



Reviewed by Ashok Jaitly

## Democratising Micro-hydel: Structures, systems and agents in adaptive technology in the hills of Nepal

by Amreeta Regmi  
Orient Longman, pp. 307

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It is ironical to be reviewing a book with this title at a time when the fundamental democratic structure and process in Nepal is under severe threat, perhaps as never before. And yet, for the very same reason, it is also an appropriate juncture to take cognizance of a research work which addresses a critical infrastructure and development issue like energy – in this case, decentralized hydro systems – from a holistic perspective, examining not only the directly related technological and economic issues but also the equally important collateral social and political dimensions. Ms Amreeta Regmi has made a valiant attempt at ‘demystifying the concurrent philosophy of “waterpower” which dominates...water resource management in Nepal’ through ‘multiple case studies’ of four micro-hydel projects.

Nepal’s hydropower potential of between 44 000 MW (megawatt) and 83 000 MW (such divergent guesstimates are always debatable), if developed, could transform not only its own economy but also supply the much-needed electricity to neighbouring states. Yet, out of a population of 22 million, only 1.1 million have access to electricity. This poor utilization of an extremely valuable natural resource is ascribed to the lack of development finance, scarcity of local expertise, difficult geology, and inaccessible terrain at feasible sites, which have been the major constraints in harnessing

this natural resource. Instead, Nepal’s hydro potential has become the focus of geopolitics, international pressures, bilateral tensions, and national power politics, all of which have consistently put the interests of the local community in the backseat. Despite the hype about mega hydro projects, Nepal has had a traditional technology of energy generation from water wheels and water mills, which was extended to micro-hydel systems over the past four decades. However, out of the 56 ‘small’ hydel plants (capacity of 592 MW) and 2046 ‘micro’ plants (capacity of 13.6 MW), only 23.1% is running well while 73.4% are categorized as failures. This naturally raises fundamental questions about the viability of decentralized small-scale hydropower generation despite strong claims for its socio-economic and environmental benefits. In her book, Ms Regmi does not hesitate to question the romanticism often associated with advocates of the ‘small’ and yet empirically examines that position with sensitivity.

The methodology adopted is indeed rigorous and meticulous, in terms of a wide range of background references and a comprehensive approach towards a complex issue. And yet there are limitations like the choice of one district, Kabhre Palanchowk, within a radius of only 80 kilometres from Kathmandu because the disturbed conditions make access to other areas difficult. There is

also a presence of many players, including international funding agencies, which might inhibit greater objectivity, particularly in responses from the community to the qualitative techniques applied. The influence of some of these organizations on policy and institutions has been questionable to say the least. Nevertheless, results of the study clearly indicate a high degree of transparency and thoroughness, which is to be complimented.

Despite four decades of intervention, impact of micro-hydel systems has been extremely limited. The choice of technologies and an objective assessment of their respective economic viability are crucial issues, which cannot be left to engineers alone. As a corollary, rural electrification cannot be viewed in isolation from the wider energy system. Linkages between the micro and macro have to be established. It is also necessary to come out of the 'low cost', 'low wattage' syndrome while meeting the rural electricity needs. The author suggests that instead of 'appropriate' and 'intermediate' technology of the Schumacher School, we should move towards 'adaptive' technology based upon a 'community oriented...socio-technical system...capable of manifesting democratic values.' The 'adaptive' systems, defined as 'a democratic design of choice', would be able to generate power to meet several community needs and 'bring the community to benefit from the national mainstream national energy plan and the energy policy process.' While this plea for a decentralized and democratic approach is indeed well taken and in keeping with the now globally accepted paradigm for participatory development processes, there are no specific recommendations about a workable plan of action. Perhaps, this would be asking too much from a research project that looks at the 'why' and not the 'how'. Hopefully, such an exercise would follow as a next stage.

At the same time, there is something of a hint that sector reforms might provide the answer. In her conclusion, Ms Regmi states that 'The argument that the community cannot

afford to pay for more electricity...has to be revised and tariff and service ...integrated to sustain the operation and maintenance of the plants.' This needs to be linked to her argument that the rural sector should not be relegated to outdated technology and compromise solutions. For such an approach to be successful and, more importantly, to be acceptable to the community, the democratization process of decision-making becomes even more critical. Whether this is within the realm of possibility in the foreseeable future in a situation like in Nepal today, is a big question.

It is for this reason that a very important aspect of Ms Regmi's work is the incorporation of the impact generated by the ongoing Maoist movement on community attitudes and perspectives towards their own developmental aspirations. The resultant violence from both protagonists – insurgents and the state – has not only caused damage to the valuable community assets, in terms of micro hydel hardware, but also to the emerging democratic process which was seeking to find a voice through dialogue and debate but is now becoming suppressed by the threat of the gun. No matter how well-intentioned, motivated, and expressive of the social frustrations, at the end of the day, the path of violence tends to degenerate into yet another form of authoritarianism albeit in the name of the 'people.' For very understandable reasons, the author treads a careful path in delineating the negative impact of the Maoist movement in promoting her advocacy of democratizing the spread of micro-hydel energy systems but the essential message does come through.

Even though, at times, Ms Regmi's book seems to take upon itself too many, too diverse, and somewhat contentious issues while analysing a subject as down-to-earth as micro-hydel electricity systems, nevertheless, she reminds us of the dangers of adopting simplistic approaches to the real problems, including energy, faced by the rural communities in poor societies. Apart from the

encouraging fact that an engineer has taken upon herself to demystify technology and advocate its democratization, she has also succeeded in conveying a valuable message that an analysis of developmental issues from the 'micro' – whether from the technological or the societal perspective – inevitably leads to the 'macro.' Policy issues pertaining to water

management, distribution, and sectoral reforms can ignore the voices of local communities only at the cost of failure. *Democratising Micro-Hydel* makes a significant contribution to our understanding of the processes of development and social change in South Asia.