

## Hydropower Development in Nepal: Pluralistic Policy Terrain or Mono-centric Path?

---

Ajaya Dixit

Director, Nepal Water Conservation Foundation; [nwcf@wlink.com.np](mailto:nwcf@wlink.com.np)

---

---

---

### Abstract

After multi-party democracy was restored in 1990, Nepal's hydropower policy terrain began to grow more pluralistic, involving not just government, but also private and community initiatives. The presence of a diversity of voices has brought numerous societal benefits, in contrast to the earlier government-dominated approach, which often lead to an impasse. This paper takes a brief look at state-guided unitary hydropower development in Nepal between 1911 and 1990 and argues that democratic change in 1990 enabled multiple voices in the policy terrain to be heard and resulted in positive outcomes. Recognising multiple perspectives is a necessary precondition to foster common values and a shared commitment for being able to respond to water and energy issues in Nepal's increasingly complex and uncertain socio-political context.

### Keywords

Hydropower policy terrain, government-dominated approach, democratic change, multiple perspectives.

---

---

### Competing worldviews and contested political space(s)

Recent studies in social science, particularly concerning technological choices, indicate that the response to scarcities of water and energy varies according to people's perception of risk and view of nature which define the problem and preferred solutions. These studies identify four basic orientations or cultural biases in institutions: hierarchical, individualistic, egalitarian, and fatalist.<sup>1</sup> The first three are characteristic bureaucracy, the market and the egalitarian activist group respectively. Each is an active and strategizing grouping which uses a different institutional filter to perceive and assess risks.<sup>2</sup> Based on Cultural Theory (Douglas and Wildavsky, 1982) each orientation elaborates on views of nature that people have. For example, hierarchists assume that nature is tolerant within limits and their management style is to exercise control by keeping the system within its limits. Hierarchists have a risk-limiting attitude. Egalitarian worldview sees nature as ephemeral pursuing a

---

<sup>1</sup> For a discussion on four fold orientation see Douglas (1999)

<sup>2</sup> See Douglas (1985)

cautionary style. For individualists, nature is benign and people are self-seeking. They are characterized as risk takers, whose strategy is to focus on the short-term. According to Cultural Theory, fatalists believe that nature is capricious.<sup>3</sup>

This four-fold orientation also has salience in the world of dam building. Dam construction began under the aegis of the state which defined the problem as lack of water or energy supply. The solution it proposed was to bring more supply using an expertise-led organization such as a hydrocracy. Such an organisation prefers a structural engineering approach that believes in mastering and controlling natural flows. In the past, dam builders were not concerned with questions of benefits or their distribution. In recent times however, this structural engineering approach has been beset with criticism of social movements that define the problem and solution differently.<sup>4</sup> According to this egalitarian view the problem of poor water and energy services is that there is too much waste. The individualistic market has a third view: it seeks to form networks for maximizing profit. The bureaucracy, the market and the egalitarian groups often jostle and attempt to define the policy terrain on their own terms. Each seeks what Robert Dahl characterizes as closed hegemony in which one voice drowns out all the rest.<sup>5</sup>

The current policy terrain of Nepal's hydropower development fits Dahl's description, the state, its minions and business leaders argue for the benefits of exporting hydropower to become rich. They refuse to consider the merit of "clumsy institutions", a term coined by law Professor Michael Shapiro, as a way of escaping from the idea that when we are faced with contradictory definitions of a problem and its solution, we must choose one and reject the others.<sup>6</sup> In a clumsy institution no voice is excluded, instead contestation is harnessed through constructive, if noisy, argumentation among different worldviews. At the conceptual level, hierarchies call for 'wise guidance and careful stewardship', individualists emphasise 'promoting entrepreneurship and technological progress', egalitarians insist on developing 'a whole new relation with nature' and fatalists ask 'why bother?'<sup>7</sup> On a practical level, considering Nepal's hydropower development terrain, we find these specific responses:

- Hierarchies advocate building large dams to export hydropower to India because the revenue generated will increase the average national per capita income.
- Individualists support continuing with vigour the power purchase arrangement that has fostered the generation of hydroelectricity which they believe will avert a national energy crisis and provide more Nepalese with cheaper electricity services. As long as they can benefit from export through some contract or share in the pie they have no problem with construction of hydropower dams and export of hydropower.
- Egalitarian activist groups argue against exporting hydropower to a single buyer because revenue will be uncertain and because per capita income is an inappropriate indicator of progress. They argue that the poor, socially excluded and nature must be protected and local capital utilized.
- Fatalists simply cope with the ongoing power shortage with a typical Nepali response "Ke garne!" (What to do?).

---

<sup>3</sup> *Ibid.*

<sup>4</sup> Based on Schwartz and Thompson (1990).

<sup>5</sup> This section is based on Verweij *et al.* (2006).

<sup>6</sup> *Ibid.*

<sup>7</sup> *Ibid.*

International stakeholders in water resource planning, development, use, and management have been arguing about the need for and the utility of dams, particularly large ones, since the 1980s. One view is that large dams are needed to fulfil water and energy needs; the other is that the social and environmental costs associated with large dam construction are too high and that the performance of large dams is poorer than promised. The debate has an ideological element to it, casting local approaches to development against centralized ones, supply-side policies against demand-side policies and state-based regulatory approaches against market approaches.<sup>8</sup> Though it has not constructed many dams, Nepal found a position in the global debate when local groups and their trans-national allies questioned the economic viability of the World Bank-funded Arun III hydropower project and forced the Bank to withdraw its support to the project in 1995.

As it is for every country, meeting the demands of a growing population for water, food and energy is a major challenge for Nepal. As life-sustaining resource water is not only vital for the health of the ecosystem but is also a key determinant of national development, especially in the form of hydro energy that will be necessary for sustaining and diversifying livelihoods. For this reason it is also considered to be an important geopolitical resource. Though government, the market and egalitarian activists groups agree on the importance of water to maintain a good standard of living, their views on how the various needs for water should be met differ markedly.

### **The power of water: from water mills to export commodity**

Historical factors, geopolitics and internal socio-political dynamics largely isolated Nepal from the global social, economic and political changes which occurred across the world in the 19<sup>th</sup> century. The peoples' needs for drinking water, irrigation and motive power were met using locally developed technologies: farmers built and managed systems for irrigation; people exploited springs and stone spouts for drinking water and ran water mills to generate motive power. In the beginning of the 19<sup>th</sup> century, the expanding Gorkha kingdom of Nepal collided with the British, the colonial power in South Asia, and was defeated militarily. As a result the territorial expansion of the Nepali state came to a halt, the military apparatus lost its purpose, began colonizing internally through rent seeking. In addition, the ruling elite became aware of the utility of modern water use technologies and built the first piped drinking water system, hydroelectric power plant and engineered irrigation system in 1891, 1911 and 1928 respectively.

Unlike in the West where such technologies were developed as a means of production, they were introduced in Nepal as elements of luxury by the ruling elite and the nobility. In the West, the rise of capitalism, science and technology resulted in the emergence of a competitive market; the establishment of universities as sites of knowledge production, problem-solving and capacity-building; a representative polity; accountable governance and functioning institutions of capitalism such as banking, insurance and property rights; and the primacy of the rule of law. In Nepal, in contrast, institutional and structural constraints worked against such developments and kept the country backward. Indeed, even today, there are still traces of Nepal's colonial economic past, when able-bodied men were hired by the British Army and raw natural resources such as timber were exported to the Raj.

Towards the end of the British Raj in India, the potential for exporting electric power from Nepal was recognised. A memorandum by the Secretary of British India suggested:

*“There is one particular sphere of progress which seemed to hold out some hope and that it is in the development of hydropower in Nepal. Indeed, it may perhaps be said that Nepal has two important exports, one realised, namely soldiers, and the second perspective, namely electric power.”*

---

<sup>8</sup> See Moench, Dixit et al. (2003).

The departure of the British from India did not significantly alter its political economy *vis-à-vis* Nepal. Unsurprisingly, the new Indian state emulated the structure put in place by the Colonial Raj. As Gail Kelly and Philip Albach argue,

*"Once established, it is very difficult for the governments of the Third World nations to break with pre-independence. Inertia is a strong force in that functioning institutions, even if they are not ideal, are often seen as sufficient. There are often no readily available models to take place of the colonial structures".<sup>9</sup>*

To cite a particular example, after Indian independence, India and Nepal began discussing ways to control the Kosi river in East Nepal, an effort that had been started by British engineers who had sought to regulate the river using embankments and barrage as early as the 1820s. The two neighbours later have negotiated and signed three water sharing treaties. The 1954 treaty concerning the Kosi river paved the way for building embankments to control flooding and the Kosi Barrage to provide irrigation to Bihar. The Gandak Treaty signed in 1966 was intended to provide supplemental irrigation to north Bihar, Uttar Pradesh and sections of the Nepal Tarai. Both treaties included provisions for building hydropower plants. The two governments signed the third Treaty on the Integrated Development of Mahakali river in 1996.

The idea that Nepal was very rich in water resource emerged after Swiss geographer Tony Hagen submitted a report to Nepal's first democratically elected government. His finding was based on his 1959 study of Nepal's geology which included 14,000 km of travel right across the nation. A few years later, Nepal's Hari Man Shrestha, in a doctoral dissertation written in the former Soviet Union, estimated that Nepali rivers could theoretically generate about 83,000 MW of electricity. The enormity of this number seemed to fuel the popular imagination about the likelihood that hydropower held the key to the nation's development. Surprisingly, what caught people's imagination was not the primary function of the produced energy as an input to the production process but its secondary function as a commodity for export. The logic was that since so much hydropower could be generated and that hardly any would be consumed within Nepal itself, the surplus should be exported to earn revenue for the government. This notion was reinforced by the hydropower discourse in India, which suggested that hydropower generated in Nepal should be used to run groundwater pumps and to promote industrial development in the Indian plains. Referring to the proposed Karnali-Chisapani Dam at Chisapani in the Karnali river, Indian journalist B.G. Verghese wrote in 1970,<sup>10</sup>

*"Nepal could not use more than a fraction of the power generated, which by virtue of the impossible mountains to the north, must be exported to India and could be used for lifting groundwater in Uttar Pradesh and for other industrial use.... Nepal would have no other outlets and its revenue from sale of power, would, like the oil royalties earned by West Asian principalities, be the mainstay of its budget."<sup>11</sup>*

Hydropower generation and irrigation development in Nepal began in earnest in the 1960s under the aegis of foreign aid institutions. Three early hydropower projects were built in the Trisuli, the Rosi Khola and the Sunkosi rivers with financial and technical assistance from India, the former Soviet Union and China respectively. Nepal also sought foreign technical and financial aid to study the feasibility of constructing large-scale hydropower projects which could export energy to the Indian grid. Most of these projects were conceived as multi-purpose projects: besides generating energy they would facilitate irrigation, flood moderation, navigation and inland fishery. Because the Indian

---

<sup>9</sup> Gail Kelly and Philip Albach as quoted by Ahmed (2002).

<sup>10</sup> A classic influence of the discourse is reflected in a 1978 speech by the then Nepalese Prime Minister Kirti Nidhi Bista while on an official visit to India. He said that "the completion of Pancheswar project would infuse new life to the slow pace of industrialisation of Uttar Pradesh caused by lack of electricity". Mr. Bista was addressing the welcome meeting organised by Nepal-India friendship association at Lucknow. See *Gorakhapatra* 19 April 1978.

<sup>11</sup> See Verghese (1970).

and Nepali governments had different views on how to allocate costs and benefits, no agreements were reached. In 1996 the two governments signed an integrated treaty on the sharing of the Mahakali river. Nepal's parliament ratified the treaty with the two-thirds majority required by the country's 1990 constitution. Though the treaty proposes a modality for sharing benefits and costs, no progress has been made as officials disagree on the interpretation of certain clauses.<sup>12</sup>

Nepal's continued dependence on foreign expertise for planning, designing and constructing water development projects, including hydropower projects, has been debilitating. The basic tenets of hydropower development, such as local capacity building, using energy to enhance forward linkages in the economy and expanding the pace of providing electricity services to the country's population have taken a back seat as Nepal has continued to witness high energy costs because of its state-guided approach to hydropower development. Despite its theoretical potential of 83,000 MW, in 1995, when the World Bank pulled out of Arun III hydropower project, Nepal generated about 300 MW of hydroelectricity in the national grid and served less than 20 percent of its population. Like many developing countries, Nepal also lagged behind in meeting the goals set during the International Decade for Drinking Water and Sanitation.

Global debates about dams are complicated by the persistently low coverage of drinking water and sanitation services and the increasing pollution and degradation of resource. It is clear that the benefits of large dams are not shared equitably and that dams have many unmitigated negative social and environmental impacts. The bulk of their benefits go to a limited number of people in a limited number of places, to the detriment of the poor, the marginalised, the uneducated and the unorganised. The conventional developmental philosophy, which considers water from a sectoral perspective without considering its broader role in maintaining lives, livelihoods, culture and ecosystems, has been deemed inadequate.

A political space for re-defining Nepal's need for hydropower through societal negotiation occurred in 1990, when the centrist socialist Nepali Congress Party and the leftist United Marxist Leninist (UML), initially Marxist Leninist, came to occupy mainstream politics when the 1990 people's movement overthrew the partyless *panchayat* system. The development ideology of these two major parties seemed to internalise the historical legacy that viewed hydro energy as an export commodity rather than a tool to enhance production, a view which has set in motion the socio-political process defining the contours of the current hydro development paradigm.

Gyawali (2003) has defined this approach which entails adding a hydropower plant only when increased demand has to be met as a classic 'flood-drought' syndrome. Characteristically, Nepal built its second hydropower plant only a full 25 years after the first was built in Pharping. It was another 20 years before it built the third. The power of each plant was supplied largely to the capital and to those regions close to the gradually expanding national grid. Only when the existing supply was exceeded by the growing demand, was another plant added. These projects were initially built with bilateral assistance but after the 1970s they received both bilateral as well as multi-lateral financing. The spectre of planned power outages reached a new height in 2008 when Nepal's power management utility, the Nepal Electricity Authority (NEA), announced that the country's grid would face a power outage of up to 12 hours a day in a dry season and that the condition would last for five years.<sup>13</sup>

---

<sup>12</sup> For an elaborate discussion on the Mahakali Treaty see Gyawali and Dixit (1999); Dixit, Adhikary and Thapa (2004); Dixit and Basnet (2006).

<sup>13</sup> Faced with a never ending reality of load-shedding the average consumers show fatalistic behaviour and ask '*ke garne*' (what to do?). It is a typical fatalistic Nepali expression which accepts that one can do nothing about anything and hence the best response would be to ask, with a shrug of both shoulders what to do?" In response to the endemic power outage some have switched to solar panels, electric scooter while sale of electric inverter has increased. Petroleum generator sets are other method used to avert power crises.

Nepal's approach to hydropower development was unlike that of Norway, Switzerland and China, all of which began developing small-scale, geographically scattered hydropower plants from the outset. Each plant supplied power to one industry or electrified one community. These countries used their plants as a way to increase their in-country capability to build the larger hydro schemes which would be needed later to expand their national grids (Pandey, 1994). Broadly speaking, the policies of these governments were based on decentralisation, self-construction, self-management, and self-consumption.

A different trajectory can be seen in the United States of the early ninetieth century, when large dams were built to bring human settlement to the West and rivers were used to foster market growth. This development received a considerable boost during the Great Depression of the 1930s, when President Roosevelt's New Deal used construction of large-scale hydropower projects to create jobs for the unemployed and to stimulate economic recovery. Projects provided employment, regulated water for irrigation, and generated electricity for industrial and domestic purpose. This approach became known as the Western United States model. The completion of projects like the Tennessee Valley Authority (TVA) helped transform the Tennessee Valley from one of the poorest regions in the United States in 1933 into a region with a strong, diversified economy and a healthy environmental base.<sup>14</sup> In the aftermath of the Second World War and at the beginning of an era of foreign aid, the water development model of the Western United States was incorporated as a key element of foreign aid. The then U.S. President Harry Truman's four-point programme suggested that technology was the means to solve the problems of development. Large-scale hydropower fitted the model.<sup>15</sup>

Nepal's hydropower development trajectory followed neither of the above paths. It did not construct small-scale, scattered and decentralised hydropower plants as Norway, Switzerland or China had, nor did it pursue the Western United States model of fueling the national economy by enhancing the forward and backward linkages of its investment. Instead, the idea of exporting hydro-energy became the order of the day.<sup>16</sup> Because this approach was adopted, the country continues to face the following major constraints to hydropower development<sup>17</sup>:

- Nepal's energy needs are still met by traditional sources and the share of hydro-energy is less 2 percent of the total energy use. And bulk of hydropower generated is used for domestic purpose.<sup>18</sup> In 2007, NEA sold 40.7% of its electricity to domestic users, 38% to industries, 6.6 % to commercial and rest to non commercial including the agricultural sector. (NEA, 2008);

---

<sup>14</sup> Worster (1985) *ibid*.

<sup>15</sup> President Truman's speech on 20 January, 1949 mentioned four points that would guide American policies towards developing countries: the first related to the interest of the U.S.; the second to the functioning of liberal market economies; the third to resistance against communism and the fourth to the use of modern scientific and technical knowledge to increase production and thus to ensure peace and prosperity in developing countries. See Escobar (1995) for a discussion. The Damodar Valley Corporation (DVC) project in West Bengal was an effort to emulate the TVA model. Its performance has been not up to mark.

<sup>16</sup> Nepal's national past time with export has not materialised in a situation of monopsony buyer. Two examples are the West Seti and the Pancheswor Project, which have been planned for more than ten years but face technical, social and political hurdles.

<sup>17</sup> This section is adapted from Dixit and Basnet (2006).

<sup>18</sup> In 2001 hydropower accounted for about 1.78 percent of the total energy used in Nepal. See <http://www.rrcap.unep.org/male/baseline/nepal/NEPCH.htm> and [http://www.bspnepa.org.np/pdfs/cse\\_61.pdf](http://www.bspnepa.org.np/pdfs/cse_61.pdf) accessed on 24<sup>th</sup> Dec 2008. The major share was of forest, followed by agriculture residue. Even in 2008, the pattern is not much different.



- At 79 kWh (Koirala, 2008) Nepal's per capita consumption of electricity is one of the lowest in the world. In advanced countries such as Singapore the per capita consumption is about 6,500 kWh;
- The average electricity tariff of Rs 7.80 per unit is high compared to Nepal's low economic and human development. Per capita income was US \$ 289 in 2005 and Nepal ranked 140 of 177 in the Human Development Index;
- The ploughing back of investments into local economies is limited though some small projects do perform well on this count. In the case of the 20-MW Chilime Project developed under the auspices of the market, Bhattarai (2006) found that about 40 per cent of the investment was ploughed back into within the Nepali economy;
- Reconciling competing demands and avoiding disputes over water rights are serious tasks. Studies suggest there is considerable local dispute between different irrigation systems and between irrigation and drinking water systems.<sup>19</sup> The nature of the relationship between power production on the one hand and uses on the other has not yet been documented in many plants though such studies could help identify mechanisms to minimise disputes.
- The hydropower sector is afflicted by the flood and drought syndrome: a period in which surplus power is available is followed by three to four years of deficient supply. In December 2005, the government announced regular load shedding of about three and half hours a week. By February 2008, the timing had increased to eight hours a day (46 hours a week). December 2008 also saw a long period of outage.

The above outcomes fly in the face of the expectation that national development could be achieved by exporting hydroelectricity to India from large-scale projects in Nepal. The policy of exporting electricity was favoured during the monarchy and has continued to be favoured under the republican order constituted in April 2008 when the monarchy was voted out. The Maoists party secured the most votes in the Constituent Assembly and few months after the election became head of a coalition government comprising the United Marxist Leninist (UML) party, other small leftist parties and several parties of the Tarai. During the interim government headed by Girija Prasad Koirala, two major hydropower projects were awarded to Indian companies.<sup>20</sup> Reneging on his Party's earlier promise to nullify the "rastraghati" (anti-national) 1996 Integrated Mahakali Treaty, Maoist Prime Minister Puspa Kamal Dahal during his September 2008 visit to New Delhi agreed to pursue the Pancheswor dam project by establishing the Pancheswor Development Authority. In a 40-point rejoinder submitted to the then Prime Minister Sher Bahadur Deuba in February 1996, the Maoist party had demanded that this treaty, which sets the stage for building the 335-m high Pancheswor dam, be abrogated.

Despite the national fascination for power export to the Indian grid, not one project dedicated to that aim has been built. Instead, Nepal imports electrical energy from India. In 2007, it received 3.3 x10<sup>8</sup> kWh or 10.8 percent of the energy it consumed that year. It is no wonder that the export

---

<sup>19</sup> Dixit (1997) discusses dispute between the operations of a hydropower plant in Kathmandu and local irrigation. Dispute among hydropower generation, irrigation and local interests is also seen in the case of the Jhimruk Hydropower Project in Pyuthan District. When Jhimruk Khola was diverted to generate hydropower, the paddy fields downstream were deprived of irrigation water. Local farmers staged a protest demanding that the dam release sufficient water for irrigation. The farmers claimed compensation for the land acquired by the project, demanded employment for local people and the distribution of electricity to the locality. The conflicts over water are discussed in *Water Rights, Conflict and Policy* published by IIMI, 1997.

<sup>20</sup> License of the Upper Karnali Project was awarded to GMR Group while the government owned Sutluj Bidhyut Nigam has received license for the Arun III hydroelectric project.

guided approach began to be questioned, critiqued and challenged by those who espoused self-reliant approach to hydropower development.

### Post 1990 era

The self-reliant discourse on hydropower began in Nepal in the aftermath of the political change in 1990 when multi-party democracy was re-established as the partyless *panchayat* system was abolished. The year 1990 was remarkable for many reasons. First, it changed the architecture of the global socio-political context: the breaking of the Berlin wall and the collapse of the Soviet Union were heralded as the victory of liberal democracy. Other events including Margaret Thatcher's privatization of drinking water companies in the UK and the development of the World Wide Web as one of the engines of globalization consolidated the notion of neo-liberalism. This ideology became the new global *mantra* for economic pursuits. Nepal's nascent democracy began its foray along the neo-liberalist path with little recognition for the need to protect the majority, who remained in the informal sector. The country's still immature political institutions stopped questioning the neo-liberal philosophy of development (or lack of it). They adopted an outlook that the forces at work are so powerful that there is no chance of engaging with the course of events and believed that some unseen hand in a faraway place would somehow ensure things work in their favour.<sup>21</sup> Six years after Nepal began its second attempt at liberal multi-party democracy in 1990, a violent insurgency erupted and the Maoists' People's War engulfed the nation for almost a decade, from 1996 to 2006.<sup>22</sup>

There was a positive side to the change as well. Nepal's new attempt at a multi-party system heralded in an era of competitive politics. In this liberalised political environment, citizens demanded rights as well as access to benefits and information. Many questions regarding the path to development in general and to hydropower development in particular began to be articulated in public. Civil society groups began to challenge the conventional approach to hydropower development as debates emerged over the Arun III hydropower project, the memorandum of understanding with India on the Tanakpur Barrage and the Integrated Treaty on the Mahakali river. Other debates over the issuing of a license for the development of the West Seti Hydropower Project to the Snowy Mountain Engineering Corporation (SMEC) of Australia, the proposed awarding of the license for the Karnali-Chisapani multipurpose project<sup>23</sup> to the now bankrupt Enron, the energy giant of Texas, also surfaced.

At the same time, South Asia as a whole saw many other dam-related debates--the sharing of the Cauvery river, the allocation of Ganga river at Farakka Barrage between India and Bangladesh, and the partition of the Indus river system by the Indus treaty between India and Pakistan are only a few of the striking ones. Most of these debates initially involved only two governments. The debate over the Cauvery river, for example, is between the governments of the Indian states of Karnataka and Tamil Nadu and involves the apportioning of benefits as defined by state agencies. In Nepal, too, decision-making terrain about water development and management was dominated by state agencies, which receive support from multi-lateral lending agencies and bilateral donors.

This approach to obtaining benefits is based on the assumption that state agencies are the repositories of citizens' trust and that they can therefore decide for them. Reality is far from such an

---

<sup>21</sup> See Gyawali (2003).

<sup>22</sup> The contours of the debate began to change around mid 2005s. The Maoist and the government led by Nepal Seven Party Alliance signed a peace accord. The Parliament was reinstated. King Gyanendra lost power and Nepal's monarchy is in the state of animated suspension with the Interim Parliament declaring that the country will be organized as a federal democratic republic. This decision was to be endorsed by the first meeting of the Constituent Assembly whose election is to be held on 10<sup>th</sup> April 2008. The meeting voted to abolish Monarchy.

<sup>23</sup> This project has been designed with an installed capacity of 10,800 MW



assumption: large sections of the population lack access to basic water-based services and environmental degradation further exacerbates the injustice. As environmental movements in South Asia emerged in the 1970s activist groups began contesting the state-centric approach. In particular, they were at loggerheads with state agencies and the multilateral agency of the World Bank over three projects, the Sardar Sarovar project, the Flood Action Plan (FAP) in Bangladesh and the Arun III hydropower project in Nepal.<sup>24</sup> In each case, egalitarian groups contested the formulation of a project designed to provide drinking water, irrigation, security from flooding and energy by presenting their own sets of arguments. Each espoused its own values and biases, which were defined against those of others and sustained by aggressive self-definition. Each group showed a preference for a particular set of institutional form as well as the kind of knowledge and technological choice that went with it.<sup>25</sup> Since each had a blind spot and provided only a partial worldview, together they would present a more complete picture.

In response to their challenges, the World Bank withdrew its support to all three projects. The Bank's withdrawal was significant for four reasons. First, it indicated that the conventional water development paradigm had reached a state of impasse and that local aspirations would not be met unless there was a fundamental shift in approach. Second, it demonstrated that local wisdom was able to provide countervailing intellectual arguments and suggest alternatives.<sup>26</sup> Third, it became clear that a global initiative of some kind would be necessary to transcend the polarised debate over approaches to dam building. Fourth, even within the Bank views about how a dam should be built was polarised and it became clear that the prevailing model did not work.<sup>27</sup>

The debates in Nepal over the 'trajectory of hydro-development' occurred largely within the global discourse and the debates in South Asia. These debates reflected the desire of Nepali society to adopt practical approaches to developing the country's water resources that would meet the needs of Nepal and the Nepali people. Indeed, the debates spurred the formulation of new policies about generating cheaper electricity, using indigenous financial resources to develop hydro projects, involving the communities as major actors in electricity distribution, institutionalising mechanisms for sharing royalties from hydropower projects with district-level governments, and adopting measures for assessing the environmental impacts of a proposed project as well as for identifying alternatives to it.

### **Diverse voices bring societal benefits**

After 1990, as globalisation brought together not just market actors and government agencies but also helped forge transnational alliances among activist groups, debates of the nature described above began to find salience in Nepal. Gradually Nepal's hydropower terrain began to shift from a mode in which development was defined and implemented by the government alone to a situation in which market and community initiatives also had space. According to Dixit and Basnet (2006), the features of the changes included the following:

---

<sup>24</sup> Khagaram (2004) discusses the formation of transnational alliance around dam issues. See Dixit (2001) for a discussion on the debate around the three projects, also Bissell (2003)

<sup>25</sup> This discussion is based on Douglas (1999). *Ibid* Dixit (2001) for an application of the concept to the water debates that led to the formation of the World Commission on Dams (WCD, 2000).

<sup>26</sup> Michael Thompson has defined the withdrawal of the World Bank as an indication of local wisdom asserting itself, see Thompson (1995).

<sup>27</sup> David Grey Senior Advisor to the World Bank made this observation in a consultative program on hydropower development in Nepal, on February 1, 2008

- First, the private sector got involved in hydropower development. The promulgation of the Electricity Act of 1992 paved the way for this development in its preamble: “It is utmost necessary to extend proper distribution system in the rural areas where electrification has not been done and also to develop hydropower of the country by motivating national and foreign private investor.” The two critical objectives of the Act were (1) to enhance the development of hydropower so it would meet the energy needs of industrial development in the country and (2) to promote national and foreign private sector investment in the development of hydropower. The government’s new hydropower policy (2001) adopted the spirit of the 1992 Act with respect to private investment.
- A second characteristic of the shift was the introduction of private (foreign direct) investment, such as exist in the Bhote Kosi and Khimti hydropower projects, both of whose power purchase agreements have raised concerns. A debate about installed capacity of the Bhote Kosi plant has arisen. Another example of private sector investment is the 20-MW Chilime hydropower project in the Chilime river, which was built in 2003 by a local subsidiary company established by the state owned NEA in 1995.
- A third element was the announcement of buy back rates by the NEA Board, an issue of public debate since the 1990. In 1998, the then Deputy Prime Minister Shailaja Acharya, who was also responsible for Nepal’s water resources portfolio, announced through the NEA Board the rates at which Nepali entrepreneurs developing hydropower plants in the range of 1 to 10 MW could sell electricity to the grid.<sup>28</sup> According to this proposal NEA was to buy electricity for NRs 4.03 per kWh in the dry seasons (at 90 per cent capacity factor) and at NRs 2.76 per kWh in the wet season. Since this offer did not inspire the confidence of investors, the rates were revised in November of the same year. The capacity factor was reduced to 65 per cent and new rates were set: NRs 4.25 per kWh in the dry season and Rs 3.00 per kWh in the wet. The plants were to begin generation in 2003 and NEA was to buy a total of 50 MW. The purpose of announcing the buyback rate was to encourage Nepali entrepreneurs to invest in and sell electricity to the national grid.
- The partial unbundling of NEA in 2004 was the fourth feature of the shift. NEA is an amalgamation of the then Nepal Electricity Corporation (NEC) and the Electricity Department (ED) in 1985. After two decades of operation, NEA’s generation, transmission and system operation, engineering services and distribution as well as consumer services were broken up into core business groups. Twenty distribution centres (DCs), each with some independence, authority and accountability in its operations were created (NEA, 2004). This process reflected the post-1990 move towards the neo-liberal agenda of reforming public sector utilities.<sup>29</sup>

---

<sup>28</sup> This decision was taken on 28 June 1998.

<sup>29</sup> Partially unbundling NEA emanated from the push for public sector reform typically seen in post 1990 as the policy pendulum swung from state-led approach to reliance on the private sector. Two decades ago the pendulum was at the other end when private sector institution was nationalised. In 1985 Nepal’s Department of Electricity was merged with the governmental owned parastatal Nepal Electricity Corporation (NEC) to form the NEA. The merger was a precondition of the multilateral lending agencies for the approval of a loan to construct the 69 MW Marshyangdi Hydropower Project. Earlier in the 1970s the World Bank was engaged in putting together a loan for the Kulekhani Hydroelectric Project for the Nepal government. Its staff appraisal reports mentioned private electricity outfits such as the Bageswari Electric Company, Eastern Electricity Corporation and Butwal Power Company (BPC) and tacitly approved their nationalization by bringing them within the fold of the newly created NEA. This decision was guided by the onus to create a monolith state controlled utility to push loans rather than helping companies acquire technical and managerial skill to improve performance and hence the services (Gyawali and Dixit, 1999). With re-emergence of neo-liberal agenda in 1990s, unbundling gained currency and in 2003 government of Nepal sold the shares of the BPC to the private sector. The proposed new electricity act to facilitate the transition was however, stalled due to opposition from trade unions within NEA. How will the financial meltdown of 2008 and government bailing out private banks in US and Europe influence public policy on these processes remains to be seen.

- The fifth element was the government's engagement in dialogue about dams and development with civil society groups and market institutions. The process began in January 2003. In its first phase, the dialogue helped carry out a scoping study that compared Nepal's legal provisions with those recommended by the World Commission on Dams (WCD). The study showed that in theory Nepal's legal provisions reflect the spirit of WCD recommendations and that in some cases; the country's provisions are more developed than what the WCD recommends. A second round of dialogue further analysed gaining public acceptance, conducting a comprehensive option assessment, recognising entitlement and sharing benefit and ensuring compliance.<sup>30</sup>
- The sixth and final characteristic of this shift is the providing of a share of royalties from hydroelectric plant to district development committees (DDC). In 2001, HMG began disbursing the royalties it obtained from hydropower projects to the DDC that housed the project. (Initially it handed over 10 per cent; later the amount was increased to 50 per cent by ministerial decision.) The 2001 policy on hydropower also suggests that "one per cent of the royalty obtained by government from a hydropower project shall be provided to the village development committees (VDCs) that are directly affected by the hydropower infrastructure with the sole purpose of expanding electrification in the VDCs."<sup>31</sup>

The liberalised political environment established after the 1990 democratic movement opened space for contestation and for the presentation of alternative ideas. As debates over dams emerged, alternatives were sought and a pluralistic approach to the generation, management and distribution of electricity was charted out. The outcomes were new policies that fostered community electricity distribution as well as the participation of the local private sector with the state serving as facilitator. As a result of these changes, in less than a decade about 300 MW additional of hydropower was generated. In addition, royalties from hydropower generation began to flow from the centre to districts and in some cases, from districts to VDCs.

At that point in time, the terrain of hydropower policy-making incorporated sufficient diversity to be able to persist in the face of change, to spread risk and to address the complex issues of social-political changes. This terrain is an example of clumsy institution in which none of voices were silenced and captured the idea that "hydropower development would aim to provide its people with cheap and reliable source of hydro energy, fast with projects spread across different regions of the country. Such an approach would enable a strong domestic energy base to emerge."<sup>32</sup>

### **Unitary vs. pluralistic institution**

From 1911 when Nepal's first hydropower plant was built in Pharping, till the early 1990s, Nepal's approach to hydropower development has been led by the government, dependent on foreign-aid, and managed by state agencies. This approach was seriously flawed: it was slow, pushed Nepal onto a high-cost energy path, did not build local capacity, and was poorly linked to local economies. The movement onto the clumsier or more pluralistic path began to be charted when liberal democracy was introduced in 1990. Different perspectives about technological choices found space in the

---

<sup>30</sup> Within its framework the World Commission on Dams had proposed seven strategic priorities that aimed to provide a principled way forward towards negotiated decision-making about selection, construction and management of a dam and its alternative. The other three strategic priorities are a) addressing existing dams, b) sustaining rivers and livelihoods, and c) sharing rivers for peace, development and security. For a summary see Dixit (2007).

<sup>31</sup> This provision relates to the 1% revenue for rural electrification and was mentioned in the Finance minister's budget speech of 1993/1994 and 1994/1995 Upadhaya (2005). The policy further proposes that, "A Rural Electrification Fund shall be established for the development of micro hydropower and rural electrification by pooling in a certain percentage of the amount received as royalty." This provision, however, remains unimplemented.

<sup>32</sup> Gyawali (2003) has proposed that hydropower development in Nepal must be cheap, fast, reliable, regionally balanced and with a strong domestic base.

political sphere and a shift in policy emerged. This shift produced social benefits: generating capacity was increased and a procedure for sharing benefits with locals incorporated.

In the post 2006 political milieu, however, Nepal faces a contradiction: although there is a serious deficit in internal power supply, the government is pursuing a strategy of power export. This shift is a result of Nepal's power-export political economy and the policy vacuum, which arose after 2001 when the country's politics took a nasty swing downwards from the bloody palace massacre to the peaking of Maoist violence followed by a constitutional crisis and King Gyanendra's taking over power in February 1, 2005. The convoluted political trajectory took another swing with the initiation of the people's movement of 2006, the restoration of the parliament, the Maoist's signing the peace accord with the then government led by Girija Prasad Koirala, and the election to the Constituent Assembly and finally to the abolition of Nepal's monarchy, the formation of a new government and the political violence in Nepal's Tarai. The new Nepali government led by the former rebels announced that in a ten year period Nepal would generate 10,000 MW.

The announcement marked a reversal: the policy terrain has once again started its mono centric assertion that hydropower export should be order of the day.<sup>33</sup> In other words, Nepal's hydropower terrain is sliding towards a closed hegemony as opposed to pluralistic democracy. Once again one idea dominates and all other voices are being ignored.

### **Inconclusive conclusion**

For a brief period from 1996 to 2002, a pluralistic policy terrain did provide social benefits from hydropower development though politically Nepal did not do well. These social benefits can be attributed to the presence of differing definitions of the problem and its solutions. Mixing alternative institutional forms and policies kept the policy process dynamic. It was a tremendous improvement in the previously government-dominated approach. Yet subsequently there has been a policy hiatus in the form of massive power outage and hegemonic pursuit of an export paradigm. It is beyond the scope of this paper to lay out the actual reasons for the current impasse in hydropower sector, which is manifested most conspicuously by the ongoing electricity supply outage.

The belief that exporting power is the best strategy for achieving prosperity though contested by a small group of academics and social activists nonetheless continues to dominate. The government, Nepal's educated elite and political leaders need to pay attention to the basic principle that energy input is fundamental to production processes and that only when it is used prudently will the country move on a self-reliant development path. Exporting hydroelectricity will only perpetuate the status quo, marginalise the broad role of water in maintaining the health of ecosystems and social welfare, while reinforcing its semi-colonial political economy.

Without access to reliable sources of cheap energy from hydropower projects with low social and environmental costs including renewable energy sources such as solar, wind and biogas, the much needed social and economic progress will remain elusive. Any financial gains to the government from the export of hydroelectricity will hardly count as economic development despite current political claims to the contrary. What is needed is a paradigm shift, from unitary hegemonic state-market centrism to a pluralistic terrain, not only of hydropower generation but for water development and management. This shift will be possible and can produce desirable outcome only when Nepal's political space allows room for the competitive market, the state and the activist groups to be constructively engaged in the policy process.

---

<sup>33</sup> Ney (2006) provides a tool to evaluate if the policy space is closed hegemonic or reflects the creativity if clumsy institution where all voices are heard and engaged in dialogue.

## Post Script

The saga of hydropower export from Nepal will not be complete without the inclusion of a few recent events that veer towards the comical rather than appropriate conduct of statecraft. On 14th December, 2008 Nepal's Prime Minister Puspa Kamal Dahal inaugurated the 70-MW Middle Marshyangdi hydropower project. Four days after this event the daily supply outage duration increased to 63 hours a week from the 42 hours. This increase reflects a profound crisis in the country's energy planning as the outage should have decreased.

On the 13<sup>th</sup> of December, one day before the inauguration, the government had announced plans to construct 200 MW decentralized thermal power plants close to load centres to overcome the shortage. The very next day, officials of NEA, which is chaired by Nepal's Minister of Water Resources, termed the decision of installing thermal plants a 'disaster', and charged the government of not doing its home work. According to these officials, "[T]he thermal plant, is not viable both financially and physically". On the same day, while speaking in a programme organised by Confederation of Nepalese Industries the Prime Minister hinted that the outage would reach 18 hours a day in March/April (or 126 hours a week). He went on to say that even if 200 MW of thermal generations were installed, daily outage of 5 to 6 hours would continue. Without electricity, he admitted that it would not be possible to draft the new constitution.

Next day on 14 December 2008 the head line of *The Himalayan Times* said, "Tehri-like project likely for Nepal". A photograph of Nepali Prime Minister being received by the chief of India's Tehri Hydro Development Corporation accompanied the article. The Prime Minister had visited the Tehri Project after his official trip to New Delhi during 11-12 November, 2008. A few days later *Nepali Samachar Patra* revealed that the government was all set to take immediate decisions on large projects such as Pancheswor, Karnali Chisapani, West Seti, the Kosi high dam and the Naumure hydropower project.<sup>34</sup> Because hydroelectricity from these large-scale dams, except that from Naumure, is designed to supply power to the Indian grid, not a single energy unit will be available to Nepal.

The advent of Nepal's democracy in 1990 saw some creative policy changes in the water and hydropower sector that brought societal benefits. This window has not lasted, however. As the world's newest republic moves to institutionalize itself, the narrative of the illusive electricity-export led prosperity and policy ad-hocism, rather than the very real needs of its citizens, has begun to guide the conduct of the State. This narrative flies in the face of current Nepali reality where even reliable electricity supply to those Nepali fortunate enough to be connected to National grid, remains elusive. That the majority of the country's citizens still remain without access to basic electricity services suggests much deeper contradictions.

---

<sup>34</sup> *Nepal Samacharpatra* quoting the Prime Minister's office revealed that the government will declare national electricity emergency shortly, and that the cabinet will approve the work plan submitted by the water resources minister. The work plan included, government providing subsidy to establish thermal plant, revoking of permission from Department of Forest to build a hydropower plant, immediately take up projects like Burhi Gandaki, Upper Seti Reservoir including Pancheswor, Kosi High Dam and Naumure. See Babu Ram Khadga (2008) *Nepal Samacharpatra*, December 23, 2008. Pancheswor, Karnali Chisapani, Kosi High Dam are large scale water projects included in the communiqué issued after the visit of the Prime Minister Girija Prasad Koirala to New Delhi in 1991. Snowy Mountain Energy Corporation (SMEC) holds the license of the proposed West Seti Project since 1994 but faces major social, environmental and political challenges. Conceived as a multipurpose project, Naumure has been defined as a hydropower project during Prime Minister Dahal's visit to New Delhi in September 2008.



## References

Ahmed, I. 2002. Higher Education on Water Resources: The Case of Bangladesh, in Higher Education on Water Resources in South Asia: Towards Capacity Building for IWRM, SasiWATERs, Hyderabad, India.

Bhattarai L. 2006. *Diversified Modes of Hydropower Development in Nepal*, unpublished M. Sc. Thesis, submitted to Institute of Engineering Nepal.

Bissell, R. E., 2003. *The Arun III Hydroelectric Project, Nepal*, in *Demanding Accountability: Civil Society Claims and the World Bank Inspection Panel*, Dana Clark, Jonathan Fox and Kay Treakle, (Eds) pp. 25-44, New Delhi, India : Rainbow Publishers LTD.

Dixit, 2007: *Continuing Reasoned Public Debate On Dams and Development*, Nepal Water Conservation and IUNC Nepal.

Dixit, A. 2001. Re-imagining Water and Dams, *Water Nepal*, Vol. 6, No.1/2, pp. 5-12, March 2000-June 2001, Nepal Water Conservation Foundation, Kathmandu.

Dixit, A. 1997: *Inter-Sectoral Water Allocation: A Case Study in Upper Bagmati Basin; Water Rights, Conflict and Policy*; Proceeding of a Workshop held in Kathmandu, Nepal, January 22-24, 1996, Pradhan, R.; Benda-Beckmann, F. Von; Benda-Beckman, K.von; Spiertz, H. L. J; Khadka, S. S. and Azharul Haq, K. (Eds), International Irrigation Management Institute (IIMI), Legal Research and Development Forum (FREEDEAL), Department of Agrarian Law (WAU) and the Sanders Institute (EUR), Kathmandu.

Dixit, A. and Basnet, S. 2006. *Water Resources Cooperation: Moving away from hierarchy led contention to pluralized resilience*. In Shiva K. Dhungana (Ed.) *The Maoist Insurgency and Nepal-India Relations*.

Dixit, A, Adhikari ,P. and Thapa,R.R. 2004. "Nepal: Ground Realities for Himalayan Water Management". In *Disputes over the Ganga : a Look at Potential Water-Related Conflicts in South-Asia*, pp. 158-191, Kathmandu : Panos Institute South Asia (PSA),

Douglas, M. 1985. *Risk and Acceptability According to the Social Sciences*, Keegan Paul, London,UK: Routledge

Douglas, M. 1999. Four Cultures: the evolution of Parsimonious model, *JeoJournal*, Vol. 47, No 3.

Douglas, M. and A. B. Wildavsky. 1982. *Risk and culture: an essay on the selection of technical and environmental dangers*, Berkeley. University of California Press.

Escobar, A. 1995. *Encountering Development Making and Unmaking Third World*, Princeton University Press.

Gyawali, D. and Dixit, A. 1999. Mahakali Impasse and Indo-Nepal Water Conflict, *Economic and Political Weekly*, Vol. xxxiv, No. 9, February 27-March 5, Kathmandu.

Gyawali, D. 2003. *Rivers Technology and Society: Learning the lessons from Water management in Nepal*, London, UK: Zed Books

Gyawali D. and Dixit A. 1999. Fractured Institutions and Physical Interdependence Challenges to Local Water Management in the Tinau River Basin, Nepal. In Moench, M. Caspari, E. and Dixit A (Eds) *Rethinking the Mosaic Investigations into Local Water Management*. Nepal Water Conservation Foundation and Institute for Social and Environmental Transition. Boulder, California



Khagaram, S, 2004. *Dams and Development: Trans-national Struggles for Water and Power*, Cornell University Press.

Koirala, S. P. 2008. *Water Resources Development: A Working Paper for the Donor Consultation Meeting (Draft)*, Ministry of Water Resources, Kathmandu, Nepal.

Moench, M., Dixit, A.; Janakarajan, S.; Rathore, M. S. and Mudrakartha, S. (Eds) 2003. *The Fluid Mosaic, Water Governance in the Context of Variability, Uncertainty and Change, A Synthesis Paper*, March, Nepal Water Conservation Foundation, Kathmandu, The Institute for Social and Environmental Transition, Boulder, Colorado, USA.

NEA, 2004. Nepal Electricity Authority, Fiscal Year 2002/03 - *A Year in Review*, August, Kathmandu.

NEA, 2008. Nepal Electricity Authority, Fiscal Year 2007/08 - *A Year in Review*, August, Kathmandu.

Ney, S. 2006. *Messy Issues, Policy Conflict and the Differentiated Polity: Analysing Contemporary Policy Responses to Complex, Uncertain and Transversal Policy Problems*, Dissertation for Dr. rer. polit, University of Bergen.

Pandey B. 1994. *Small Rather than Big: Case for Decentralised Power Development*, in *Water Nepal* Vol. 4, No 1, pp 313-344, Nepal Water Conservation Foundation, Kathmandu.

Schwartz, M. and Thompson, M. 1990. *Divided We Stand: Redefining Politics, Technology and Social Choice*, London, UK : Harvester Wheatsheaf

Thompson, M. 1995. *Policy-Making in The Face of Uncertainty: The Himalayas as Unknowns*. In Chapman, G. P. and Thompson, M. (Eds) *Water and the Quest for Sustainable Development in the Ganges Valley*, USA: Mansell Publishing Ltd.

Upadhyaya, S. 2005. *Benefit Sharing from Hydropower Projects in Nepal*, Working Paper 6, Winrock International, Kathmandu.

Verghese B G. 1970. *Water of Hope*, *Hindustan Times*, India.

Verweij et al., 2006. *The Case for Clumsiness*. In Verweij M. and Thompson M. (Eds) *Clumsy Solutions for a Complex World: Governance, Politics and Plural Perceptions*, pp. 1-31. Basingstoke. Palgrave Macmillan

WCD. 2000. *Dams and Development: A New Framework for Decision-Making*, Earthscan Publications.

Worster, D. 1985. *Rivers of Empire: Aridity and Growth of the American West*. New York, USA: Oxford University Press