

Hydropower Development and its Impact in Kinnaur District

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Abstract

In the recent decade Himachal Pradesh and its development revolved around hydropower development with its intent of turning Himachal into powerhouse of the nation. The present study tries to examine whether the setting up of large number of hydropower projects in entire stretch of Sutlej Basin in hilly area of Kinnaur district which is prone to the phenomena like landslide, flood and drying up of water resources is wise or not. The present paper is based on field work observation and study of official reports and statistics from the different departments, both governmental and non-governmental. Due to heavy blasting work used for making underground tunnel in the project entire hill on the right bank of the Sutlej river at Karcham Wangtoo project area have become vulnerable to landslides. Drying up of natural water resources has been observed at the surrounding affected villages of Karcham-Wangtoo hydropower project. In the age of climate change when area is already fragile and prone to such natural disaster question arises how prudent to start new and existing hydropower projects in the region.

Keywords: Hydropower, community, development, displacement, destructions, policy, projects, movements, run-of-the river.

1. Introduction

The impact of climate change is directly visible in mountain regions as compared to the plains. There is scientific evidence that many mountain regions have become increasingly disaster-prone in recent decades. Mountains are more frequently affected than other environments by destructive natural processes including earthquakes, volcanic eruptions, glacial lake outbursts, Flash flood. Large number of studies has been undertaken at the national level, on the issue related to the developmental projects and its impact (Narmada Dam, Tehri Dam and Silent Valley). While contesting these projects, many non-governmental organizations and local people led by social activists have come together and have focused the attention of government about negative implications of these developmental projects. The paper is an attempt to contest the impact of hydropower development in northern himalayan state of Himachal Pradesh by studying the case of Karcham Wangtoo hydro power project at surrounding ecology in Kinnaur district. Reason to take this project as analysis point is that it is largest hydropower project owned by a private company in the country till date. Large number of hydropower projects has been set up at the entire Sutlej basin in Kinnaur district but it is at this project local people first time gather to oppose hydro project which is unique in the district.

2. Statement of the Problem

Construction of multipurpose dam projects has been viewed by many as synonymous with the idea of development and economic progress. Hydropower, irrigation, water supply and flood control services were widely seen as sufficient justification for the huge investments required, while other benefits such as the economic prosperity brought to a region by multiple cropping, the installation of electricity in rural areas and the expansion of physical and social infrastructure were used to justify dam as the most economically and financially competitive option. However, with a growing body of knowledge and experience about the performance and consequences of dams has raised the questions about the level and distribution of benefits actually delivered to the local people where this type of projects has been set up.

The main reason for raising demands against these projects is that these projects are always located in relatively economically underdeveloped regions mostly in tribal regions because of the abundance of unexploited natural resources. The ideology of development is used to strengthen inequitable social relations in these societies, through acts like displacement and destructions of their natural location. These oustees who lost their livelihood and their sustenance economy are forced to depend on the market economy for survival. These people are too poor to buy the food from market economy and many households cannot afford to have electricity. They find it difficult to influence national policies, laws and institutions that could improve their life and shape their collective future. Studies have proved that existence of poverty is not so much due to the population pressure many people thinks about that causes food scarcity in most of the underdeveloped world (UNDP 1993: 161). It is primarily due to social inequality that has been prevalent to the process of development so far.¹

Cernea in his study makes an attempt to show that many public and private sector projects such as hydropower, dams and mines, trigger forced population displacement but fail to resettle people sustainably and instead cause their impoverishment. He argues that can compensation prevent impoverishment? Compensation is used by the state as the virtually single financial tool for handling displacement and resettlement and able to cure all the ills of economic impoverishment inflicted by forced displacement. However in real life compensation reveal itself to be misleading, unable to perform the restorative miracle which it is officially credited. No doubt compensation is economically justified but it is not capable of the improvement and restoration of livelihood.²

Generally, Project affected population (PAPs) often comes from fragile economic and ecological system, which can take a very long time to reconstruct. Involuntary resettlement disrupts and even destroys the sets of

relationships; the pattern of resource allocation also undermines the social relationships of family and neighbourhood from which much of the rural people's sense of their world is derived.³ In this Kothari tries to explain that most of the times, displaced people have experienced widespread traumatic psychological and socio-cultural consequences.⁴ These include the dismantling of production system, scattering of kinship groups and family system.

There is a growing awareness that the state's slogan of 'development' is no longer a politically neutral term. It is seen to amount to a redistribution of resources or production relations in favours of the powerful sections of society. It began to be perceived that the benefits and costs of these developmental projects were being unevenly distributed in society; this is the cause there was a rumbling of protest against them. Yet the dominant discourse in India continues to be in favours of the planning and implementation of these projects.⁵

3. Impact of Karcham Wangtoo Hydropower Development at Surrounding Areas

Himachal Pradesh at present has its twelve districts with different climatic zones. Among these twelve districts, Kinnaur district of Himachal Pradesh constitutes a special category of economic backwardness due to its inaccessibility and inhospitable geo-climatic setup of the region. Kinnaur is one of the districts of the country that is located on international border and it has its own peculiarities of language, history and natural phenomena. Being a Tribal district, it commands certain uniqueness among the districts of Himachal from the angle of socio-economic development as it remains among the most underdeveloped region in the state because of its geographical location. Kinnaur district is situated on both the banks of the river Sutlej of the northeast frontier of Himachal Pradesh. Because of limited rainfall and its dryness, the area is very fragile and sensitive and landslide is a common phenomenon in this area. Recently district faces the problems created by man and machine intervention in the natural resources like water. A large number of hydropower projects have been constructed in the district, some are under construction stage and some are still in the planning stage. The estimated hydropower potential at the entire Satlej river is more than 10,000 MW. In addition, there is tremendous potential for generation of hydropower from its tributaries. Within Kinnaur district with a net targeted exploitation of hydropower potential is about 4192.3 MW capacities.

Sutlej River, 7 km after entering Kinnaur District, flows from one tunnel into another tunnel because of these hydropower projects which is based on Run-of the-River scheme. It is astonishing to note that out of total 150 km. stretch of Sutlej basin in Kinnaur, about 120 km. length of Sutlej river is going to run through the underground tunnels and remaining 30 km. will be seen as reservoirs of these projects. The 1,000 MW Karcham Wangtoo project has a

17.2 km long tunnel. Karcham Wangtoo hydro power project in Kinnaur district of Himachal Pradesh has been selected as area of research. This project played a critical role in turnaround of local opinion on hydropower plant, as for the first time local people get together to oppose this project in the district. 1000 MW Karcham Wangtoo hydro-power project is the largest private sector hydro-electrical project in the country owned by the Jaypee group and its associates which is recently acquired by JSW group.

This project is based on the Run-of-The River project; under-ground tunnel construction has been made. Most of the 'Run-of-the River' hydroelectric projects are being developed in the Himalayan region. A technology called 'Run-of-the River' involves building of a dam at the point where the river is diverted into a tunnel to be dropped back into the source river several kilometres downstream. The power house is built at the point where the river is dropped back into its source.⁶ Accordingly project plays a critical role in local people livelihood since project authorities never consulted these people for the project especially about the underground tunnel construction and no objection was sought from these people. According to project authority reports, those who get displaced because of project settlement are 31 families. As these people have lost their land and houses in project settlement (colonies has been setup where their officials and labourers can reside and project offices has been built) and for this they have got monetary compensation. Since the villagers live above tunnels which is part of run-of-the river project scheme of Karcham Wangtoo project, so these villagers have been complaining about cracks in their houses, lands and natural water resources get dried away and they are suspecting that underground tunnels and blasting used in this work cause these cracks and loss of water resource. These villages have been not considered as displaced by project authority as they have given submergence as criteria to defined directly affected population. But these villagers have been facing socio-economic and ecological consequences of this project as much as other displaced families.

In order to understand development and its impact, the paper tries to analyse the impact of developmental projects, present study took indicators like impact of project on local economy and climate change phenomena like loss of natural water resources. Some official data like losses in horticulture and drying up of natural water resources has been used to explain the argument. Kinnaur district is known in the international market for its apple economy. Instead of the development of the local horticulture based economy, there has been indication of losses in fruit crops especially apple cultivation due to hydroelectric project being executed in the area during year 2009-2010. A loss in apple production has been attributed to dust pollution caused by various hydropower project activities in the area. To investigate this issue, Deputy Commissioner had constituted a committee consisting of the technical officers who were asked to assess the losses of fruit plant due to the construction

activities of hydroelectric project in four Gram Panchayats namely Chagaon, Urni, Meeru and Yulla. The Joint Inspection Committee of Technical experts conducted Panchayat wise assessment of losses in percentage as per the on spot inspection. It was undertaken between period from 11.05.2010 to 13.05.2010.

An Assessment of the losses to the Fruit Crop

Sr. No.	Name of the Panchayat	Approximate area under Orchard (Apple Cultivation)	Name of Up Mohal	% of losses to fruit crop due to hydro Electric activities.
1	Chagaon	167 Hectare	I. Tapri (34 hect.) II Yashing (6hect.) III Samkarang (84 hect.) IV Ranpanag (35 hect.) V Uravaning (4 hect.)	28-30% 12-15% 18-20% 18-20% 18-20%
2	Urni	80 Hectare	I Kutanu (24 hect.) II Urni Khas (26 hect.) III Ralsanthung (28 hect.)	28-30% 18-20% 18-20%
3	Yulla	30 Hectare	I Yulla Khas (25 hect.) II Yuldang (5 hect.) III Runang Nichla (20 hect.)	12-15% 12-15% 23-25%
4	Meeru	65 Hectare	I Cholling (9 hect.) II Meeru Khas (4 hect.) III Ghoumaruning (10 hect.)	18-20% 18-20% 12-15%

Source: Horticulture Department Recong Peo Kinnaur District.

These affected populations including displaced families and surrounding communities whose livelihood and access to resources are affected by changing land and water settlement in the area. With the set up of hydro-power developmental project, lots of changes are expected to take place. On a negative side, common property resources like grazing lands depleted because village structures have undergone changes. It has also had impact on cultural values of tribal communities as local people are getting influenced by modernization and urbanization because these projects are coming and people are forgetting their traditional means of livelihood like agricultural activities and uses of forest products. In search of education and employment opportunities people are migrated to other districts or different cities. It has have also implications on the local people social settings as many outsider labourers and officials have come up at the project area and they have interactions with local people and sometimes interfere in their internal affairs.

Another important implication has been seen is related to global warming phenomena. As the impact of climate change can directly visible in the hilly region as compared to plain areas. In the mountainous region climate change phenomena like either excessive rain which causes land slide problem and lack of rainfall which causes drying up of natural water resources and vegetation cover can be easily seen. The phenomenon can be supported by the indicator like drying up of natural springs due to construction and blasting activities which is the part of Run-of-the River scheme of the project. The Sutlej is not the main source of consumption water in the area. The natural springs are the key source of water for people living in the area for their domestic consumption, livestock use and irrigation purposes. A large number of hydropower developments in the area are causing diversion of river flow for power generation, directly putting an impact on availability of water for consumption at the area. The claim of the villagers was also verified by the state's Irrigation and Public Health Department in response to a Right to Information (RTI) application. The official data showed that water sources had been impacted due to the project. Complete drying of various natural springs however, has been reported due to construction activities which will have adverse impact upon locals in future time. Details of the natural water resources which have been dried away in the surrounding areas of Karcham Wangtoo Project are following:

**Joint Measurement of Discharge of Water Sources in Year
Between 2004 to 2011**

Name of village	Name of water sources	Status
Meeru	(I) Shodat Nichala (II) Bonmeech Nalang (III) Teag Nalang (IV) Duktee Dakhang (V) Garangcho Nalang	Dried
Chagaon	(I) Chhit Pane (II) Chirchirang (III) Runo Nalla (IV) Chhangla (V) Khachhang	Dried
Urni	(I) Sonoko (near Choling) (II) Choling (near Army camp) (III) Shhennalan (IV) Rochmanang (V) Kalinge	Dried
Runang	(I) Yumanang I (II) Yumanang II (III) Runang Nichala near house of Ramesh Kumar	Dried

Source: IPH (Irrigation and Public Health) Recong Peo, Kinnaur District.

It has been found out that due to unscientific and heavy blasting the entire hill on the right bank of the Sutlej River has become vulnerable to landslides and the road is hardly being restored. In 2014-15 the inhabitants of tribal district of Kinnaur have repeatedly been facing road blockages at Urni NH-22 due to landslides. Due to active and heavy landslides, travelling on this road had become very risky.⁷ On June 20, the HP High Court issued notices to the Central and the state governments on the issue of poor condition of roads in Kinnaur. The order was filed on a PIL which alleged that the roads were badly damaged due to indiscriminate and unscientific blasting by the JayPee Company constructing the Karcham Wangtoo Hydel Project.

However A study by the Geological Survey of India blamed the landslides in Urni village of Kinnaur district as the horticultural and agricultural activities in the region which practices from earlier period. The irrigation water acts as lubricating agent in this structurally fragile slope triggering landslide action. The obvious question here is that if the area was landslide prone in the past and if the slopes were structurally fragile then why were these factors not considered at the time of allowing the Karcham Wangtoo project to come up? There has been no effort by the state government or the Ministry of Environment to recognise that there exist a linkage between natural disasters and construction activities of these hydropower projects in the area.⁸

In spite of this The Directorate of Energy (DoE), Govt of Himachal Pradesh had advertised for 37 power projects in Himachal Pradesh worth 1,137 MW seeking bids from the power companies on a build, own, operate and transfer (BOOT) basis in July 2014. As many as 11 of these projects are located in the tribal Kinnaur district, where the tribals are already resisting against these power projects.

Most of the existing literature on the environmental movements in India, while considering it along with other social movements, views hydropower development as reflecting a kind of disenchantment with state-led development strategies in general, and development projects in particular as well as it is creating political space for alternatives to the dominant development paradigm. In this way, clashes between villagers and project managements for different issues are becoming obvious at the Sutlej River in Kinnaur district, as most of the tributaries have been allotted hydro power companies to generate power. In the case of Karcham Wangtoo project, affected people are involved in an agitation under the leadership of Karcham Wangtoo Sangarsh Samiti and Him Lok Jagriti Manch. These organizations are the stage through which local people are voicing their concerns at the time when state agencies and project authority are not considered necessary to consult these affected people. These are the two organizations continuously focusing the attention of government and Jaypee project on different issues and mobilizing the people for demanding justice for their land and water resource use.

4. Summing Up

This paper makes an attempt to study the impact of hydropower development in the case of Karcham Wangtoo hydro power project at surrounding environment in Kinnaur district. In this direction study makes attempt to find the fault which causes local people opposition against such projects in district. Study reveals that the main issues which came up today in most of the hydropower developmental projects in the Himalayan regions and Kinnaur district in particularly are based on a scheme Run-of-the River project which is commonly described as being 'environmentally friendly'. The contention here is that as hilly area like Kinnaur which itself is known as rocky and fragile mountain the scheme itself is contradicting the environmentally benign project conception. So the need of the hour is to redefine the hydropower development policy of Himachal Government itself.

Notes

- ¹ Amita Baviskar, *In the Belly of the River: Tribal Conflict over Development in the Narmada Valley* (New Delhi: Oxford University Press, 1995), 26.
- ² Michael M. Cernea, "Compensation and Benefit Sharing: Why Resettlement Policies must be Formed," *Water Science and Engineering*, Vol. 1, No.1 (March 2008): 90.
- ³ Chris De Wet, "Economic Development and Population Displacement: Can everybody Win," *Economic and Political Weekly*, Vol. 36, No. 50 (2001): 4639.
- ⁴ Smitu Kothari, "Whose Nation? The Displaced as victim of Development," *Economic and Political Weekly* (1996): 1477.
- ⁵ Satyajit Singh, *Taming the Water: The Political Economy of Large Dams in India* (New Delhi: Oxford University press, 2002), 204-205.
- ⁶ Prakash Bhandari and Manshi Asher, *In the name of clean energy: A Report on Asian Development bank financed hydropower projects in Himachal Pradesh* (Himachal Pradesh: Him Dhara, Environment Research and Action collective, May 2011), 5.
- ⁷ Himachal Pradesh Hydropower Projects in 2015, *SANDRP*, 13, January 2016.
- ⁸ Himachal Pradesh Hydropower Projects in 2015, *SANDRP*, 13, January 2016.

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