

# A Nepali looks at the Bhutan model. HYDRO-POWER A Bhutanese proposes a new Nepali model.

BIJAYA MAN SHERCHAN

Like Nepal, Bhutan too is blessed with abundant hydropower resources. But unlike Nepal, which seems to be going nowhere in terms of exploiting its water resource, Bhutan seems to have its goal pretty much in sight. The Bhutanese government has a 20-year Power System Master Plan to guide policy formulation in the development of hydropower.

The Master Plan, developed with World Bank assistance, estimates that the four major rivers of Ammochu (Torsa), Wangchu (Raidak), Punatsangchu (Sankosh) and Manas alone have the potential to economically generate around 20,000 MW of hydroelectricity. Currently Bhutan produces 357 MW of electricity (more or less equal to Nepal's own output), but in less than a decade it will be generating close to 1 700 MW.

Three hydropower projects are coming on line. The first stage of the Basochu HPP (60.8 MW) will be complete in June 2001, Kurichu HPP (60 MW) in September 2001 and Tala HPP (1020 MW) in the year 2004. Likewise, the Bunakha Reservoir Scheme (180 MW) is planned to be ready by the end of 2007.

Besides the projects mentioned above, Bhutan has prepared detailed project reports (DPRs) and feasibility studies of a number of other mega-projects. The DPR of the 4060 MW Sankosh project is already ready but implementation is being delayed because of environmental concerns. Detailed feasibility studies are being conducted to generate 1410 MW in two stages from the same river upstream. The feasibility study of the 265 MW Mangdechu Hydropower Project is also going on.

Bhutan receives assistance from many countries and multilateral agencies for energy development, but its most stable and important partner has been India. A watershed in the history of cooperation between Bhutan and India was the commission-

ing, in 1987, of the 336 MW Chukha Hydropower Project. Chukha was built under a 99-year agreement between India and Bhutan, whereby India provided a finance package that was 40 percent loan and 60 percent grant.

Later a guaranteed power buy-back provision was also included in the agreement.

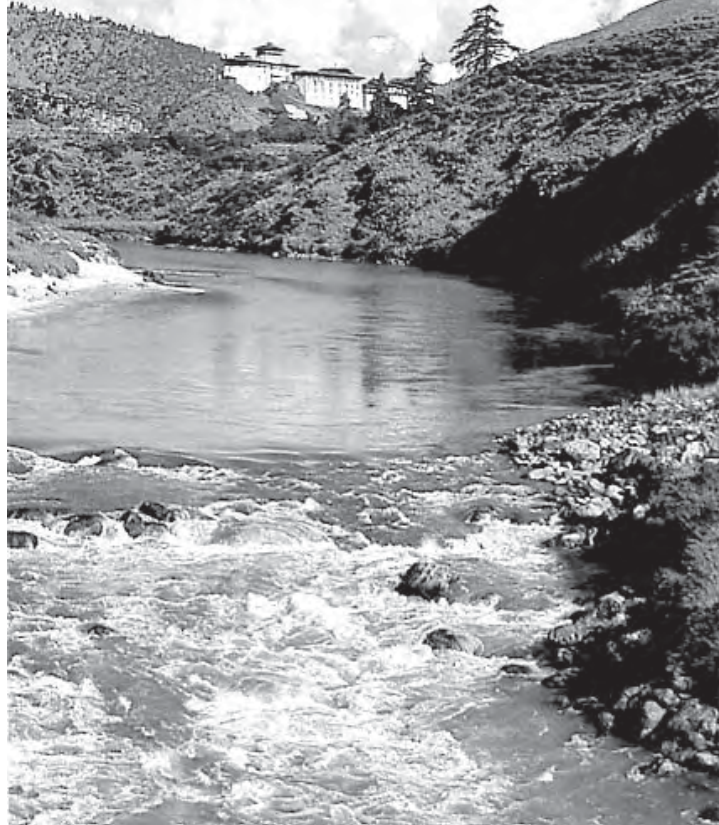
This arrangement has proved beneficial to both a power-deficit India and a poor Bhutan striving towards self-reliant development. Chukha led to the doubling of national revenues between 1985/86 and 1987/88. In 1998/99 the project alone accounted for 35 percent of Bhutan's revenue generation.

Bhutan was initially paid a paltry Nu 0.50 per unit, but India showed substantial understanding and increased the tariff to Nu 1.00 in April 1997 and further to Nu 1.50 in July 1999. (Ngultrum—Nu—is Bhutan's currency and equivalent to the Indian rupee in value.)

A striking aspect of Bhutan's power generation is also the very low construction cost per kilowatt. The 1.5 MW Chumey Hydropower project in Bumthang District cost Nu 43.33 million. Tala is being constructed for a revised estimated budget of Nu 31,300 million, and Basochu for Nu 1,923 million.

This works out to approximately \$ 700 per kW, which perhaps explains why Bhutanese consumers pay what is probably the cheapest rate in the world—Nu 0.70 (Rs. 1.12) per unit in urban centres and Nu 0.50 (Re. 0.80) rural areas. (In contrast, the construction costs of hydropower projects in Nepal are estimated to vary between \$ 2000-2500 per kW and Nepali consumers pay Rs 6 per unit, arguably the highest in the world.)

All these show without doubt that Bhutan has adopted a hugely successful policy in hydropower development. And it is evident that hydropower will propel the little Himalayan kingdom to economic prosperity



Judicious use: the Punatsangchu as it flows by the Wangdiphodrang dzong.

and self-sustenance before too long.

It is Bhutan's very success that automatically begs some questions of Nepal. Does Nepal have a viable reason to justify its failure in hydropower development when a much smaller Bhutan has succeeded so well?

Is there any viable justification for the three times higher construction costs of hydropower projects in Nepal? Is it at all probable, that as long as cheap power is available from Bhutan, India will ever look to Nepal for its hydropower needs?

Is Nepal doomed to limit hydropower generation only to meet domestic consumption and dispense it to the Nepali consumer at tariffs 5 to 7 times higher than in Bhutan? If the answers to the above questions are to be a "No", it is time that the country's politicians, planners, bureaucrats and power pundits did some soul-searching to provide an explanation to us.

(Bijaya Man Sherchan is an engineering consultant who recently visited Bhutan as a member of a delegation from Mustang.)

BHIM SUBBA

Critics often like to use Bhutan to contrast the alleged failure of Nepali policymakers to develop the country's vast hydropower potential. The criticism seems valid considering the rapid strides the smaller country has made since its first 360 kW capacity power plant was commissioned in 1968. Even with a headstart of over half a century, Nepal now lags behind. Are there lessons to be learnt from Bhutan? Can Nepal follow the same path to prosperity? Has Bhutan grabbed opportunities spurned by Nepal?

At first glance it might appear as if Nepal has lost out with poor planning where Bhutan was able to capitalise with sound decisions. But this would be an over-simplification of a more complex issue.

What is often overlooked in making comparisons between the two Himalayan kingdoms is that there are enough differences to make a successful strategy in one country unworkable in the next. The reasons range from the geological (the Chure Hills go no further east than the Kosi) to hydrological (Nepali rivers

contribute more, volume and percentage-wise) to economic or political. Given these disparities, the question of adopting the Bhutan model in Nepal really cannot arise.

For one, it is unlikely that India would have offered Nepal the kind of generous financial terms (capital entirely Indian, 60 percent of it as grant) that gave Bhutan her first break. More significantly, even if such an offer had been made, it is unlikely that Nepal would have accepted it because it is often forgotten that according to the original Chukha agreement the tariff was shamelessly low (Nu 0.10, not Nu 0.50 as mentioned by Sherchan). The project eventually turned out to be a money-spinner only because of tariff revisions which have seen the rate escalate by 1500 percent in just over a decade. It is to Bhutan's credit that through some tortuous negotiations an error was converted into an advantage.

The other point is that Indo-Bhutan collaboration is centred on hydroelectricity, but from barrages on the Mahakali to Gandaki to Kosi, Indo-Nepal bilateral cooperation in sharing rivers has nearly always focussed on water. That these have failed to inspire Nepali confidence is not surprising. Electricity has always been an inconsequential byproduct. In future cooperative efforts, too, this emphasis on water is likely to continue as is clear from the fact that the only schemes on the discussion table are colossal storage projects such as including Pancheshwar, Karnali and Kosi high dams. Run-of-river sites similar to those in Bhutan lie further north, are relatively inaccessible, and have not merited serious bilateral attention. It is clear India is interested in Nepal's water rather than electricity. Unlike the Brahmaputra system to which Bhutan's rivers contribute, there is greater pressure on freshwater in the Gangetic plains. Add the problem of recurring and costly floods in UP and Bihar, and concentrating on water rather than energy makes a great deal of sense.

Unfortunately, India puts no value to either flood control or irrigation benefits.

While the discounting of such important elements of storage projects makes these schemes less attractive than they might otherwise be for Nepal, the larger problem is that developing them is not likely to be easy. Unlike projects in Bhutan which are being financed entirely by India, Nepal will have to look for her share of the costs. But opposition to high dams has grown in recent years and finding the funds to build these mega-projects will become increasingly more difficult, if not impossible.

Nepal has pinned her hopes on the sale of hydropower to boost its revenues while India clearly plans to cash in on the storage capability of the dams. A shift in the Nepali focus, therefore, from electricity export to charging for irrigation water and flood control might see a convergence of interests.

It seems logical that India, as the end user, whether of electricity or water, should be allowed to determine project parameters—for a fair price, of course. If India needs flood relief and water for irrigation; Nepal should be willing to provide the sites for a fee. Electricity can remain the inconsequential shared byproduct. If India is allowed to have her say, she should also be willing to pay more than her share of the costs to build the project and be willing to pay a fair price for the benefits accruing from it.

This may seem far-fetched under the present circumstances with India not even willing to put a price on water and flood control, but if there is going to be any cooperation this looks like the only way to go. This could be the Nepal model to take on the acclaimed Bhutan one.

(Bhim Subba is a former Director-General of the Department of Power, Royal Government of Bhutan.)

## LETTERS

### WHY TALK?

Your reporting of the deepening Maoist crisis shows sensitivity towards those whose lives have been ruined by the fighting, as well as demonstrating thoughtful analysis of the type rarely seen in Nepal's newspapers.

C.K. Lal concludes his excellent article (Inevitability of talks, #0) with an upbeat, slogan-like epithet: "Stop giving speeches, stop discussing modalities, just do it." Whilst his plea is ostensibly directed towards the Prime Minister and his government, out of context, the words sound rather reminiscent of ideological Maoist propaganda. An end to speeches, an end to discussion and more action are the precise demands of the Maoist insurgents.

Who says Prachanda is playing by the rules? All the cards are in his hand, he risks nothing by agreeing to talks. Despite not being a Maoist, never having met one, and not even being Nepali, I know what the Maoists don't want: they don't want corruption, nepotism, and an ageing, self-obsessed and ineffectual government which shuffles from crisis to crisis. Negotiations can only make headway when there is some vague sense of a middle ground. The Maoists want radical change in the structures of political power, but the government has a vested interest in maintaining these very structures. These two aims may well be irreconcilable, and talks (if they happen at all) will have little chance of success.

Alfredo Krienen  
Amsterdam

### GODS RETURN

Do we put them inside museums or restore them to their original places of worship? Your story "Return of the gods" (#5) provokes debate. It states pros and cons, but argues against the idea of placing a new image of Uma-Maheshwar at the Dhulikhel site and keeping the returning gods in the safety of a museum.

While judging such a potential replacement as "fake", the argument falls victim of the basic attitude of the international art trade which, above all, values the singularity and authenticity of an art object, and abhors anything copied.

It thus dismisses what could be a genuine new interpretation of one of the most popular themes for the stone sculptors of

Nepal, the divine couple Uma-Maheshwar. Repeated in countless variations since more than one thousand years, there is no "original", and thus no negative notion of copy or fake in the traditions of Nepali art.

Goetz Hagmueller  
Bhaktapur

I found "Return of the gods" (#5) quite informative. But I would like to correct a quote attributed to me. I never said that the best thing is to have a replica in Dhulikhel. My suggestion was to offer a new sculpture the locals, if they agree.

I also would not like to worship to a copy, a pastiche. Other than that, I liked Sujata Tuladhar's article and hope that it furthers the

cause of heritage preservation.

Wolfgang Koellisch  
Dhulikhel

### DIDI IN BLUE

Reading Jasmine Rajbhandary's "Woman to Woman" (#0), I remembered a similar experience I had in April at Kathmandu airport. After both my hand bags were x-rayed I was taken behind the curtain. The "Didi in Blue" asked me where I was going and what I did. She took my handbag and starting going through it. She spotted my purse and asked me how much money I had in there. She also asked me what my father did. I had only \$100, still she asked if I had declared it and started making a big fuss. Then she asked for "paisa for chiyasija" (tea money). I raised my voice and asked how much she

wanted. Embarrassed, she made me close my bags and took me to her boss who let me through.

Beware of the dreaded Didi of the Departure Hall!

"SJ"  
Boston, USA

### UNFAIR

I read the letters from two outraged politically correct readers (#3) about your "cover girl" (#2) advertising a fairness cream. Fine, they don't like fairness cream, no problem. But why don't they write outraged letters to American travel magazines that advertise skin-tanning cream that turns pale faces brown?

G. Guring  
Seattle, USA