

Regional Sacrifice in National Interest – The Cusecs Paradigm – Himachal’s Tryst with Hydro Generation (1948 to 1971)

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Anurita Saxena

Associate Professor,
Dept. of History,
RKMV, Shimla,
Himanchal Pradesh, India

Abstract

Himachal was always a part of India's 'colonial legacy of pursuit of hydraulic capitalism through the large dam' in the newly independent nation. (D'Souza, 2008: 113). From 1947 to 1971 Himachal was converted into a 'reservoir state' to store cusecs to irrigate lands in other states. This was the 'cusec paradigm' in the planning of water sources of Himachal by the Central Government. Bhakra (1964) and Pong (1974) were constructed as impoundment dams primarily to store water for irrigation and generate electricity. Himachal became a double victim due to central policies where Himachal was given the sacrificial role but without the benefit of either the water or the power accruing from these projects. The state more or less served as a backhand management arena for the irrigation policies of the central government. The 'cusec paradigm' in Himachal got gradually linked to ecological changes and the sufferings of the people due to the R & R issues related to submergence and displacement. It was also a time when the state was negotiating from a position of weakness while dealing with the central government. The state still had to attain full statehood and was totally dependent on finances from the central government. It was perceived by the planners as an era of regional sacrifice for national policies.

Keywords: Hydro, Cusecs, Reservoir, Megawatts, Oustees.

Introduction

In India immediately after independence, the policy makers were more or less influenced by the British thought process on natural resource management for development – maximum economic gain. This was perhaps so, because as Bandyopadhyay and Shiva observe, "There was unfortunately no other possible institutional mechanism than those of the classical model left by the British."¹⁰ The processes that resulted in deprivation were now entrusted with the responsibility of 'basic need-satisfaction'. The thinking was reflected, as pointed by Rohan D'Souza, in the very First Five Year Plan where it was noted that "co-existence, in greater or less degree, of unutilized or underutilized manpower on one hand and of unexploited natural resources on the other."¹¹ The need, it seems, was to propel the nation towards 'development' with the help of 'conquering or controlling' environment by means of technology to utilize its resources. The process was undertaken through ambitious plans of irrigation and energy generation with the help of large impoundment dams, forest exploitation, mining, energy intensive agriculture, etc.

The waters of Himachal, since time immemorial, could flow unhindered, without much interventions, and without much value – in economic terms- attached to it either by local rajas or the British, mainly because of the region's topography and inaccessibility.¹² A paradigm shift, however, came with the planning, and finally with the construction of Bhakra in 1964 followed by Beas dam in Himachal. This was the postcolonial period when, as Rohan D'Souza says, "development of rivers" seemed to have charged decolonizing nations with a new technological mission: the giant quest to transform fluvial powers into national assets—hydroelectricity, navigation, irrigation, and flood control."¹³ Historically, as Rohan D'Souza has very aptly summarized that water management in India can easily be divided into three overlapping phases:¹⁴ from water tapping and conservation through traditional water harvesting systems

in the pre-colonial times to a phase of canal irrigation during the British rule. This phase "made possible a dramatic hike in cropping intensities, fuelled the growth of commercial farming and encouraged the spread of mono-cropping."¹⁵ But along this also came water logging, salinisation and destruction of traditional harvesting systems, putting a big question mark over the ecological soundness of the extensive canal irrigation system. However, during 1930's a third phase in water management emerged which was chiefly developed and pioneered in the US. New technologies were harnessed to bring about a total control over the rivers, and it was termed Multi-Purpose River Valley Development (MPRVD). Colonial irrigation policy in India also successfully advocated that the state in partnership with science can tame the rivers for improving the human welfare. This ideology survived until the end of the Empire and began dominating the water management vision in the postcolonial Independent India.¹⁶ As Sanjib Baruah observes that these were the times when globally the, "states were seeking to defend society against markets, and markets were regulated to promote the general welfare."¹⁷ Water became 'cusecs' and when stored behind the dams generated electricity in the newly independent nation, and the resources generated were used for irrigation, navigation and flood control.

At the time of independence, there were two theories regarding what path should be chosen for India's future development: the Gandhian project of reviving the village economy for overall development of the nation or the Nehruvian plan of achieving prosperity through rapid industrialization.¹⁸ But that was the time when most of the Indian planners believed that India's growth could only take place if it followed the path of rapid industrialization with the help of modern sciences.¹⁹ And what more could be better than the large scale Multi-purpose-river-valley projects which will produce electricity, generate employment, improve water supply and provide food security. They came to be seen as a solution to multiple problems, and above all, as a symbol of progress, self-reliance and national pride.

Himachal as a state became involved in the newfound drive of dam building because of its river system. These fluvial resources with their steep drops were ideal for tapping hydro-electric potential. All the major tributaries of Indus pass through Himachal; hence, it became a place to house the major impoundment dams to store water for irrigation in the national interest. The partition and its resultant legacy expedited the drive. The spirit was of nation building with the help of public sector. But it also became the politics of regional sacrifice and a political game of resettlement and compensation. Himachal had to bear the brunt of pondage and displacement.

This paper shall outline the factors that were instrumental in shaping the course of water resource management on the Indian side of the Indus Basin after independence, especially in Himachal. It shall describe how waters of Himachal came to be viewed only as cusecs to irrigate the lands in the semi arid flood plains in other states. The paper shall also

analyze how this cusecs paradigm impacted the state - especially in its future planning of water as a resource. A time frame of 1947 to 1971 - from independence to Himachal attaining full statehood - has been taken to trace the journey of hydro. The paper is further divided into three sections: first, where the circumstances leading to the framing of water management policy in Himachal by the central government are analysed; second, is describing how the state of Himachal took its own initiative in developing hydro-power at the state level for its own consumption; and third, where the impacts of these MRPV's on Himachal are being assessed.

Aim of the Study

The aim of the paper is to outline the factors that were instrumental in shaping the course of water resource management on the Indian side of the Indus Basin after independence, especially in Himachal. It shall also describe how waters of Himachal came to be viewed as cusecs to irrigate the lands in the semi arid flood plains in other states. The paper shall also analyze how this cusecs paradigm impacted the state - especially in its future planning of water as a resource.

Review of Literature

By the early 1990s, environmental advocacy matured enough to question the character and course of political development and generated a fresh wave of scholarship. Among the most influential historical work was Ram Guha's 'Unquiet Woods' which explained the roots of environmental movement 'Chipko'. He wrote later in 1992, 'This Fissured land' with M. Gadgil.¹ Earlier works by historians focused more on irrigation and flood control. (Whitcombe, Agrarian Conditions in Northern India, The United Provinces under the British Rule 1860-1900, 1972; Imran Ali The Punjab Under Imperialism, 1885-1947, 1988; Satyajit Singh, Taming the Rivers, 1997; Rohan D'Souza, Drowned and Damned, 2006).² Now the range of issues being examined is very wide. The focus now is more on traditional water rights, conservation, traditional practices of water harvesting and so on (Lyla Mehta, The politics and poetics of water, 2005; Amita Baviskar, In the Belly of the River, 1995, Brisco and Mallik India's Water Economy Bracing for a Turbulent Future, 2006, Patric MacCully's Silenced River, 1999, Arundhati Roy's, The Greater Common Goods, 1999).³

Many scholars focused on compensation and rehabilitation. (E.G. Thakral ed. Big Dams, Displaced People: Rivers of Sorrow, Rivers of Change, 1992; Satyajit Singh and Jean Dreze edited Dam and the Nation, 1997; Ranjit Dwivedi, Conflict and Collective Action: The Sardar Sarovar Project in India, 2005).⁴ Some scholars have focused on specific technical aspects. Recently scholars have added new dimensions as well and focused on wider issues of development, requirement of energy and so on. So a large literature has emerged on dams. (Sanjeev Khagram, Dams and Development: Transitional Struggles for Water and Power, 2004; World Commission Dams, Dams and Development, 2000; Asian Development Bank's Dams and Water, 2006).⁵

The emphasis also went on water rights and conflicts, and how best to find a solution to water scarcity and energy crises, for example, Vandana Shiva, *Water Wars: Privatization, Pollution and Profits*, 2002.⁶ Ramaswamy Iyer in *Water-Perspective, Issues, Concerns*, 2003 says that the need of the time is to meet the water and energy needs of a society in a cost effective, equitable, environment-friendly, socially acceptable and timely manner.

Literature available on hydro-projects and their impact on water sources of Himachal Pradesh is very limited. After independence, Himachal was one of the most preferred states for the planners to build dams. Hence, there has been some scholarly attention on the Satluj Basin because of Bhakra Nangal Project. Dharmadhikari and Rangachari evaluated the famous project on all its dimensions. Shripad Dharmadhikary in his study *Unraveling Bhakra: Assessing the temple of Resurgent India*, 2005 has underlined Bhakra in fulfilling its promises.⁷ R. Rangachari in his book *Bhakra-Nangal Project: Socio-Economic and Environmental Impacts*, 2006 praises Bhakra for fulfilling promises it had made to the nation.⁸

Not much has been written about the impacts of dams on hills. However, Sanjib Baruah has analyzed the hydro power quest and drive of North Eastern states in his article, "Whose River Is It Anyway".⁹ Some environmental groups, especially Kalpavriksha and South Asian Network on Dams, Rivers and People (SANDRP), have also started to study the impacts of hydro drive and their impacts on the hill states.

Section 1: The Indus Basin

It was actually the suitability of the site that first sowed the seeds of the idea of building a dam, where Bhakra is today, in the mind of Sir Louis Dane, former Lieutenant Governor of Punjab in 1908.²⁰ As Dharmadhikary points out, "it is not clear as to whether this (proposal of Bhakra dam) was in response to any specific need, or was a part of the general progression of irrigation development in the valley."²¹ The irrigation in the Indus Basin since the early nineteenth century got controlled through various canal systems built by the British. With the passage of time, it also became apparent that artificial irrigation was well suited for the topography of the area; hence the British intensified their efforts in canal irrigation.²² Starting from Upper Bari Doab Canal to Triple Canals –which linked the three rivers – the Jhelum, the Ravi and the Chenab, the irrigation system of Indus basin was considered one of the biggest achievements in the world. It was irrigating almost 26 million acres (10.5 million hectares) and that too without the construction of any storage reservoir.²³ The system was also one of the most extensive and complex one cutting across boundaries of provinces and States and was very tightly knit.

Though the proposal for Bhakra was mooted in 1908, it could not be finalized till independence. Dharmadhikary in his study *Unravelling Bhakra* has analyzed the reasons for delay in coming to a final decision regarding Bhakra Project. It seems that the

project was caught between the desire of two states – Sind and Punjab- over the sharing and domination for waters rather than the actual need for irrigation. It was also in competition with another proposed project – the Satluj Valley Project.²⁴ Before any final decision regarding the project could be taken, independence and the resultant partition sealed its fate.

The partition of Punjab simply split the irrigation system into two without taking into consideration the source and the use of waters. It is a well known fact that the irrigation system was not a very significant consideration in deciding the dividing line.²⁵ It was probably not possible also because of the paucity of time given to finalize the partition and complexity of irrigation canals. Out of the thirteen existing canal systems, ten went to Pakistan, two to India and one was partitioned half way. Out of 28 million acres under irrigation, only 5 million acres were left in India after partition.²⁶ Some of Punjab's most fertile land also went to Pakistan. Punjab was also to settle about 5 million²⁷ people displaced. Thus the need for more irrigated land and grains to feed the growing population melted away all the doubts the planners had regarding the height and envisaged benefits attached to the designs of Bhakra.²⁸ India being the upstream state was now in a position to control the Satluj river if desired. The project designs were modified and a much higher dam with a larger storage capacity was finalized. The project became the symbol of national pride and the host to the often quoted speech of the then Prime Minister Jawaharlal Nehru when he addressed the large dams as 'temples of Modern India'.

The Indus Water Treaty

Serious differences arose between the two newly independent states of India and Pakistan on the use of the waters of Indus and its tributaries, and their future sharing. The international boundary between India and West Pakistan divided the irrigation system in such a way that the headwork fell in India, while the canals in Pakistan. India could control the flow of water for most of the canals in Pakistan because it was an upstream nation and also had the freedom to divert the water for its own use if and when desired. The problem started on 1st April 1948 itself when Indian Punjab stopped the water supplies to Pakistan. Reasons were many and the issue got further complicated because of Kashmir problem where both the nations were trying to score against each other in the International arena.²⁹

As it became difficult for the two countries to arrive at a reasonable agreement an intervention of the World Bank was sought. The World Bank, with lot of help from the United States of America, took the initiative to resolve this issue. The first meeting of the representatives of the two countries was held in Washington in May 1952 followed by a series of meetings and proposal. The dispute was finally settled with the signing of the Indus Water Treaty in Karachi on 19th September, 1960. The important provisions were: it was decided that the entire flow of the western rivers - the Indus, Jhelum and Chenab- would go to Pakistan and the entire flow of eastern rivers -the Ravi, Beas and Sutlej- would be availed by

India. There was to be a transition period of ten years – upto 31st march 1970- when India was to release water from eastern rivers to Pakistan. It was done to allow Pakistan to create its own water infrastructure. India was to have limited access to western rivers of Indus basin for domestic, industrial and hydro power but no storage. India was also to pay a fixed amount of money towards the cost of replacement system in Pakistan as well. The Bank also offered help for the construction of a dam on the Beas.³⁰ Similar help was also offered to Pakistan.

Post-Independence Planning

As the waters of Satluj, Beas and Ravi became available for exclusive use to India, the government went on a drive to plan its proper storage and utilization. The idea was to plan the storage for all the available cusecs and transfer them to areas where more land could be brought under cultivation. After all India required large amount of food grains to feed its growing population. The first five year plan laid emphasis on the development of irrigation and energy; hence multi-purpose river valley projects. This was the cusec era when most of the policies revolved around increasing irrigation facilities. The state governments of Punjab, Rajasthan, Jammu and Kashmir, and Himachal Pradesh with the assistance of the Central Government started developing a plan for these three eastern rivers. A huge storage dam at Pong—to irrigate the lands of Haryana and Rajasthan—was proposed along with a Beas Satluj Link (BSL) project to partially meet the water shortages in Bhakra system and to maximize the utilization of Beas waters. It was also decided to connect the river Ravi to the Beas through a link called the Madhopur-Beas link as the water of the river Ravi was in surplus to the requirement of canal offsetting from Madhopur. Some storage dams on Ravi and Beas were also proposed.³¹ Water sharing agreements were also signed between Punjab, Haryana, Rajasthan, Jammu and Kashmir, and Himachal.

It is important to note here that Himachal was still a part C state at this juncture and hardly had any say in the planning, either for the construction of dams or for the sharing of power and water. As there were limited irrigational needs of Himachal, the water allocation was for the neighboring states who were sharing the cost. The sharing of power was also based on the proportion of cost sharing of all these three projects. Himachal being a union territory was not asked to share the cost, and hence not accorded any share in the hydro-power produced. By an agreement executed on 13th January 1959, Punjab and Rajasthan agreed to fund and derive benefits from the Bhakra-Nangal Project in the ratio of 84.78% and 15.22%, respectively. After the reorganization of Punjab in 1966, the representatives of the successor States/Union Territories, namely, Punjab, Haryana, Chandigarh and Himachal Pradesh agreed at a meeting held on 17th April 1967 in presence of the Secretary, Ministry of Irrigation and Power, Government of India that the share of power of the four States/Union Territories out of the two projects, Bhakra and Pong, would be as follows: Punjab –

54.5%; Haryana – 39.5%; Chandigarh – 3.5%; Himachal Pradesh – 2.5%. Hence, Himachal was given the adhoc 2.5% share in the Bhakra Nangal system, 15 MW out of 990 MW (about 1.5%) in BSL and no share out of the Pong Dam.³²

Three major projects to be housed in Himachal were as follows: Bhakra Project, Beas Project I- BSL project and Beas project II – the Pong Dam. All three were managed by Bhakra Beas Management Board (BBMB) and put together have a capacity to generate 2680 MW electricity and can store upto 14600 million cum water for irrigation and drinking purposes. A little detail of all the three projects is required to understand many issues later.

Bhakra Dam 1964

Bhakra Dam was proposed as a concrete gravity dam across the Sutlej River, near the border between Punjab and Himachal Pradesh in northern India. The dam is located at a gorge near the upstream Bhakra village³³ in Bilaspur district of Himachal Pradesh. It was to be India's tallest dam at 225.55 m (740 ft) height.³⁴ Its reservoir, known as the 'Gobind Sagar', stores up to 9.34 billion cubic meters of water and is 90 km long. It is spread over an area of 168.35 km². In terms of storage of water, it withholds the second largest reservoir in India, the first being Indira Sagar Dam in Madhya Pradesh with capacity of 12.22 billion cu m. There are two power houses which have the generating capacity of 785MW and 540 MW respectively. The Bhakra dam submerged about 178.75 sq km (17875 ha) of land area.³⁵ The entire township of erstwhile Bilaspur state got submerged in the reservoir and a new township was created on the hills above the reservoir.

Pong Dam - Beas Project Unit II, 1974

The Beas Dam is located at Pong. Pong is a tiny hamlet on the right bank of the river Beas in Kangra District, which was a part of Punjab state till 1966. On the creation of Himachal Pradesh in 1966, it became a part of the new state. The Unit II, called Beas Dam at Pong, is the main storage project on the Beas for meeting primarily the irrigation requirements, but it also produces some power. Pong Dam was completed in 1974. Initially planned as an irrigation project, a power plant was provided for in the final scheme in view of the increasing demand for power. A total of 28271.33 hectare of land got submerged in the Pong reservoir uprooting around 16,000 families.³⁶

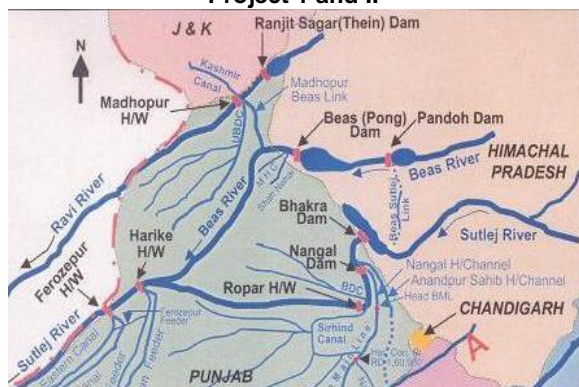
Four units each of 60 M.W. were installed at the Pong Power plant with an additional provision for the installation of two more units of same capacity at a later stage. The water from the Pong reservoir was to go to the Indira Gandhi Canal, which is 649 km long. The canal was to run through the areas of Hanumanghar, Ganganagar, Raisinghnagar, Gharsana, Bikaner, Anoopghar, Suratghar, Nachna and Jaiselmer in Rajasthan. This water was expected to irrigate 1,673 million acres of land in Punjab and 3.51 million acres land in Rajasthan.

The Beas-Satluj Link Project 1978

The Beas-Sutlej link (BSL) Project was basically designed as a power project. This project was planned to fully utilize the waters of the Beas so

as to relieve the power shortage, which existed even after the completion of Bhakra dam. This was to provide flexibility to BBMB authorities in case water from the Sutlej fell short of desirable level.³⁷ It envisages diversion of Beas waters into the Sutlej, falling through the elevation difference of about 320 meters. The water is further utilized to augment power at Bhakra (by 148 MW). The tunnel was considered an outstanding achievement considering the complex geological conditions existing in the lower Himalayan range.

Figure 3.1 The General Layout Of The Beas Project 1 and II



Source: Bhakra Beas Projects, A booklet published by the BBMB, Chandigarh, 1989.

The BSL project is a joint venture of three states, i.e., Punjab, Haryana and Rajasthan, and the power generated is shared in the ratio 48:32:20, respectively. This project consists of several components. The first component is the Pandoh dam, which is a diversion dam on the Beas at Pandoh and diverts 3.82 MAF of the Beas waters annually into the Sutlej. The second component is the tunnel. The water from here is carried through a 13.1 km long tunnel known as Pandoh-Baggi Tunnel (PBT), which opens up at Baggi. From Baggi, 11.8 km long open channel takes the water to the open reservoir in Sundernagar, and is known as Sundernagar Hydrel Channel. The third component is the Balancing Reservoir at Sundernagar. It has a live storage capacity of 370 hectare meters (3000 Acre feet) and was constructed to provide diurnal storage to take care of the variation between the supply and actual water demand of Dehar Power Plant. The fourth component is again a tunnel from this reservoir which takes water to the Dehar power plant. This is known as Sundernagar Sutluj Tunnel and is 12.38 km long. The last component of this project is the Dehar Power plant with an installed capacity of 990 MW and comprises six unit of 165 MW each. The water finally falls into the Sutlej.

Section II: The State's own Initiative towards hydro-power development

With independence the waters in Himachal came to be viewed as a resource to generate resource for the state exchequer. There was a definite break from the pre-colonial and colonial times when the waters of Himachal were not viewed as commodity. The need for energy coupled with central government's ambitious plans to harness the waters

of the rivers for the growth of the nation infused the planners in Himachal with hope – hope to generate resources for their own state. Water came to be regarded as 'gold flowing in the rivers to be converted into money.' The looming question however was how to manage it. The central government had its own agenda in building MPRV projects with no thought towards creating any resource base for Himachal. It also did not form a part of any water or power sharing proposals. Despite having big projects like Bhakra and Shanon, Himachal had to buy electricity from the center, and that too at market rates. There was no share for the state in the electricity produced within its boundaries, though this question was raised time and again in the Vidhan Sabha to seek the rightful share of Himachal in these center-owned projects. The concept of royalty was still premature, though the first demand was made in 1967 in case of Bhakra dam.³⁸ Nor was there any separate department, which could supervise the planning and execution of hydro potential. Electricity Section was only a branch attached to the Public Works Department.

It was only in early 1964, when Dr. K.L. Rao, Union Minister for Irrigation and Power, visited Himachal that the idea of exploiting its own hydro potential got a boost. Dr. Rao assured all possible help for the exploitation of its electricity potential. According to him, a single project on the Sutlej, with a generation capacity of 600-1600 MW can generate Rs. 18 to 48 crores for the state. Hence, the Department of multipurpose projects envisaged construction of six dams on the Sutlej above Bhakra with a generating capacity of 2200 MW of power yielding yearly revenues of Rs. 66 crores.³⁹ In fact, Dr Rao was quoted in the Vidhan Sabha, "In one of his speeches he said that while today we are only prospecting and proposing to construct dams, when our electric power has been generated, then our psychology would be that of a capitalist or of a rich man".⁴⁰ The matter was well debated in the Vidhan Sabha⁴¹ and with general consensus a Department of Multipurpose Projects and Power (DMPP) was established in 1964 for facilitating hydropower development, assessment of the real potential of the river basins, and also to extend irrigation facilities where feasible.⁴² In order to harness its hydro potential, Himachal was open to the idea of taking help from external agencies.⁴³ One Mr. Y. K Murti from Central Water and Power commission was invited to head the department. He was to use his expertise to identify and boost the harnessing of the said power potential of the state. The foremost responsibility was to identify the potential sites. The exploitation of other rivers – the Chenab, Ravi, Beas, Yamuna and their tributaries – in short held the prospects of a gold mine of hydro power generation with its inexhaustible resources. The first report on the power potential of the state was prepared in 1964 where the potential was assessed at almost 9000 MW.

After reorganization of the erstwhile Punjab, some new areas were merged with Himachal. Despite many members of the commission favoring its merger with Punjab, this dream became a reality

mainly because of the chairperson of the Commission, Mr. Fazl Ali, who argued, 'In the small states, the administration will be more accessible to people and there will be a livelier sense of local needs.'⁴⁴ The faith reposed by Mr. Ali in Himachal's potential proved to be true, and now it is one of the leading states in India in terms of all parameters of development.

This was preparatory time. Though finances were a constraint, yet the state, under its DMPP, successfully completed the two projects, namely, Giri (60 MW) and Bassi (60 MW). The assessment work for various rivers had started, and a few mini projects were on the verge of completion. Bhakra was operational; work for Pong had started with Beas Sutlej Link project (BSL) ready to start in near future in the central sector.

Section III: Unsettling of the Cusec Paradigm

From 1947 to 1971, the state was a mere playground for the game of water development being played by the central government. These projects did generate national pride but also impounded thousands of hectares of agricultural land, changed topography, brought ecological problems in their wake, problems of oustees and resettlement, without economic benefits of any kind. The oustees of Bhakra and Pong were asked to settle in Punjab and Rajasthan. Economically also, it was given just fringe benefits and no say in the management. Such policies had to have their repercussions.

Social Tensions - The Problems of the Ousteers

While dedicating the Bhakra Nangal project to the nation on 22nd October 1963, Pandit Jawaharlal Nehru said, 'This Dam has been built up with the unrelenting toil of the man for the benefit of mankind and therefore worthy of worship'.⁴⁵ While appreciating the workers, he was also saluting the sacrifices made by the people of Himachal whose fertile land and homes had been submerged for irrigating the barren lands of Punjab and Haryana. A total of 17,984 ha land was acquired along with a complete township of Bilaspur affecting some 7209 families. No protests were made, no agitations, the oustees were remarkably cooperative and accommodating at every step of the rehabilitation process, though suffering enormous hardships.⁴⁶ This was because the mood in the country was that of celebrating nationalist sentiments. No sacrifice was enough for the dream project of the first prime minister of the nation. Dharmadhikary writes, 'Even while pointing some of the serious problems with the policy and implementation, the oustees repeatedly told us that this was the first dam in the country, and the government did not have any experience in this field. So the oustees told us how could it be expected to have an ideal resettlement plan? The government was learning, they said, and the oustees willingly gave it the benefit of this.'⁴⁷

It was a time when national leaders and policy-makers typically viewed these hardships as legitimate and inevitable costs of development, acceptable in the larger national interest. Nehru, while laying the foundationstone for India's first major river valley project, the Hirakud Dam in Orissa in

1948, said to the tens of thousands facing the grim prospect of displacement: 'If you have to suffer, you should do so in the interest of the country.'⁴⁸ The same sentiments were echoed 36 years later by Prime Minister Indira Gandhi in a letter to one of India's most respected social worker, Baba Amte. She wrote: 'I am most unhappy that development projects displace tribal people from their habitat, especially as project authorities do not always take care to properly rehabilitate the affected population. But sometimes there is no alternative and we have to go ahead in the larger interest...'⁴⁹ This larger interest theory was heavily propagated by the planners, and that is why during the planning of large multipurpose river projects, the social and the human costs were always undermined. In fact, a lot of coercion was involved in shifting people. 'We will request you to move from your houses after the dam comes up. If you move it will be good. Otherwise we shall release the waters and drown you all.'⁵⁰ These were the words of the then Finance minister Mr. Morarji Desai speaking to the people of Kangra who were being displaced by Pong dam. Unfortunately, his words did prove to be true. In 1974 the dam was suddenly filled up and many people lost if not their lives, then their homes and belongings.

The people of Himachal became a part of this 'sacrifice for nation' theory, but with the passage of time the feeling that the sacrifice was entirely one sided with minimal appreciation started to sink in. A total of 55696 hectare land was acquired - Bhakra (17,984); Pong (30,725) and BSL project (6,987). A total of 38,763 families (more than 2 lakh people) were affected and needed to be resettled.⁵¹ The government came up with the brilliant idea of providing land to these families in the command area - after all, the sacrifice was for Punjab, Haryana and Rajasthan - so these states should bear the burden of their resettlement as well. Hence they were made responsible for resettling the oustees by providing them irrigable land, water, road, schools, dispensaries and other allied infrastructure facilities in the command area. Such an agreement to resettle the oustees is often excellent in mathematical propositions for the cost-sharing of development projects, but in reality this is totally blind and cruel to the socio cultural concerns of the people. In case of Bhakra and Pong, it was decided that both land and cash compensation will be granted to the oustees. The land was to be allotted in the command area of Bhakra canal in Hissar district of Haryana to Bhakra oustees and for Pong oustees in many districts of Rajasthan. In this case of Pong dam, people of hills, who were used to the cold climate, were expected to settle in the hot, barren, and humid deserts bordering Pakistan. Not only the distance of the place of resettlement was great, but the climate, terrain, agricultural practices, culture and the total ambience were both unfamiliar and hostile.

But after a lapse of almost 50 years, compensation and rehabilitation packages proved to be inadequate and totally mismanaged. Both are still an ongoing process where compensation is still being paid and people are yet to be rehabilitated; whereas

the resettlement and compensation process of most of the other hydro-power projects in Himachal is complete. The faith reposed by the oustees in the government slowly started eroding as the years went by, and the oustees started realizing that it was not the inexperience that was responsible for the bad resettlement but the insensitiveness on the part of executing agencies. Majority of the families who opted for the option of settling in Hissar and Rajasthan were in for rude shocks of – climate, culture, inhospitable terrain, callous attitude of government officers and hostile behavior of the local people. Even the oustees who are economically well off in Hissar faced emotional trauma of social ignorance.⁵² The cash compensation was not very well handled, and some of it was gobbled up by the Sahukars (money-lenders) who were given this money for safe keeping.⁵³ Families who stayed back in Himachal were not in a better situation either.⁵⁴ The rehabilitation scheme was notified under Rule 8-A of the H.P. Nautor Rules, 1968⁵⁵ that provides for the framing of a separate scheme for the grant of land for resettlement and rehabilitation of persons displaced as a result of anything done for public purpose. The scheme was well intentioned but has partly failed in its objective. Many revenue officers feel that only the influential amongst the oustees harvested the gains of the schemes in the form of land grants and the benefit of the schemes never percolated to the other needy and poor oustees.⁵⁶

Emotional trauma of social ostracism was in store for oustees: be it in Himachal or in Rajasthan or Hissar, 'Bilaspuriyas', 'damu's' were some of the new titles for the oustees.⁵⁷ The cash compensation obviously was not very well handled as was the case in most of India at that time. The original inhabitants too perceive the oustees as people who encroached upon their lands (and because of which the prices rose sharply), jobs, opportunities and infrastructure. The area under pastures and forests has decreased due to the settlement of oustees as the pressure on natural resources increased.

As the problems of R&R started escalating, the planners in Himachal started realizing that some measures to safeguard the people, land and forests of the state were needed. Probably that is why when a storage reservoir was proposed for BSL project which would have submerged the fertile Balh valley, Himachal government opposed it.⁵⁸ Instead, ROR project with two small reservoirs was envisaged as it involved less submergence and little displacement. The planners also did not agree to oustees being settled in other states and that is why perhaps there is no pending case for resettlement in BSL project and the oustees are generally satisfied with whatever compensation they received at that time.

These issues actually made the planners sit up and start thinking about its people and land. As early as 1966, the chief minister Mr. Parmar openly stated in the Assembly Session, "There will be optimum utilization of the water resources for the benefit of Himachal Pradesh and the country. The height of the dams, will, inter-alia be decided taking into consideration the submergence of arable lands

as well as the rehabilitation problems.....The inhabitants of the valley particularly those on either side of the river Satluj, or any other river where any project might be started need not have any apprehensions about the settlement of the oustees as a result of any project being undertaken"⁵⁹

The Environmental Consequences

The social tensions were also accompanied by the environmental consequences along with the creation of new ecology in the state; the paper is briefly touching upon them. Both Bhakra and Pong created huge reservoirs – Govind Sagar and Maharana Pratap Sagar, respectively. Though it became an ideal place for commercial fisheries and touched the lives of many, yet they were accompanied by some unique ecological problems. Bilaspur town is now covered with thick fog in the winter due to such a big water body, and so is Sundernagar town. The people living in the periphery of the reservoirs also have to face the problems of swamps created by the silt in the drawdown areas. The diversion of Beas river by the BSL project has given birth to a unique silt problem in the Balh valley. The silt dredged from the balancing reservoir, when ejected into the local khads, spreads into adjoining agricultural fields, ruining the crops and reducing the fertility of the field. This silt has also ruined many natural water sources. The diversion of water of river Beas also renders the river dry in the Mandi town impacting its culture and heritage. The city which was famous for its ghats on the banks of the river and had the honour of being called 'Kashi of Himalayas' had to abandon most of its religious and cultural activities centered around these ghats since they are full of the silt dredged from the balancing reservoir at Sundernagar.

The diversion and damming of rivers have hampered the migratory run of the fishes for breeding, and in turn affected the riverine fisheries. Mahasheer has completely disappeared from these rivers. The silt discharge in the Balh valley has also destroyed the local fisheries in the khads. The locals have always complained to the Fisheries department regarding the loss of riverine fisheries.

Conclusion

From 1947 to 1971 Himachal was converted into a 'reservoir state' to store 'cusecs' to irrigate lands in other states. It became a double victim of central policies where Himachal was performing the sacrificial role with no benefit of either the water or power accruing from these projects. The state more or less served as a backhand management arena for the irrigation policies of the central government. The 'cusec paradigm' in Himachal got connected to ecological changes⁶⁰ and the sufferings of the people due to the R & R issues related to submergence and displacement. It was also a time when the state was negotiating from a position of weakness while dealing with the central government. The state still had to attain full statehood and was totally dependent on finances from the central government.

It was perceived by the planners as an era of regional sacrifice for central policies. The Shanan project (110 MW), though completely situated in

Himachal, was handed over to Punjab government after reorganization, and it remains so till date.⁶¹ Economically also instead of allowing 7.19 per cent share in the entire BBMB projects systems, it was given ad hoc 2.5% share in Bhakra Nangalsystem, 15 MW out of 990 MW (about 1.5%) in BSL and no share out of Pong Dam. The justification for such sharing was considered to be logical on the basis of cost sharing by other member states.⁶² The benefits obviously were to be reaped by the states that were investing. Himachal being a UT lost out on the cost sharing, a decision not in its hands.

The planner's perception started going through a perceptible change. The chief minister in 1964 Budget speech said, "We shall not allow any such projects which will take away our fertile agriculture land and displace our people."⁶³ The national interest theory slowly started dissipating. The central policies were blamed for loss of revenue and R&R problems. It is of extreme relevance to quote Dr.Y. S. Parmar, the then Chief Minister of Himachal Pradesh from an article which he authored in the "Commerce" issue of 15th August, 1970 in his article titled "Economic Potential of Himachal Pradesh."

"The hydel power projects, whether in Punjab or in Uttar Pradesh or elsewhere, have so far been financed from the Central exchequer by way of loans. Having the hydel potential, development of hydel projects depended on central assistance, this Pradesh should also be given an opportunity of benefiting from this assistance which it could not avail of so far due to various reasons. Moreover, the share from the projects, in which vast areas of its lands have been submerged, big dams erected and thousands of people uprooted, has to be determined and paid to the Pradesh. Nowhere in the history of the world has such one sided action been allowed where the other states have exploited the resources of a state without paying any share or royalty and made millions out of them without paying a single rupee to that government."

The emerging thought, now, was to make Himachal a beneficiary of the upcoming water projects. Now cusecs – turned into megawatts – had to be for the benefit of the state. The question of fair and just 'Royalty' also started to gain ground. But to convert 'cusecs' into 'megawatts', big investments were required, and Himachal from the very inception was a state with a huge cash crunch. Hence a revenue generating model was required to alleviate the state's financial difficulties.

Statehood (1971) accorded certain independence to the planners of Himachal and water being a state subject, hydro potential was now probably viewed with more hope.⁶⁴ A change in official perception now started becoming more apparent as the rhetoric of hydro being a precious resource started getting louder in official corridors. Unleashing the state's hydro-electric potential to its fullest possible capacity, however, increasingly boiled down to overcoming two major challenges: a) the immense financial requirements and b) the appropriateness of

the technology. The first got solved to a certain extent with the onset of economic liberalization in the 1990's,⁶⁵ which allowed private investment in the hydro sector. The interest of multilateral funding agencies helped the situation. The planners started with the process of allocating identified potential sites to State Sector, Central Sector, Joint Sector and Private Sector.

The answer to the second was, however, found in the form of a technology known as ROR approach. The technology, though not new to the state (in fact the first big hydro project, the Shanan Project (1932), in pre independent Himachal could be considered an ROR), was preferred after the economic liberalization of 90's to offset the drawbacks of impoundment dams. The technology was considered appropriate to be replicated on as many rivers and streams as feasible. How the state fared in its hydro journey with a new technology after 1990, however, is a topic of separate discussion. But before concluding it's important to state that at present Himachal out of its total potential of approximately 24000 MW has a generation capacity of 10596.27 MW under various government and private companies and 2351.29 MW under construction. The remaining potential sites are either allotted or underway.⁶⁶ The state has contributed largely towards hydro power targets of the nation and has also generated resources for itself.

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 20. Sir Dane was cruising down the Satluj on his return from Bilaspur state when he noticed the narrow gorge near Bhakra with high abutments on both banks, and it occurred to him that it was a very suitable site for a dam. As quoted in R. Rangachari's, *Bhakra-Nangal Project: Socio-Economic and Environmental Impacts*, OUP, Delhi, 2006, p. 19.
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 24. For Historical details of the planning of Bhakra Nangal project please refer to Dharmadhikary's *Unravelling Bhakra* pp 17 -25 and Rangachari's *Bhakra Nangal Praject*, pp. 15-23.
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 26. Rangachari, *Bhakra Nangal Praject*, p. 25.
 27. The displaced figures vary from 12 to 17 million people in the region. Punjab was to settle almost 5 million people.
 28. *Unravelling Bhakra*, pp 35-40 ; Rangachari, *Bhakra Nangal Praject*, p. 28.
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 32. These details are well recorded in the Petition filed in the Supreme Court by the Himachal Government to gain its rightful share in the BBMB projects. The state has started receiving its enhanced share in Bhakra-Nangal Power House from 29.29 MW to 84.23 MW, in Dehar Power House from 15 MW fixed to

- 56.83 MW and Pong Power House from nil to 11.77 MW from November 1, 2011.
33. Now submerged.
 34. The highest is the Tehri dam at 261m height.
 35. BBMB 2002b: 'status Note on Bhakra Oustees', This note gives the area submerged as 44153 acres – this is 178.75 sq km. Elsewhere in other documents, the reservoir area of Govind Sagar is given as 168.35 sq km. As quoted in *Unravelling Bhakra*, p. 193.
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 45. Quoted in Rangachari's *Bhakra Nangal Project*, p. 57.
 46. Shipad Dharmadhikary, 'Unravelling Bhakra', p. 212. Promises were made by local MPs and former ruling family but not fulfilled. Documented in an unpublished M.Phil dissertation by Vinay Kumar, 'Bhakra Bandh Ka Bilaspur Par Prabhav: Govindsagar Jheel Ka Arthik va Paryavarneeeya Adhyayan', Mhil Disseratation History Department, Himachal Pradesh University, 2007.
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 51. For further details of R&R programme of Bhakra refer to Rangachari, *Bhakra-NangalProject and Dharmadhikari, Unraveling Bhakra*.
 52. Dharmadhikary has noted in his study that the oustees were referred to as 'Bilaspuriyas' and not many marriage alliances were formed with the oustees. Similar was the case with the Pong Dam oustees in Rajasthan as well as in Himachal when they tried to settle at different areas of Kangra. Dharmadhikary, *Unraveling Bhakra*, p. 218.
 53. Most of these claims are rebuffed by Rangachari in his study. He is of the opinion that the rehabilitation package of Bhakra was a reasonably good one considering the time and age. Rangachari, *Bhakra- NangalProject*, pp. 62-66.
 54. The land allotted to the oustees or occupied by them is still not registered in their names. These new settlements lack in day to day facilities and at times face acute water shortages. One reason is because most of the natural water sources were submerged in the reservoir. Dharmadhikary, *Unraveling Bhakra*, p. 218.
 55. Nautor land means the right to utilize with the sanction of the competent authority, waste land owned by the government, outside the towns, outside the reserved and demarcated protected forest and outside such other areas as may be notified from time to time by the state government in this behalf for any purposes mentioned in Rule 5 of Nutor rules.
 56. SEDEM Study, 'Socio-economic impacts of hydro-projects' also found out that both in the rate of compensation as well as allotment of nautor land the influential people of upper castes have benefited more.
 57. Dharmadhikary, *Unraveling Bhakra*, p. 215
 58. *Beas Satluj link Project*, p. 2; Dharmadhikary, *Unraveling Bhakra*, p. 40.
 59. Mr Parmar, Vidhan Sabha, 4th February, 1966, Book 7, Subsection 6, Available in the Library of Vidhan Sabha Himachal Pradesh, pp 24-25.
 60. Both Bhakra and Pong created artificial lakes in the state. The reservoir of the Pong dam was declared a Ramsar site in 1993 and is the largest resting place for the migratory birds. It is also the largest manmade wetland in the North India. The Pong Wetland and Bhakra reservoirs are also utilized for reservoir fisheries.
 61. 'During reorganization of States, Shanan Power House situated at Jogindernagar (Mandi) was allocated to Punjab State by The Government of India, Ministry of Irrigation & Power. The objection raised by Himachal Pradesh in this regard stands clarified by The Government of India vide letter dated 2nd March, 1972 reaffirming the allotment of Shanan Power House in favour of Punjab State. <http://www.pspcl.in/docs/shanan.htm>
 62. The state had to move the Supreme Court in 1994 against denial of share in power projects

under BBMB and pleaded for 7.19 per cent in these on the basis of the Punjab State Reorganization Act, 1966. The apex court on September 27, 2011 granted relief to Himachal Pradesh by allowing the share. The state has started receiving its enhanced share in Bhakra-Nangal Power House from 29.29 MW to 84.23 MW, in Dehar Power House from 15 MW fixed to 56.83 MW and Pong Power House from nil to 11.77 MW from November 1, 2011.

63. Dr. Yashwant Singh Parmar, Budget Speech, 10th March 1964, Budget Speeches, p 4.
64. The press also welcomed the statehood of Himachal and felt that the state could only progress through hydro development. 'The

march towards the destiny can take place without further road blocks. But it will have to tap additional resources to ensure economic viability, a sine qua non of statehood. A revision of priorities involving the fullest exploitation of the State's vast hydel potential and its forest wealth will doubtless be among the immediate tasks to be tackled.' 'Himachal Comes of Age', The Tribune, Chandigarh, 25th January, 1971, p. 4.

65. Private participation in the generation was allowed, through amendments to the Indian Electricity Act, 1910 and Electricity (Supply) Act, 1948.
66. Data provided by Directorate of Energy, Himachal Pradesh.