

Gyawali, D. 2013. Reflecting on the chasm between water punditry and water politics. *Water Alternatives* 6(2): 177-194



---

## ***Viewpoint* – Reflecting on the Chasm between Water Punditry and Water Politics**

### **Dipak Gyawali**

Pragya (Academician), Nepal Academy of Science and Technology, Chairman, Nepal Water Conservation Foundation, and former Minister of Water Resources; [dipakgyawali@ntc.net.np](mailto:dipakgyawali@ntc.net.np)

---

**ABSTRACT:** When water academia meets real-time water politics, the latter does not necessarily bow deferentially and listen respectfully. When the former attempts to bring what may be thought of as rational reforms, powerful vested interests, their public façade and stated positions notwithstanding, rise in reaction and are able to scuttle such efforts. Since all politics is both local and short-term, entrenched vested interests are often able to distort the public discourse by appealing to 'development', the new theology of our times, even if it is mal-development they are really advocating. This is a personal account of an academic activist and his almost three decades of battling what could be called demons or windmills, depending on which side of the fence one views these events from. It has lessons for academics in general who long for 'policy relevance' for their work ('enter the kitchen only if you can handle the political heat') and for vested interests that have any semblance of social conscience and sense of legacy left in them ('you can't have lasting good politics with short-term bad science').

**KEYWORDS:** Hydropower, irrigation, water policy and politics, transboundary water, foreign aid, development agencies

---

### **WATER POWER STRUGGLES AND POLICIES**

There is a gap between what academics, civic movement activists and experts studying water think and where politicians and their everyday politics drive water development, and this gap is perplexing. Those of us who are battle-scarred veterans of water policy wars in Nepal (and by default South Asia's Ganga Basin) remember the last two decades of the 20th century as those of intense water disputes. Several water projects such as the World Bank-promoted Arun-3, the Mahakali Treaty with its Pancheshwar High Dam, the Melamchi transbasin water supply project and the export-oriented West Seti multipurpose reservoir project have, as a result, become household names in Nepal and often abroad as well. The powers-that-be wanted these projects; social and environmental activists, however, saw problems with them and either wanted them seriously modified to address concerns of equity, justice and plain sensible economics, or done away with altogether. At the global level, activists and academics have won, in that they made a valid point, and it has been (howsoever grudgingly) accepted. At the national and local levels, however, the point has not been understood or accepted; and those who succeeded globally are vilified nationally and at district levels as 'anti-developmental' – essentially traitors to the nation.

A strange metaphor keeps popping into my mind when I reflect on the amazing success of civic movements in Nepal in the 1990s when contrasted with the chronically dismal failure of the country's water (and in particular hydropower) management into the second decade of the 21st century. (Nepal's national grid suffers currently from some fourteen hours of power cuts a day, an inevitable scenario known years ago, and only a handful of the efforts taken by the official hydrocracy in the last decade actually address this problem!) This incongruity in the 'global success versus national failure' forces me to ask myself: is it that successful academic struggles to establish a 'fact' is akin to perfume applied to a

skin whose effect pervades throughout the room but does not chemically affect the organism, while the political message, right or wrong, is like a powerful antibiotic medicine that seeps through the skin and affects the entire internal workings of the organism without anyone in the room noticing it? Is academia's global impact (even when eventually right) nationally superficial while that of the political actor (even when it is 'scientifically' wrong) more lasting and deep for the development path of a country? What drives the politics that makes it immune or even hostile to 'truths' that emanate from the academia and civic movements, global or national? What kind of engagement, and with whom, must global socio-environmental movements engage in to ensure that development practices in the Global South become more sensible and sustainable?

With hindsight, it can be seen that those decades of popular as well as academic activism have helped the discourse in Nepal, not necessarily the practice that is slower to change, to move beyond simplistic emotional sloganeering to what are more complex second-generation issues. The debate is no longer just 'large versus small': it has shifted to one of risks, justice and indeed the correctness (or lack thereof) of the development pathway itself. Are the risks big or small, for whom and under what terms? A small hydropower plant could be fatally risky for a small community if its institutional framework or its financial terms are not correct. Is hydropower development meant to be for national industrialisation that helps expand upstream-downstream linkages in its economy creating jobs within the country or is it for export in what is increasingly being termed a 'neo-colonial' path of resource export?

Dams are always a public policy lightning rod that polarises the debate: water storage, however, has an undeniable legitimacy behind it. But then, how should multi-purpose use of reservoirs be planned and implemented so that those benefitting from the supply of regulated water – for irrigation, navigation or fisheries in seasons of acute scarcity and for flood amelioration in the rainy season – also pay for the cost of the dam and not be free riders by having everything loaded onto the electricity sector? What is a fair price for both the developers and the consumers, and who should adjudicate especially for dynamically changing conditions over the years? Indeed, who has prior rights over natural resources, the state at the central level, the local units of government, the business sector that can pay to privately develop and own public goods or those communes and religious entities who uphold the non-fiscal values of common property? Are our water-related institutions, designed with technocratic certitude for a bygone era and populated almost exclusively by civil engineers with only cement construction in mind, even capable of addressing such issues of value-leavened complexity?

A review of Nepali laws in 2003-2004 comparing them with the recommendations of the World Commission on Dams (see Special Issue of Water Alternatives on WCD+10) revealed the surprising fact that these public debates of the 1990s were responsible for making many Nepali laws fairly robust in social and environmental terms. These controversies, in fact, led to the incorporation of many of what subsequently became the WCD recommendations into the Nepali legal system even before the WCD was formed. The need, therefore, was not for a knee-jerk rejection of the WCD guidelines as advocated by many hydrocrats, but for a constructive engagement with them and to see if more global concerns regarding equity and justice in water resources development could be further addressed by Nepal's legal practice. The irony is that, while the professional discourse has thus moved to a higher and saner level, there is a strange regressing back to self-defeating populism at the level of partisan politics within Nepal and at the transboundary level with the lower riparians in the Ganga Basin. Those arguing for what would be seen as rational sanity at the global academic level are portrayed by populist politics as 'not wanting Nepal's development, of trying to keep the country in a state of pristine environmental zoo'. What explains this incongruity?

## ICONIC DAMS AND PROTESTS

A stepping back to re-examine the iconic projects of controversy listed above might help in understanding the oddness of voices for social and environmental sanity being marginalised, even as they succeed in making their point. I will lay out below what I experienced from within the fighting ring with these projects, and then draw some life-long lessons.

### Arun-3

The World Bank eventually had to pull out of the Arun-3 hydropower project it had promoted for a decade and pulled out of it in 1995, not because of what the fractious political parties of Nepal did, but because the activists caught the Bank doing bad economics. The hydropower project on the eponymous river was planned to be built by the Nepal government with the Bank in the lead with seven other international donors at US\$ 5400/kW when the private sector was building similar hydro projects in Nepal at a mere \$1000/kW. The forty-odd conditionalities attached with the project ensured a monopoly environment that would fleece the Nepali consumer dry and destroy the nascent small hydropower industry in Nepal. This is what riled many and fuelled the opposition. The activists have subsequently been vindicated by the fact that, with the collapse of Arun-3, half a dozen other projects have been built with donor and private-sector funding that is providing Nepal with one-third *more* of electricity than Arun-3 would have provided at half the cost and half the time. Indeed, private entrepreneurs have subsequently built a 4MW Piluwa Khola hydropower project in the same roadless Arun valley at only \$1200/kW vindicating the stance of the activists.

Unfortunately, the powers-that-be have not learnt the right lessons from this event and chose instead even today, a decade-and-a-half later, to engage in the politics of scapegoating each other and the activists. Arguing for populist consumption that they would 'return Arun-3 at all cost' (instead of at the right cost!), the big political parties – the Nepali Congress, the Maoists and the United Marxist-Leninists – ended up handing this project over to an Indian developer (Indian government-owned Satluj Jalbidyut Nigam) for export to India after the 'regime change' of 2006 that removed the monarchy in Nepal, even when Nepal currently faces crippling power shortages. It was done, some say as a quid pro quo to India by the grateful political parties, by violating Article 126 of the constitution (and Article 156 of the interim constitution that replaced it with the subsequent regime change). This provision requires parliamentary ratification of such resource-sharing deals.

This blatant bypassing of parliament has riled up a new round of activism, which is based on the concept of electricity for national development and industrialisation, not export, and it promises even more fireworks – and more impasses – than in the past. Incidentally, the Indian developer proposes to develop this at only \$1000/kW that is five times lower than what the World Bank was proposing, again vindicating the activists regarding their Arun-3 activism! At the time of writing, this project is facing a slowdown, and has almost stalled. In another project in west Nepal called Upper Karnali, similarly handed over to another Indian company called GMR, the opposition has been more violent and the developer's office was burned down by an all-party mob whose national leaders had been committed to handing over this project to the Indian developer. The MoU with the developer stipulates that any withdrawal upstream would need the prior approval of the developer, thus giving it prior water rights to the rivers upstream of the dam. This is what has riled all local politicians in the district.

### West Seti

While Arun-3 was a controversy at the eastern end of Nepal, another project on the western end has recently hit the headlines. The West Seti is a multi-purpose reservoir project direly needed for Nepal's power system to even out the imbalanced seasonal capacity in the Nepali national grid, which currently has only the 60 MW Kulekhani-1 storage project in a roughly 700 MW system of mostly run-of-river plants whose capacity in the dry season is reduced to a third of the installed capacity. Originally

envisaged as a 305 MW project (expanded to 750 MW to meet Indian peaking power needs subsequently), it would have provided the Nepali power system a much required stability in the dry season. Its stored water would provide additional multiple benefits of dry season irrigation, fisheries and even riverine transport with increased navigation depth. It was wrongly designed as a hydroelectric project and designated for power export to India, ignoring Nepal's internal needs and the constitutional provision of parliamentary ratification.

The licence to begin developing the West Seti for export – called a 'hunting licence' because of its exploratory nature – had been given to an Australian developer SMEC (in violation of Article 126 of Nepal's constitution) in the mid-1990s; but the company failed to secure a power purchase agreement with India or arrange financing for well over a decade and a half, and despite several extensions of its licence. The licence came up renewal again in early 2003 when I was minister of water resources, which I was in no mood to approve mainly because I did not see projects exporting electricity as meeting Nepali national interests. When my ministerial intentions became apparent, interesting things started to happen.

Western donor representatives started arguing that it would send a bad signal to investors, and hinted that cancelling SMEC's licence may also therefore affect donor support for our government. A fairly big delegation of retired and even serving hydrocrats showed up at my office to plead with me not to cancel SMEC's licence. I was quite taken aback, and questioned them about what they saw in the arrangement as being in Nepal's national interest. Their only bleating was 'such a big project' would bring nebulous development benefits to this poor region and to Nepal also. On making further enquiries, I discovered that over the decade they (and many party politicians, including a former prime minister) had been the beneficiaries of SMEC's generosity, whether in junketeering abroad or having their children sponsored for studies and jobs in Australia. And my prime minister, who was from the western part of Nepal where the project was located, came under strong pressure from his constituents not to have this ostensible developer sent packing.

My concern was of a different nature: it was to see if we could get this company to develop this attractive storage project for Nepal instead of exporting power to India. We badly needed storage electricity for our power system that was getting overwhelmed with excessive run-of-river capacity. However, in the nearly decade-long holding of the licence, it transpired that the company had, through what is known as 'salami slicing tactics', managed to sign MoUs with a succession of unstable governments denying Nepal the originally agreed benefits, i.e. 10% free electricity. The last MoU had Nepal receiving money in lieu of power (the amount was uncertain since it had been unable to sign a power purchase agreement with India specifying the price), and even that was to be given after the company had paid off all its debtors and there was some profit left!

To keep my prime minister happy and to achieve what I believed was in the better national interest than export, viz. allowing the company the chance to develop the project for Nepal, at the ministry we took the following line: the licence would be renewed if we received 75 MW of free storage power and there was recognition that the regulated waters of West Seti (which could irrigate up to some 90,000 additional hectares of land in the dry season) would be Nepal's to own and develop in the future. In case the developer could not provide 75 MW at West Seti for whatever technical reason, it would have to develop and provide Nepal with equivalent storage power from some other alternative site. Our expectation was that, given that we were willing pay a higher price for storage energy than India was, the developer would ultimately chose to supply all the power to Nepal eventually.

The developer did go to examine the 122 MW Damauli Seti project (or as it is mistakenly called 'Upper' Seti) on the road to Pokhara, and did sign the MoU as per our terms. However, subsequent governments went back to re-signing another MoU asking for money instead of power under similar unfavourable terms. The highly critical interim parliament's natural resources committee did direct the government to renegotiate the MoU with SMEC for receiving power instead of money, which the

company was unable to do because it was unable to sign the main agreement with India and therefore eventually in June 2011, it had to be sent packing.

Two interesting features emerged from this episode under my watch. The issue of regulated storage water, which had been studiously ignored in the initial process of defining this project as a hydroelectric project only, now forcibly entered the mainstream discourse. The other issue that also now forms the stable subject of debate is that of electricity as a subject of strengthening national economy and providing jobs within the country, not something for export. That would be a mode of development that is now being called a 'neocolonial path'. To address the former, I asked the irrigation department to plan out how to use the regulated waters within Nepal for irrigation of the Nepal Tarai in the lower reaches, and to also to figure out what the price of per cubic meter of regulated water would be in case it had to be traded with India. The irrigation bosses were completely stupefied: they instead asked me, a minister, how this was to be done! I had to explain some basic agriculture economics to them, and quickly realised that the irrigation department was so heavily populated and dominated by civil engineers that all they knew was cement and earth-moving contracts, not water management, and that they probably had never really talked to or worked with a farmer ever.

After SMEC had its licence revoked, this project is now coming under some interesting geo-political dynamics. China's Three Gorges Corporation has shown interest in developing West Seti, and this has now re-defined the debate completely. Together with several social and environmental activists, I have gone on record saying that if the Chinese developer is going to develop West Seti as a project for the Nepali grid (which it claims to) and not for export to India, some 60% of my opposition to this project is over.

However, the remaining 40% has still important issues that cannot be swept under the carpet: at what price will Three Gorges Corporation develop this project and what will I as a Nepali consumer have to pay for its electricity? With what standards of equity and justice will resettlement of the many Nepali dam oustees be done? How will the multi-purpose nature of this project be defined both for its subsequent operation and management and for the correct pricing of its varied products? It will produce electricity, provide irrigation in the dry season, fisheries and tourism in the reservoir area, flood control as well as navigation benefits downstream that will be benefits different sets of consumers. How will these benefits be allocated and the cost of the dam recovered from them?

These questions will be the subject of new debates in the future, but they will have proved my point that Southern activists are not upholders of the Northern NGO slogan 'No Dams!' but are proponents of an alternative formulation of 'No Bad Dams!' The latter provides space for political discourse in the South, the former is only a highway to utter marginalisation of Southern activists living and operating in the South.

### **Tanakpur Mahakali controversy**

The Tanakpur/Mahakali episode that tied up the Supreme Court, the press and the parliament for the first half of the 1990s was something that consumed much of my academic activism in the decade of the 1990s. It has a complex history that began as far back as the early 20th century with British India attempting irrigation development in the western Ganga plains with the Sarada Barrage at the western tip of Nepal on Mahakali River which forms the border of Nepal and India. In the 1980s, India government decided to build a power plant upstream of the Sarada Barrage on mostly a piece of land swapped in the 1920s with the Rana rulers of Nepal.

In the mid-1980s, during the last years of Panchayat rule with an active monarchy, Nepal raised concerns with India regarding the Tanakpur Barrage which was planned upstream of the Sarada Barrage and which proposed to divert the Mahakali waters to a power plant whose tail race would empty into the Sarada canal, thus potentially denying the 1000 cusecs flow agreed in the Sarada Treaty with British

India to Nepal's Mahakali irrigation project. Upon protests, India agreed to modify the design to empty the tail race into the Mahakali, but kept denying that this had anything to do with Nepal.

When the powerhouse, barrage and other appurtenances were complete, India needed about 500 metres of Nepali land to connect the left afflux bund to higher ground (otherwise the river would bypass the barrage). However, it was only with the 'regime change' in Nepal in 1990 that India began to put pressure on Nepal's transition regimes to complete the left abutment of the Tanakpur Barrage on Nepali territory. While the interim prime minister K.P. Bhattarai brushed away Indian pressure by ignoring water and focusing on constitution-making as well as the holding of general elections under the new multi-party dispensation, the Nepali Congress government of Girija Prasad Koirala succumbed to Indian pressure and, in December 1991, agreed to allow India to complete its left afflux bund on Nepali territory. It raised a hornet's nest in Nepal.

What rankled Nepalis was the creeping 'salami tactics' of India, first by refusing to share any plans and details on the project's potential impact on Nepal by claiming it was a wholly Indian project and none of Nepal's business; second by pretending that the relatively small amount of Nepali left bank required to complete the barrage was actually to prevent flooding in Nepal and ostensibly had nothing to do with the Tanakpur Barrage; and third that what was given to Nepal as compensation to get this deal though was a gesture of goodwill on the part of India. What incensed the opposition in Nepal (and there was considerable amount of that) was Koirala's desperate attempt to prevent it from being tabled in parliament. A more transparent process of negotiation by the Delhi mandarins would have led to a more healthy cooperative development between the two countries. Instead of ham-handed attempts to force agreements upon weak and shaky governments, an open public debate in the parliament on what Nepal should rightfully expect in lieu of providing India the chance to complete its unilaterally constructed project on a border river would have probably led to better results. Instead, the path followed has been of one mistake covering another, and these can be mined by any force interested in stoking up bad feelings on either side of the border.

The Tanakpur debate in Nepal, both within the parliament and in the press and streets, did ask pertinent questions regarding both the substance and procedures for negotiating water treaties with India. It asked that treaties in the future be done in a publicly transparent manner and not behind closed doors; that Nepal's long-term interests not be sacrificed for short-term political support from the successor state to the colonial British Raj; and that the democratic provision of Article 126 of the constitution be refined to clarify what kind of water agreements can be done by a government with a simple majority and what would be needed for the provision of a 2/3rd parliament's ratification to come into effect. Unfortunately, several committees formed in the parliament to tackle these momentous issues never came to a closure, since Nepali politics fell into a 'musical chair' series of coalition governments where the attention of political leaders was confined to acquiring ministerial berths.

The Supreme Court too, in its incomplete decision, did not help matters: it agreed with the petitioners (and against Mr Koirala) that the Tanakpur 'Understanding' was a treaty that required parliamentary approval but failed to provide a definition of what constitutes 'pervasive, serious and long-term' mentioned in Article 126. On the contrary, it asked that the government and parliament define it themselves, but that it would reserve judgment as to whether such a definition was correct or not for the future. Thus the Supreme Court, instead of helping bring a controversy to a judicious closure, set the scene for an infinite loop of litigation and counter-litigation. It is this that inhibited the parliamentary committees from pressing ahead with their task of discussing the strictures and working out a viable *modus operandi*.

The Tanakpur fiasco was subsumed under a much bigger Mahakali Treaty of 1996, whose ambitions included building at Pancheshwar possibly the highest dam of its type in this part of the world to generate over 6000 MW of power. The detailed engineering design was to have been completed in six

months, financing arranged in two years, and the project itself completed in eight years. The treaty was ratified by over two-thirds of the parliament in September 1996 despite fierce opposition by activists such as me and nationalist politicians. Today, seventeen years further on, far from seeing the completion of Pancheshwar, we are yet to see even the completion of the first step, the detailed project report that was to have been done in six months. The primary reason lies with the myopia on the side of the Nepali establishment that, in its bedazzlement with earning hydro-dollars from electricity export, failed to address crucial concerns of water rights, common border issues, socio-environmental issues or electricity pricing. Voices of caution on these issues were drowned out by developmental hype; but they are coming back to haunt this treaty, which now needs to be re-negotiated as its ten-year mandate has run out, as well as the larger gamut of water cooperation with India.

The questions I have asked as an academic activist is that an honest public debate in Nepal needs to have the water resources establishment interrogate itself: why do we want to develop our supposed water wealth? Some of the pertinent questions can be bulleted as follows:

- Do we need the products that flow from dam construction – regulated water for dry season irrigation and downstream flood control as well as electricity, navigation and fisheries – in Nepal for ourselves or for our neighbour across the border?
- If it is for us, what are the real requirements – in terms of place, time, quantity, quality and scale – of our commerce and industry for electricity, of our agriculture for regulated dry season water and of our roads, bridges and settlements for flood protection? Do these large dams meet those requirements most effectively or are there other options that need to be assessed prior to taking decisions that would inflexibly lock the country onto a sub-optimal path of development?
- If it is for export (both as benefits from electricity as well as regulated water for irrigation, domestic and industrial use, as well as flood control) what is a fair price for the resource, which includes not just the water but the site where the dam can be built and the valleys and villages that need to be permanently flooded to produce the storage?
- If they are meant to be developed jointly for bilateral or even regional benefits, what benefit-sharing principles are to be adopted? Is there a danger that there is too much downstream 'free-ridership' in the deals, with Nepal failing to get its due share of the benefits that accrue downstream while bearing much of the social and environmental costs of submergence and rehabilitation? Can they be dealt with through cross-sectoral and cross-basin trade-offs?
- In both cases, what are the risks that Nepali economy and social fabric are capable of bearing and what are the risks that should not be borne by this generation nor should they be passed on to our future generation?
- In a 'federal' Nepal (which is the as yet unresolved exercise in state restructuring following the regime change in 2006), what is going to be the case for 'ownership' of these sites, decisions regarding their exploitation including the level of investment contribution and the sharing of benefits that would accrue from them between the different units of federal governance?
- Besides the social and economic risks, what are the physical risks such as from seismicity in this tectonically active area, from mass-wasting of Himalayan geology, from cloudbursts and *bishyaris* (landslide dammed lakes) that burst upon overtopping etc.? What will be their risk assessment consequences to their economics? How will mega-dams such as Pancheshwar, Karnali and Kosi High be assessed properly in light of these concerns?

Article 126 in the old 1990 constitution (which is now Article 156 and in the interim post-2006 constitution) requires parliamentary oversight in resource sharing treaties. It is primarily such an

institutional mechanism that would, indeed should, have facilitated the assessment of questions such as those raised above. Unfortunately, this provision was never properly used by the political parties either with due diligence or due honesty; rather it was used by them *against* one another rather than *for* assuring the overall maximum benefit to the country.

I have been in the thick of that controversy since 1991. When I became minister for water resources in October 2002, I attempted to address this issue by getting a team of experts to sort out the criteria that would address the practice of Article 126. A 'situation paper' was prepared to that effect. I assembled a tight-knit team of the best minds on the subject, and we worked on the problem of defining the criteria for four months before coming up with a *Sthiti Patra* or 'situation paper'. It postulated that not just water but also a dam site such as an appropriate gorge or a storage valley was also a resource. It argued that the Article would be attracted if a resource (i.e. regulated water created by investment, not natural flowing water) or a product borne out of the use of a natural resource such as a dam site (i.e. electricity) crossed an international boundary. Besides the positive increase of dry season water, it also considered the negative decrease of flood volume (due to the storage reservoir) as a resource.

If such resources described above did not cross an international boundary into another country, if all the products were used within Nepal, this Article would not be attracted. It would mean that which country's company developed a dam, where the money came from and in which denomination, etc.; were irrelevant questions. The primary question was whether a resource crosses a border, and if it does how and to what extent. A set of nine criteria were developed to determine the seriousness and long-term effect of resources crossing a boundary, which if applicable, would trigger the application of the two-thirds provision for parliamentary ratification. However, after our government fell, according to some conspiracy theorists, due to activities by our cabinet preparing such 'situation papers' that the lower regional superpower riparian would not like, no party or the governments led by them has attempted to come to terms with the issues raised by that 'situation paper'. Unless that happens, transboundary collaboration between these two Ganga basin riparians will forever remain bedevilled by controversies.

### **The Melamchi transbasin project**

The Melamchi transbasin project to supply water to a growing Kathmandu city, which at the current rate of progress may not see water at the end of the tunnel during the lifetime of this generation of water professionals, is another water controversy that has a strange twist to it. There is no denying that Kathmandu needs water, especially when the city has ballooned from a population of one percent of Nepal's total population to now house ten percent, (i.e. three million). While rapid urbanisation leading to slum-infested mega-cities is the bane of many southern countries, in Nepal's case this increase has happened mostly over the last decade with the Maoist insurgency in the rural hinterlands.

My involvement with Melamchi has been as an academic activist only: indeed with hindsight, I think it was Melamchi that led me to quit my government job and opt for a more exciting but less secure career path of an academic activist with its bouts of exhilaration and depression. As water resources minister in 2002/2003, my brief was hydropower, irrigation and flood control, not drinking water. Urban or rural water supply came under that of the ministry of housing and physical planning, and I had my hands too full with issues in my water resources ministry to worry about Melamchi in my colleague-minister's patch. It was, however, much earlier, towards the end of 1986 that I was fated to be intertwined with this project, which was to have been the World Bank's Fourth Water Supply Project. That engagement proved to be my last government assignment: I resigned soon thereafter from civil servant position, partly due to the government failing to heed the recommendations of the commission. This episode convinced me that the dominant thinking within the government as far as water management was concerned had less to do with the rationality of water science as we are

trained to understand, and more with political exigencies of the day between the powers-that-be, national political or international.

What had happened was that the first, second and third of the World Bank's projects between 1974 and 1986 to improve the water supply in some twelve cities of Nepal, including the capital city Kathmandu, had failed to deliver on their promises. The Bank was blaming the Nepal government for it, putting pressure on it to 'raise the water tariff', the only policy measure that the Bank seems to know or understand as the solution to all ills in the sector. This measure was impossible for the Nepal government to implement, simply because, if your projects have not delivered on their promises of continuous 24-hour water supply or sewerage treatment, it is unwise to ask the citizen-voters to pay more to rectify your failures! The government did what governments generally do under such conditions, i.e. form a commission.

I was inducted by the then government into what is popularly called the Pokhrel Commission, named after its chairman Birendra Keshari Pokhrel who was a former chief engineer of the department of roads and was then a member of the Rashtriya Panchayat, Nepal's parliament under the Panchayat dispensation. The other member was anthropologist Bihari Krishna Shrestha, who then worked for the National Planning Commission and had done some pioneering work on the anthropology of traditional irrigation in the remote district of Jumla. The three of us brought our diverse perspectives to bear on this 'wicked problem' of a failed attempt to improve Kathmandu's water supply. We adopted a new-for-Nepal bottom-up approach in such investigations: we began by visiting and interviewing the outlying cities and their mayors (who incidentally were not mandated to look after water supply in their cities), and in Kathmandu, began our investigations from pump operators and meter readers, i.e. the lowest level staff. It took the top-level, used to briefing investigators and then coordinating their further questioning of lower-level staff, completely by surprise and unable to hide or whitewash anything.

What we discovered was scandalous, both financially and more importantly institutionally. We stated in our report that the organisation was financially completely bankrupt, direction-wise wholly fixated on procurement only and not on water management, and institutionally very contradiction-ridden. Not only was it so just in its own organisational structure but also in its relation with its main funder, the World Bank, whose 'evaluation reports' of its three water supply projects were bad jokes by incestuously selected consultants painting everything rosy and optimistic.

Our primary recommendation to the government was to split this national body into its municipal components and hand those over to the respective municipal authorities as the only sensible way to bring in some accountability. We further recommended that the proposed next phase, the Fourth Water Supply Project which was to be the Melamchi transbasin water transfer, be postponed to address more pressing reform measures. These views upset both the government, where it was whispered that we had gone 'beyond our brief', and the World Bank, which spent the next decade trying to suppress the report and its findings. It funded all kinds of 'twinning arrangements' with freshly privatised British water companies to improve the management of the Nepali utility without addressing the real issue, which was decentralisation to municipalities. Since the Bank's primary objective was to push a big loan for Melamchi, it avoided suggesting any radical reform that would upset the government and its utility managers, thus damaging its prospects. Eventually it gave up in the mid-1990s, and true to the dog-eat-dog world of donor competition (despite sugary talk of donor harmonisation) the Asian Development Bank jumped in to take up the Melamchi project.

However, ADB effort too is not going forward the way it should because core issues of decentralisation/devolution and distribution improvement are being ignored. There are problems other than just augmentation of new supply for this fast growing population of Kathmandu Valley: who is to be held responsible for the massive leakage in the system estimated at about 70%, with theft accounting for almost half of it? What sense does it make to increase supply if leakage and theft are to remain the same? Given that the water supply of Kathmandu and all its major cities is managed not by

the municipal authorities but by a centralised corporation with a chequered history of corruption and incompetence, what is the role of the elected municipalities, especially in the current debate on governance transformation in Nepal? Why is the used water, i.e. sewerage, on nobody's agenda, either for treatment or for not being discharged into the sacred Bagmati River? And are there ways to prevent this huge, multi-decade effort from becoming a fiscally incontinent boondoggle as other such large projects have become? Without addressing these governance issues, just punching a hole in the mountain and bringing water from the other side will not solve the root problem.

A project with a huge construction component will definitely make the construction industry happy, as it will enrich a few contractors, their commission agents as well as rent-seeking bureaucrats. It will also allow these beneficiaries to plough some of their gains to the politicians and the parties backing them allowing them to be re-elected through vote-buying, booth capturing etc. Once elected, they would promote the corrupt bureaucrats and the entrepreneurial contractors, thus strengthening this 'iron triangle' nexus of hydrocrats, contractors and politicians to reproduce sustainable corruption. Multilateral development agencies are quite happy to support this arrangement as long as it looks democratic and allows them to push large amounts of loans, bolstering the chances for a donor bureaucrat for higher promotions, whence the penchant for large development projects.

On this last question of big versus small, it is ironic that Nepali environmentalists, unlike their EuroAmerican counterparts who argue for 'No Dams' or at best 'Small Dams', are instead arguing for a 'larger Melamchi, multi-purpose Melamchi'; and it is the government and its donor agency that are arguing against it. The idea of the activists is that, if one went to all the trouble of building a thirty-odd kilometre tunnel in Himalayan geology with expensive public sector loans, one may as well get a 'better bang for the buck' – that instead of designing it only to supply drinking water it should be designed in a multi-purpose fashion to generate electricity from the height difference; have the electricity pay for most of the cost of the tunnel, thus equitably provide cheaper drinking water for Kathmandu; put in proper sewerage treatment systems so that the sacred Bagmati River is cleaner; and river as well as its treated water can generate more electricity downstream of Kathmandu in addition to irrigating the Tarai. Strangely enough, it is the government and the donors who want to stick to the smaller, less optimum, single purpose 'water supply only' solution for reasons of institutional inertia!

Melamchi originally did have an electricity component to it that was to be funded by the Norwegians who have a history of an oftentimes good development track record on the hydropower front. In the donor infighting after the withdrawal of the World Bank, the ADB that jumped in to pick up Melamchi managed to sideline the Norwegians and with them the electricity component. Within the ADB it is understood that there is huge resistance to making this a multi-purpose project since that would greatly complicate bureaucratic procedures by bringing in, besides the Housing and Urban Planning Ministry, those of Water Resources and Energy as well. Nepal Government, which should have been alert and supportive of such a profitable development possibility exhibited extreme fatalism. The group of activists championing 'larger Melamchi, multi-purpose Melamchi' went as a delegation to the finance minister to convince him to call off the 'single purpose' tender and have the project re-designed at minimal cost to make it multi-purpose. The minister refused, saying that delaying the tender was not acceptable to him and also that he would not agree to a re-design unless advised by the ADB. The disappointed activists remarked after the meeting that they had to wonder whether they had just talked to Nepal's finance minister or to a clerk of the ADB!

## **HYDROPOWER AND POLICY BATTLES**

The battle for developing major Nepali dam sites as multi-purpose projects to benefit different sectors of the Nepali economy instead of as only hydroelectric schemes and that too for export is heating up and the implications seem to be now better understood by younger political cadres. Today, Nepal imports fossil fuels to mainly power its (private) transport and to meet the power shortage in the

(hydropower-dominant) national grid by private diesel generators. The fossil fuel import bill currently amounts to about 126% of Nepal's total foreign exchange earnings, clearly as unsustainable a path as any. The governments of Nepal led by ostensibly socialists and now even extreme left Maoists have only pursued the policy of liberalising car imports (and thus pushing up the petroleum import bill even higher) and not encouraging local private developers to develop small and medium hydropower power projects but using government resources to establish diesel generators. The Maoists have gone further, engaging in a series of brutal road-widening crusades without any consideration of improving public transport that is sure to increase private cars on the road and Nepal's fossil fuel import bills.

In an attempt to veer away from this insanity and to re-orient the Nepali energy scene to one of more hydropower and that too community supported and multi-purpose where possible, I initiated a set of measures in early 2003. In order to 'democratise the national power grid', the vertically integrated monopoly Nepal Electricity Authority had to be unbundled to allow space for private sector innovations as well as community oversight. While high voltage transmission had to remain a 'national electric highway', open to all entering and exiting, generation would be open to the private sector, especially national small-scale developers, and distribution would be 'communitised'. The idea was to allow village cooperatives or other associations to buy electricity in bulk from the national grid and to retail it by themselves within a price range they would set. Their self-managing the distribution system would also, we hoped, allow them to be more creative with demand-side management. With the local electricity managers motivating them, and the villagers beginning to invest in small-scale lift irrigation, they were electric chaff cutters for livestock fodder as well as chilling centres for milk, mobile phone towers, furniture works and so on.

Rural electrification bylaws 2060 were passed in May 2003 by the board of the Nepal Electricity Authority (NEA) chaired by me as the Minister of Water Resources after going through roughly 27 drafts in six months, with the electro-bureaucracy cooperating only after the 16th draft. Initially initiated in seventeen village groupings and one small township, the community electricity programme has now expanded to almost three hundred groups across Nepal. It has also spurred creative entrepreneurship in the villages, the most notable being the milk-carrying ropeway that replaced its diesel generator with hydro-based community electricity and in the process reduced its power bill from Rs 34,000 per month (of diesel) to only Rs 7000 (of hydro electricity from the grid). If there is one path Nepal can follow to reduce even further its already small carbon footprint, the path to do so would be electrification of transport; but that is an area with strong vested interests of car importers and petroleum dealers, and there seems to be an absence of political will among the major political parties to confront these forces.

This programme of 'communitising' electricity distribution is still a success story despite attempts to undo it, and it stands at par with Nepal's other success story, that of community forestry. In the many unholy political coalitions we have seen since the regime change of 2006 that side-lined the monarchy and brought the Maoists to power, the community electricity programme was almost undone by a 'democratic socialist' Nepali Congress minister who disbanded the community electricity department of the NEA. Subsequently a Maoist minister stopped the 20:80 programme, wherein, if the village electrification group put in 20%, the government would come up with 80%. Public protests from villages across Nepal stopped this attempted dismantling but uncomfortable questions remain. Why would two parties, one a liberal democratic socialist and the other a Maoists communist, do away with a people-oriented and rather successful community-led programme? Just because it was initiated under the King's regime?

The answer seems to lie in the unstated, underlying political economy. To the parliamentary-politics-oriented, democratic socialist Nepali Congress, this programme was a threat to its 'patronage dispensing' politics, what in Nepali is called *Koselee Bikas*, or gifted development. "Vote for me and I will bring you a gift of electricity from Kathmandu", is the political refrain at this end of the spectrum. It may consist of the candidate managing to get a dozen electricity poles from the NEA dumped at the village as proof of his *Koselee* giving prowess. At the Maoist end, it was a threat to them, the existence

of a popular organising principle in the village outside of the party's command chain. Community electricity was owned and operated by the villagers themselves and to which the villagers were more loyal than to the party's cell. Its coming into existence did away with the need for villagers to wait for Koselee largesse from the big-man politician, and the autonomy of its organisation was a distinct threat to the one-party rule that the Maoists wanted to impose in the villages. While both these ends of the political spectrum have not been able to shut down the programme which seems to have taken a life of its own, they are in a constant battle to sabotage or subvert it.

Three major areas crucial to reform the power sector were electricity tariff, storage plants and contracting. I attempted all three but was not successful because our government fell before I could see them through, and subsequent governments whether of the left or the right did not seem to see these as priority items. The existing electricity pricing policy was guided by donor covenants targeted to increasing government revenue. If a donor gave a grant or very soft loan for a hydropower plant, it was on-lent to the NEA by the finance ministry (as per the understanding with its international donors) at 10.25% interest (even when the money came next to free). The stated idea behind it was that Nepal government (and the finance ministry) had to bear the risk of foreign exchange rate appreciation. The unstated reason was something else: it allowed the government to be a *Sahuji*, an usurious money lender, rather than an investor in Nepal's development. If it had been an investor, it would have converted its portion of the loan to shares and got its returns as dividends; and to do so it would have to take an active interest in the healthy management of the NEA. As *Sahuji*, it did not have to worry about that, since it would get its 10.25% interest on on-lent loan no matter how bad the management. (Moreover, as a government monopoly, it could always get the taxpayer or the consumer to bail out failed public sector companies anyway.)

The first thing I did was to get the NEA board to question the 10.25% figure. The finance secretary was ex-officio member of the board and he was asked to provide for a justification for that ancient number, now less valid because Nepal had already gone for a system of partial convertibility of its currency. It turned out that his financial wizards could not come up with a justification for anything more than 5.5%. I was not able to push this number through but several years later, the government – under pressure from consumer groups represented in the tariff commission – did manage to bring the figure down by about 2%. My immediate concern that followed from this was the overall tariff framework, with the on-lent interest only one, but important, aspect of the problem. Given the simplistic pressure of donors to increase the tariff, some more academically sound arguments had to be put forward of why and how much rather than simply buckle under street protests and delay doing it.

A task force was set up in the NEA to re-examine the tariff framework with the explicit mandate of "maximising sales, minimising loss, theft and spill energy by making price the policeman, and obviating as far as possible the need to increase tariff". One of my main motives was to ensure that investments in storage type projects (storing water for power generation both for the dry non-monsoonal season and for daily peaking needs) could be encouraged by a healthy tariff framework. This task force worked intensely for four months and its proposal was put to the NEA board in May 2003. It turned out that introducing daily peak and off-peak rates as well as dry and wet seasonal tariffs would allow NEA several billion rupees in additional revenue without significant hike in tariff. Indeed this revenue increase would occur even when tariff for the lowest slab-consumers was reduced by about 10% for those who paid their bills within a week!

The NEA board approved the framework and sent it to the autonomous tariff fixation commission for formal approval. Unfortunately, our government fell soon thereafter and my non-approval of a USAID-funded junket to the US for members of the commission (until they passed the proposed tariff) was overturned. (Though autonomous, its administrative business was handled by the Department of Electricity Development under my Ministry of Water Resources.) The commission members disappeared for an extended period in the Land of the Brave, leaving behind unfinished business. When it was resumed, agitations by political parties against the King had intensified and the movement led by

the communist and socialist parties prevented this creative tariff framing from being implemented because "reducing tariff for the poorest consumers would make the King popular"!

The reason for trying to encourage storage projects, and that too structurally through a tariff regime that encouraged the extra investments that was required for storage schemes, was that NEA has only one storage type hydroelectric plant, the 60 MW Kulekhani, and it is not sufficient to balance the 700 MW, run-of-river system in the dry season. The privatisation binge via the Washington Consensus that Nepal too went through in the 1990s was producing a debilitating scenario of what I have called a 'flood-drought syndrome' of excessive capacity in the wet season upon completion of a single, relatively large run-of-river power plant followed by rolling power cuts in the system called 'load shedding'. Attempts to get the storage-type West Seti built for Nepal instead of for export (described above), and initiating the Damauli-Seti and Nalsalgad site investigations for future development were some of the initiatives I undertook, but a regime change was about to be initiated (my ministerial car was almost burned down in Damauli by agitating political parties but for the alacrity of the Chief District Officer) and nothing much came of it then. However, ten years down the road, as these lines are being written, there is now renewed attempt to think in terms of storage, and also in conjunction with irrigation as multi-purpose schemes, which will be discussed further below.

A big problem in the power sector and a reason for the high cost overruns in the construction of power plants is the use of the FIDIC system of contracts (a template named after the International Federation of Consulting Engineers commonly known through this acronym for its French name *Fédération Internationale Des Ingénieurs-Conseils*). Unlike a fixed price contract, this one gives discretionary powers to consultants and a client is legally helpless if a collusion of sorts happens between a consultant and a contractor. In Nepal the private sector has used fixed price contracts where the contractor is responsible for any price increase (such as in the Norwegian-funded Khimti hydroelectric project) and that has benefited the client with practically no cost overruns and timely project completion. In the case of donor-funded hydro projects, both the donors and the hydrocrats insist on FIDIC contracts, the donors for the comfort of having their approved international consultants in the driving seat, and the hydrocrats for the rent-seeking possibilities allowed by variation orders wherein provisions in the contract can be changed early and often.

Under my watch, this provision was challenged, possibly for the first time in Nepal's history, but did not reach the logical conclusion it should have reached. The first was with the ADB-funded 144 MW Kali Gandaki, the successor to Arun-3 that utilised its portion of the money committed for the aborted Arun-3. The Italian contractor for the project was quite masterful in the art of variation orders (I was told they had a whole battery of lawyers at their head office whose only job was to work on possible variation orders on civil engineering works from the very day the company had won a construction bid). One of its big claims, approved by the consultant, was challenged by the NEA board under my chairmanship; it was taken to a court in Milano where the court upheld NEA's position. Unfortunately, after our government changed, the succeeding government, instead of recovering the amount from the deposit began 'negotiating' with the contractor. That mistake ended ten years later in 2012 with NEA having to pay the contractor instead of the other way around. Another was the German-funded Middle Marsyangdi project, also a successor to the aborted Arun-3 utilising the German government's portion of its commitment. The cost of the project which had a German consultant and a German contractor had increased – due to unbridled variation orders – by about three times the original estimate (depending on how one made the calculations), and the matter is still with Nepal's ombudsman Commission for the Prevention of Abuse of Authority.

### **IRRIGATION SANS WATER OR FARMERS**

Irrigation is something that Nepalis have practised since time immemorial, mostly at the level of individual farmers or at the community level. State involvement was direct only in rare cases that involved a *raj kulo* (or king's canal) in special areas; mostly it was indirect in the form of a taxation

system that was based on the land's productivity. What changed in Nepal was from the middle of the last century, with what is called the advent of modernity, with the state an active developer of 'modern' irrigation schemes. Indeed, as water resource minister in 2003, I was the chief guest at the function to mark the 50th anniversary of the founding of the irrigation department. What struck me, as an academic of egalitarian persuasion during that function, was the near institutional blindness in addressing what can be called 'subaltern water', or water as actually used by farmers at the very grassroots. The exhibition was mostly about dams and canals and other impressive structures; but the focus was upwards and outwards, not downwards and in-looking. The struggle by village communities to harness whatever spring sources lie in their vicinity to grow crops in a fertile but semiarid land has seen heroic efforts over the centuries; but our modern hydrocrats do not seem to see that.

I was always perplexed by official briefings during ministerial inspection visits: the presentation by the irrigation officer invariably began with the sentence, 'This is a scheme/project of X million rupees'. And my equally inevitable question would be: "that aside, how much water did you actually deliver in which season, to how many hectares and for what crop? How much did the income of the farmers increase with your supply of irrigation waters over and above what it would have been without that water"? Their confused looks seemed to ask, "Crop? Water? Farmers? Minister, what we deal with here is serious stuff like cement and earthworks contractors"! And equally perplexing to me has been a simple observation: why is it, not just in Nepal but all over South Asia, that one does not find a civil engineer selling, and a farmer group buying, his modern irrigation skills? Why is it that their services are only bought either by state hydrocracies or foreign development agencies? In my short tenure as water minister, coming with these questions that I had, I was less successful with new policy initiatives in the irrigation sector than with the power utility; but what little I did attempt still has relevance as I will try and argue below.

The history of irrigation in Nepal is paradoxically both very old and completely new. As a student of water management, I have visited farmer-built and -managed irrigation schemes in the hills of Nepal that are hundreds of years old and still running, producing a second and even third crop every year. The famed stone water spouts of Kathmandu Valley are engineering marvels still functioning after centuries, and are dependent for their flow on the transport of water from irrigation canals that originate from spring sources in the surrounding hills. They are managed by local communities and religious trusts. On the other hand, the government's irrigation department is only about fifty years old. Was there no irrigation to manage then a hundred years ago?

Actually, we are talking of two different worlds, that of the farmer pursuing his inherited craft and that of the modern engineer reacting to contemporary events since the overthrow of the family autocracy of the Rana Shoguns in 1951. It is this striking gap that the new Irrigation Policy 2060 (of May 2003) sought to address howsoever tentatively during my tenure as minister. It sought to bring ponds and village water management civic bodies onto the national radar screen, and to move national accounting away from 'amount of money spent in irrigation works' to 'amount of water supplied and land irrigated to produce additional crops'. There was tremendous resistance to this in the engineering hydrocracy of the irrigation department, primarily because of its construction orientation; and a decade later it still has not been put into practice despite official promulgation.

That irrigation policy document was a negotiated text: it was required by the multilateral lending institutions as a precondition for further aid to the irrigation sector, but the agenda that was being pushed was that of the Washington Consensus of opening up southern markets, privatisation, removal of subsidies to farmers, etc. Strange indeed it was that removing subsidies to Nepali farmers was being pushed by European and North American governments whose own domestic record (i.e. an EU cow receiving more subsidy than the income of marginal Southern farmers) is mind-boggling. This was a topic that had been of mild academic interest to me, but as minister I found myself suddenly facing raw power. An interesting incident occurred when I spoke once at a public meeting about Nepali farmers having to compete against Indian farmers who received free electricity for pumping, heavily subsidised

fertiliser and loan write-offs. Almost the next day, I was facing an agitated delegation of donors led by the resident representative of the Asian Development Bank, with Canadian and other bilaterals in tow. Their concern, expressed in the finest diplomatese, was that the agenda of removing agricultural (and irrigation) subsidies, followed dutifully by the previous governments led ironically by democratic socialists and communists, should not be tampered with, or else!

In countering this hegemony, the irrigation department officials were not of much help: on the contrary, given that their interests lay more with new constructions that would be enabled by aid flows than with irrigation and crop productivity management, they were happy to sign along any policy that would keep the donors happy. I had to look for allies elsewhere and they were found in the National Federation of Irrigation Water Users' Association-Nepal (NFIWUAN). This was an association of farmer-managed irrigation users that was able to raise farmer concerns at the national level better than the construction-oriented irrigation department. NFIWUAN had submitted a list of demands to the elected governments earlier but their concerns had not been entertained. I brought them together with the irrigation officials and hammered out issues point by point; and these were some of the issues that I was able to weave into the new irrigation policy.

The primary point was to make the government's irrigation policy farmer-friendly and away from the previous primary focus on 'command area development', i.e. new constructions. The old Rana administration used to classify land in four categories for tax purposes, depending upon its productivity, with *abbal* (mostly irrigated) land as the highest. This system, instead of being reformed, was allowed to fall into disuse, with the result that land tax amounts to a negligible portion of the government's revenue. The devastating consequence of this neglect for irrigation management in the country was that government-run schemes too delinked themselves from questions of productivity increase. The primary focus of the new irrigation policy therefore was to restore the equilibrium; and the instrument to achieve this was to officially declare irrigated land as such as well as to give irrigation users a role in raising revenue from such lands. Furthermore, government irrigation offices were to produce an annual 'status of irrigation' report under their jurisdiction highlighting the quantity of water supplied per season for particular crops as well as to try and link them to possible indicators of productivity increase. Despite that clearly stated requirement in the official policy since 2003, unfortunately no such report has been produced to date!

Nepal's monsoon dominated climate meant that, of the 80% precipitation that falls during the four wet months, half falls as cloudbursts in as little as fifteen hours. So, while we may be rich in water resources on the average, we have virtually drought-like conditions for much of the year. All this requires that water be collected where it falls through a scattered network of ponds and tanks, and not just where it concentrates in narrow river gorges through reservoir impounding high dams. This kind of thinking demands a policy shift towards conserving (or more often reviving) traditional water-harvesting ponds. Unfortunately, no government body, least of all the irrigation department, looked after this aspect of local water storage in a semiarid clime. It was introduced into the new irrigation policy and will hopefully sometime in the future precipitate some shift in conventional thinking.

Another important change in approach was related to multi-purpose projects discussed earlier. While there has been much lip service on this count, it has not really been seriously implemented in any water project by the government establishment; and the reasons have to do more with turf battles between power and irrigation agencies than with any unsoundness in the idea. Projects are planned and developed as either power or irrigation or flood protection schemes, and professionals guard their turfs with zeal against any encroachment from other engineering departments.

One positive example that struck me was the 5 MW Andhi Khola hydro-electric project constructed by the Norwegian missionary group-inspired Butwal Power Company (BPC). The BPC, 'nationalised' in 1979 by the government was privatised to a consortium of 11 Nepali business houses and one Norwegian partner in 2003 under my tenure as minister. Its 12 MW Jhimruk plant had been bombed by

the Maoists and would have been turned into scrap had it not been thus privatised, since the government had no money for rehabilitation. To date, it is the largest privatisation in Nepal's history, confirming my Cultural Theory credentials of advocating a balance between the market's innovation, an alert community's cautionary activism and a just state's adjudication and regulation. In the water resources sector this could be achieved through an appropriate balance of market-led privatisation (generation), community-led oversight (distribution) and the state's regulatory role (through the control and management of the national grid).

Andhi Khola has a strong irrigation component as well as electricity and is a good example of a multi-purpose project; but this fact is also systematically ignored in all government reports. In sharp institutional contrast, equally striking was the negative example of the 4 MW power house on the canal of the 66,000 ha Sunsari-Morang irrigation project. Instead of managing the powerhouse as an integrated part of the canal operations together with the water users' association, the powerhouse was handed over to the NEA. Because the canal operations, including its gates and dredging, were under the control of the irrigation department, the NEA load dispatcher was never sure when the turbines would come on line. During my inspection visit, neither of the institutions seemed interested in operating it and both put forth flimsy technical excuses for practically mothballing it.

To me it was a national loss of power and hence of revenue, and was quite excited when the local water management association of Sunsari-Morang farmers came forward asking that it be handed over to them for operation. I initiated the process of that happening, along the same model as the 250 kW Nigure microhydro near Tumlingtar (in the eastern hill district), which had been bombed by the Maoists. Three local college campuses of Sankhuwasabha had got together under the leadership of their former MP Hari Bairagi Dahal, approached the NEA for a long-term lease, borrowed money from local banks and rehabilitated the plant. Today the three colleges earn significant revenue from the sale of electricity from this rehabilitated powerhouse, and the phenomenon has earned the sobriquet 'hydro-powered education'. This worked for Sankhuwasabha, but not, unfortunately, for power from the Sunsari irrigation canal for subsequent lack of equally committed policy support.

Another good example of local (or national) multi-purpose development that should have happened, but did not for reasons of inherent bureaucratic blindness, is the 225 MW Sapta Gandaki project at the Dev Ghat confluence of Trisuli and Kali Gandaki rivers. It should have followed the 69 MW Marsyangdi hydroelectric project in the late 1980s, but was scuttled by the politics of Arun-3. When I went on an inspection visit of this site as minister in March 2003, it quickly dawned on me that the very concept behind it was wrong. It had been planned and designed with help from the Japanese aid agency as a *hydroelectric* project, when it should have been conceptualised as a *water supply* scheme.

Nepal can always generate 225 MW from almost any number of places around the country, but it can only supply water to the plains of Chitwan and Nawalparasi (and the growing industrialisation therein) from this site. Moreover, Nawalparasi groundwater has serious arsenic problems and should be replaced by surface water from Sapta Gandaki River. In addition, the existing Chitwan Lift Irrigation scheme in the district of Chitwan in central development region (on the Sapta Gandaki River), which badly needs some solution to the heavy electricity costs and siltation difficulties associated with the pump, would benefit if surface flows could be had from the upper pondage of the weir at Devghat. And the burgeoning town of Narayanghat – the crossroads junction of all Nepal – desperately needs a second bypass bridge on the east-west highway to ameliorate traffic congestion, which a properly designed Sapta Gandaki Barrage could provide. All these multiple benefits could be provided by the Sapta Gandaki project if planned and designed rightly as a multi-purpose project. Moreover, I do not believe that Nepal can ever sort out its benefit-sharing woes with India on proposed mega-storage schemes until it first manages to do so within Nepal among different Nepali beneficiary sectors.

It was to give such a venture a try that I took a ministry team to the Sapta Gandaki dam site at Devghat. A serious difficulty in Hindu Nepal is that an ideal dam site at the confluence of two rivers is

also an ideal holy site, and so it is with Devghat, as well as Barahakshetra on the Sapta Kosi, Ridi on the Kali Gandaki as well as Chobhar or Gokarna on the Bagmati. One argument developed against Sapta Gandaki during the Arun-3 debates was that it would submerge holy sites at Dev Ghat. Inspection showed that it was not true: the only significant holy spot at the lowest point was what was known as 'Sitaji Ko Gufa', which would be well above the full supply level of the pondage, especially if the project was designed as primarily a water and only secondarily as a power project. Minor deities and recently built *ashrams* could easily be relocated from the revenue stream that would flow from such a project; and there was appropriate precedence at Hardwar in India where the Dalhousie Barrage has actually improved the ambience at the Ganga temple site. I was subsequently told by the officials concerned that quick recalculations done with such a paradigm shift showed a viable multi-purpose Sapta Gandaki with reduced but still significant power benefits to the tune of 90 to 135 MW. This effort too fell by the wayside with subsequent uncertainties in Nepal's unending political interregnum, but the good news is that the astute business community of Narayanghat is considering picking it up.

What the new irrigation policy introduces is precisely such a possibility. It requires that the irrigation department promotes storage projects on its own for the sake of dry season irrigation, and if there are power generation benefits, they should be treated as secondary and sold to the national grid through appropriate power purchase agreements. The success of such a policy rests on committed professional leadership within and without the irrigation department capable of taking up the challenge. Given that the most experienced irrigation engineers had retired or were about to from government service, I used the occasion of the 50th anniversary celebrations to convince some of them to set up an outside-the-government association of irrigation engineers.

Electrical, mechanical, civil and water supply engineers already had such professional associations, and irrigation engineers eventually did set up a society of their own. Such a professional civic leadership outside the governmental set-up was additionally needed to provide wholesome counterbalancing guidance to the often populist policy advocacy of the irrigation farmers' association such as NFIWUAN. Since the government irrigation establishment, rife with partisan political interference, has not lived up to expectations and since markets are a long way from seeing profit in an infrastructure-heavy and water rights-bedevelled sector such as this, hopefully civic voices within the irrigation fraternity, through their professional association, will provide the catalysing leadership this sector so badly needs. It would also be, from a theoretical perspective, applied Cultural Theory creating a pluralised institutional context within the irrigation sector. It is my considered position that only such a plural policy terrain will allow Nepal to negotiate effectively with India.

### COMMON THREADS AND CONCLUSIONS

What do these disjunctures tell us? The first lesson is that, Southern socio-environmental activists do not uphold the slogan of the Northern environmentalists of 'No dams!' but argue instead for 'No bad dams!' This provides ample space for constructive engagement in the policy terrain between the government, the business entrepreneurs and the civil society to find a common acceptable ground. Everyone in the South wants development: the question is what kind of development is belle-development and what kind mal-development; and that debate will rage, has to rage, until the public policy terrain is satisfied the issues have been seen from all sides. No hydro-hegemony should be allowed to hijack the process or the initiative; and if it does, grief and impasse will be the only outcomes as has happened with the Mahakali Treaty that is languishing for the last sixteen years even after it was ratified with much fanfare in 1996 by over two-thirds of the Nepali parliament.

The second lesson is related to the metaphor of a perfume as against a powerful antibiotic ointment I mentioned at the start of this article. What the experts and professional think about water projects and their development resembles a perfume applied to the skin: it can fill the room with fragrance but nothing of medicinal value seeps through the skin itself. Similarly, expert and academic views have great relevance at the professional and international (and sometimes even national) levels – and do

influence thinking there – but at the level of mass politics in the myriad villages of a country, it is what the politicians and the political parties (and not experts) say that drives public opinion and influences policy. If academics and activists cannot influence local politicians or win their confidence, some very bad projects can be pushed through despite their correct 'scientific' objections.

The third lesson, related to the second, is that politics, unlike academia or professional thinking, is often driven by very short-term and mundane thinking. Many large water projects are attractive to politicians and political parties because they provide the opportunity for patronage dispensing, accumulation of party war chests and make for good iconic propaganda. The arcane mathematics of cost-benefit analysis is for some future generation to worry about. As the apocryphal story of an American politician said, "why should I worry about the future generation? What has the future generation done for me"? If the academics hope that the politicians especially in the villages and districts of the global South listen to them, they had better learn to translate their concerns into a language that is understood in local political terms, something they have mostly failed to do.

That understanding has to be delivered in terms of the new religion of our times, which are those of the development *dharma*. Indeed, as the example of the successful campaign against Arun-3 showed, the activists have succeeded best when they have been the devils quoting the scriptures, when economic arguments were used against the World Bank. This is so especially because the method of cost-benefit analysis has been debased by powerful hegemonies to justify and provide cover for bad projects; and only critical activists are capable of sophisticated analysis that can provide countervailing viewpoints. However, those powerful explanations, so effective at the global level, mean little at the local level, where the perception of the people is that they have been denied development. That is where conventional modern water punditry has failed, and for it to succeed, it has to speak the language of development *dharma*, and through grassroots-based institutional mechanisms, to help local opinion makers distinguish between good and bad developments.

And finally, the politicians and hydrocrats pushing large projects that are opposed by socio-environmental activists need to stop thinking that a procedural victory through high governmental decision or the courts is the end of the matter. Issues of equity and justice have a habit of re-emerging from the woodworks and no amount of chorus singing in their favour by donor-, government-, business- or party-organised DONGOs, GONGOs, BONGOs or PONGOs will come to your rescue when a sense of being unfairly treated prevails. The best recent example of that is the South Indian dacoit Veerappan who terrorised the states of Karnataka and Andhra Pradesh for years, provided protection to sandalwood smugglers among others, and even managed to kidnap film stars and chief ministers for ransom. It turns out he was the grandson of a Mettur Dam oustee, a dam built by the British Raj in 1924.

This sense of unfairness can come back to haunt the system even generations hence. Academics who study water have done so mostly from the perspectives of efficiency (engineering economics) or of procedures (law) but not to that same degree from the perspectives of politics and issues of fairness. If they want to be 'policy relevant', i.e. relevant as Brahmins behind the throne to political decision-makers, they have to be even more relevant to the marginalised, especially if they have the vote, or can disrupt governments by voting with their feet with violent protests. Politicians, even those who have championed what most of us academics have seen as wrong projects, have done so striking a chord among their voters. It is up to the academics to speak to those same voters striking through activism another chord of 'better truth', if the issues of fairness and justice are not to remain in the margins of their professional life.

THIS ARTICLE IS DISTRIBUTED UNDER THE TERMS OF THE CREATIVE COMMONS *ATTRIBUTION-NONCOMMERCIAL-SHAREALIKE* LICENSE WHICH PERMITS ANY NON COMMERCIAL USE, DISTRIBUTION, AND REPRODUCTION IN ANY MEDIUM, PROVIDED THE ORIGINAL AUTHOR(S) AND SOURCE ARE CREDITED. SEE [HTTP://CREATIVECOMMONS.ORG/LICENSES/BY-NC-SA/3.0/LEGALCODE](http://creativecommons.org/licenses/by-nc-sa/3.0/legalcode)