,355	9.0
Manipur	602	30.9	39	0.4
Meghalaya	1,262	28.0	56	0.6
Nagaland	603	61.5	6	0.1
Sikkim	189	46.7	0	0.0
Tripura	1,865	39.5	944	9.4
Uttar Pradesh	63,064	56.4	507,998	21.1
West Bengal	19,201	50.4	39,492	7.9
All India	368,804	64.0	5,677,264	52.0

Source : Government of India, Planning Commission 1984, Quoted by Kumar.

Ineffective Diffusion. The villages in the mountain region are characterised by isolation from the mainstream market, inadequate infrastructural support systems, socioeconomic diversity, cultural heterogeneity, and agro-ecological variation. Although the principle of the problem is universal, the solutions require that location specificity be carefully taken into account. Unfortunately, the current paradigm of research, development, and extension within the scientific and research community, as well as extension service, assumes the applicability of uniform designs and approaches. A mass production mentality comparable to that of Western industrial economies pervades. Targets are set to disseminate specific products through uniform directives to inadequately trained extension agents. Very little emphasis is placed on the process of "fine tuning" in correspondence with local circumstances or on market surveys to suit users' preferences. Little or no flexibility is given to field officers and extension agents. The consequence is

that technological successes are sporadic at best. In the absence of adequate assurance against failures, rates of rejection are high. Furthermore, lack of follow-up services results in high rates of abandonment after targets are met. The overall impact on the rural quality of life is, therefore, less than desirable.

Whose Responsibility? A third problem relates to the question of jurisdiction. Whose responsibility is it to look into rural energy? The subject has multiple facets. Seen from the conventional sense, parts of it fall into such sectors as agriculture, irrigation, forestry, power, and cottage industries. The irony is that when rural energy is fragmented, its significance and priority are lost in the midst of other activities within each of the sectors. With the exception of India, where the Department of Nonconventional Energy Sources was established in 1983, no other country in the Region has a single agency to advocate and implement rural energy schemes in a coordinated and integrated manner.

Inadequate Data Base vs. Urgency of Action. Yet another complication arises from a double-edged problem: the absence of systematic data bases for purposes of planning and decision making on the one hand, and the urgency of immediate action programmes to avert the impending crisis of subsistence, on the other. Aggregates and average figures sometimes used in macromodels disguise the heterogeneity and diversity of the mountain areas. A few village studies exist but they are so dispersed and the methods used are so incomparable as to render them inadequate for deriving lessons on a wider basis. The present circumstances therefore warrant innovative and nonconventional approaches that combine action and research, and mutually reinforce each other in an interactive mode.

Opportunities in Decentralisation. Given the state of affairs indicated above, it is apparent that planning, implementation, and management of rural energy development in the mountain region has to be reassessed and redirected in fundamentally different ways if its recognised role is to be realised. In that pursuit, the principle of decentralisation holds promise to operationalise planning, implementation, and management more effectively and in a more relevant fashion. This concept is now gaining increasing acceptance in overall development schemes within the Region.

Although the concept is not new, the Planning Commission in India, for instance, has been promoting and giving additional impetus since 1982 to the establishment of decentralised planning bodies at the district level. Guidelines are provided in the Seventh Plan (1985 - 1990) to strengthen district planning machinery by establishing appropriate information systems, promoting training programmes, conducting pilot projects for technical guidance, and developing monitoring mechanisms (Kumar). In Nepal, the

Decentralisation Act, which was approved by the Rastriya Panchayat (national legislative body) in 1982, became operational in December 1984, and was adopted as a guiding principle in the Seventh Plan, 1985 - 1990 (Pradhan 1985). The *gewog* development scheme being pursued in Bhutan has similar principles (Bajracharya). Acceptance of decentralisation is also apparent in other countries of the Region. Such revival of interest reinforces the value of decentralisation ; legislative enactment, as in the case of Nepal, provides greater strength for furthering its goals.

The challenge now is to seize the opportunity to put decentralisation into practice for development planning in general and energy planning in particular. Many innovations are needed for coordinated implementation with reference to, for example, administrative and technical sanctions, release of funds, reappropriation procedures, and intersectoral transfer of funds. District plans will have to be dovetailed with state plans and sectoral plans. Participation of local beneficiaries and indigenous organisations will have to be ensured. Technological research and development will have to be oriented in relevant ways. Appropriate procedures for monitoring, review, and evaluation will have to be designed. All these components need to fit within the conceptual framework for decentralised energy planning and management. I will examine these aspects in greater detail. Before that, it will be useful to examine ongoing innovative efforts in three countries concerning decentralised dissemination of energy technologies.