



## Hydro Power Development and the Lepchas: A case study of the Dzongu in Sikkim, India

Purkayastha Subrata

Department of Geography, North Eastern Hill University, Shillong, Meghalaya, INDIA

Available online at: [www.isca.in](http://www.isca.in)

Received 5<sup>th</sup> July 2013, revised 23<sup>rd</sup> July 2013, accepted 7<sup>th</sup> August 2013

### Abstract

*The Teesta hydro power projects in Sikkim promises development prospects for the people living in the remote and backward area of North Sikkim where the Dzongu the sacred land of the Lepchas (covering an area of about 78sq km) is located. The Lepchas are the original inhabitants of Sikkim but at present constitute less than 15% of the total population of the state are threatened by this development project as they fear that their unique identity and religious practices rooted in their natural surroundings will be taken away by such projects. Hence the Lepchas along with the civil society are engaged in Gandhian protests against such projects as they feel that the development of the projects here will not only take away their holy land but also lead to demographic changes besides destroying the fragile natural environment which cannot sustain heavy constructional activities associated with Hydro- power development. It is against this background that the present paper highlights on the loss of the unique culture and religious practices of the Lepchas, the environmental vulnerability and livelihood losses associated with such projects. The data source for this paper is from both secondary and primary sources generated during field investigation and the method is theoretical.*

**Keywords:** Hydropower development, identity crises, Dzongu, Lepcha.

### Introduction

The Lepchas or the rong pa (ravine-folk) are believed to be the oldest tribe of the state of Sikkim and the adjoining Darjeeling district of West Bengal. Erstwhile colonial scholars and administrators like Hooker<sup>1</sup>, White<sup>2</sup>, Risley<sup>3</sup> have mentioned about the Lepchas inhabiting the inaccessible forested ravines of eastern Himalayas constituting present Sikkim, portion of Darjeeling district of West Bengal, western Nepal and eastern portions of Bhutan. At present Lepchas constitute about 7% (2011 census) of the total population of Sikkim and their share of total population in the Darjeeling district is marginal (less than 1%) Hence they have been reduced to a minority in their own homeland (Sikkim). Waves of migration from Tibet in the North, Bhutan in the East and Nepal in the West have brought thousands of people to the land of the Lepchas over a millennium or so. As the Lepchas could not cope with the changing culture and land use under the influence of large scale immigrants they were either pushed inside the riparian tracks of forests or were assimilated with the new settlers. Concerned at the marginalization of the indigenous Lepcha population by the new settlers the erstwhile rulers of Sikkim took the first step to protect the Lepchas by reserving certain areas and rights only for the Lepchas. The Dzongu in the North Sikkim was declared as a land reserved only for the Lepchas of Sikkim- Choudhary<sup>4</sup>. The need to create a Lepcha reserve arose out of the fact that the Lepchas were fast vanishing after the arrival of Bhutias and Nepalis from the neighboring countries. In fact it was the British rulers of pre-independent India who urged upon the Chogyal (Bhutia Monarch) of Sikkim to protect the Lepchas and their

unique culture from extinction. Thus the Chogyal declared a sizeable land consisting of thirteen revenue blocks located on the western side of the river Teesta in North Sikkim as a Lepcha Reserve which was already inhabited by the Lepchas. This tract is called Dzongu skirted by river Teesta in east. The Dzongu is a narrow strip of land which extends from north to south with a long and narrow extension towards the west on either side of Rongyoung a tributary to Teesta. As per the declaration of the Chogyal of Sikkim no outsiders could inhabit Dzongu and only indigenous Lepchas enjoyed the right to inherit, sale or mortgage their land, territory and resources- Chowdhury<sup>5</sup>. The Lepchas of the Dzongu are believed to have retained the basic characteristics, both physical and cultural traits of the tribe in pure form and the erstwhile rulers of Sikkim were quite successful in making the Dzongu the Lepcha land.

However with the merger of the tiny Himalayan protectorate of Sikkim with the Indian union as recently as 1975 things changed and the Lepchas of the Dzongu who had enough farmland, forest resources to provide for their sustenance are at present being threatened in the name of development as the state of Sikkim envisages development of Hydropower which will usher in the much needed infrastructural and socio-economic development of the state as a whole and the Dzongu in particular.

Sikkim like any other Indian state in a developing economy is on its path to modernization and development and with its rugged terrain and swift flowing rivers it has high potentiality for development of hydro power projects which has led the state

administration to invite both the public and private sectors to develop such projects. The present government policies of Sikkim envisages that hydropower development will eventually lead to overall infrastructural development of the state paving the way for the socio-economic development of the population living here. At present the State administration under the aegis of Sikkim Power and Development Corporation Limited, has sanctioned 27 Hydro electric projects out of which 8 projects are located in the Dzongu the sacred land of the Lepchas This has been opposed by the Lepchas residing in the Dzongu as they feel that the such power projects though aims at enhancing their socio- economic opportunities, in reality leads to alienation of their community from their land and culture.

The hydro electric projects here is not only bringing about socio-economic and demographic changes but is also drastically redefining the land use pattern that is often associated with displacement of people from their ancestral habitats, and at the same time is causing large-scale loss of traditional culture that is sometimes resented by the local population and are often not easily acceptable to the local population resulting to turmoil and conflicts in a relatively peaceful area.

It is in this context that the Lepchas are protesting against such developmental projects, these protests which are at present peaceful but may turn violent in near future leading to turmoil in the otherwise peaceful state of Sikkim which is located in the strife prone zone of North East India and is of strategic importance as it is shares an international boundary with the People's Republic of China.. Consequently the present paper highlights on the role of such developmental projects in eroding the unique culture and religion of the Lepchas as well as the environmental vulnerability and loss of livelihood opportunities of such small communities in the name of Development.

**Objective:** The present paper highlights on the economy and unique culture of the Lepchas who are at present opposing development projects in the form of Hydro power projects in the Dzongu as they feel that such developmental activities will take away their land, physical resources and unique culture from them. The paper also addresses the environmental vulnerability and loss of livelihood opportunities based on availability of local resource of small communities in the name of development by taking the case study of the Lepchas.

## Methodology

**Data source and methodology:** The data source for this paper is based on both primary and secondary sources. Primary data has been collected through field observation, focused group discussion with some of the Lepcha community Leaders and informal interview with different officials, local residents and members of Active Citizen of Teesta (ACT).The Paper is theoretical in nature where mostly views of the local population has been represented along with scientific reports on the viability of the hydro-power projects located in the Dzongu.

**Study Area:** The Dzongu is located in the district of North Sikkim. As already mentioned the Dzongu is a Lepcha reserve created to preserve the social homogeneity of this small community with its unique religio-cultural practices intricately related to their pristine natural surroundings. The Dzongu was created as Lepcha reserve in the erstwhile Chogyal era when Monarchy prevailed over this small state. The Dzongu covers approximately 78 sq km of geographical area and extends between 27°28' – 27°38' N lat. and 88°23' – 88°38' E longitude, its altitude ranges from 700 m to 6000 m above msl and is spread on a hilly terrain having dense forests. The Dzongu is roughly triangular in shape, bounded by the river Teesta on the south-east, River Talung on the north-east. Towards the west lies the southern part of the Himadri (greater Himalayan ranges) where Mt. Kanchenjunga (8,598 m, world's 3<sup>rd</sup> highest Peak) is located. The geographical position of Dzongu has accentuated its isolation from the rest of Sikkim. The area has a unique picturesque landscape boasting of diverse snow covered mountains intersected with steep and narrow valleys and gorges that are well drained by swift flowing mountainous streams rich in hydro-power potential. Owing to dense forest cover, the area experiences showers almost throughout the year. The area can be divided into three climatic zones viz. sub-tropical zone, temperate and alpine zones that is extremely rich in bio-diversity. It borders the Kanchenjunga Bio reserve and has some of the ancient Buddhist monasteries and temples.

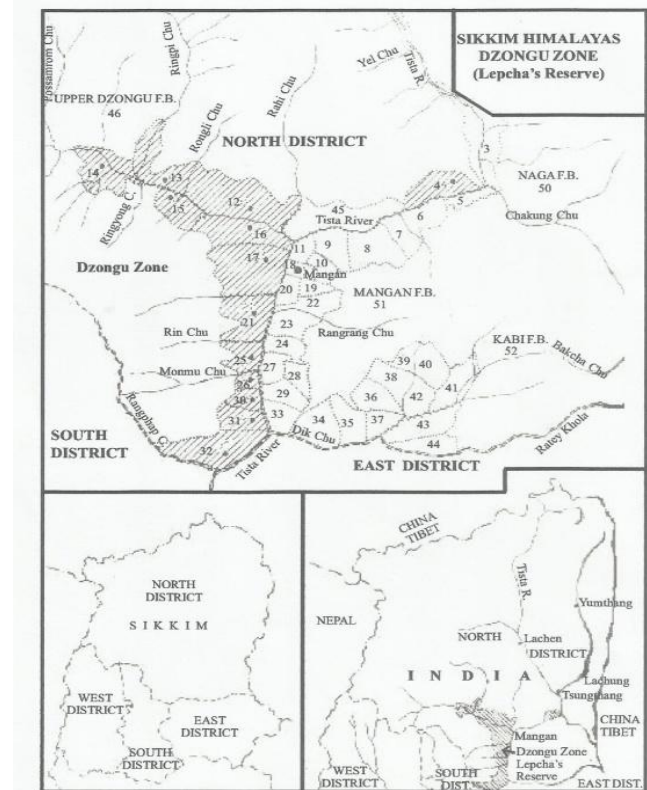


Figure-1  
The Dzongu

**The economy and culture of the Lepchas:** Traditionally the Lepchas were skilled hunters, food gatherers and shifting cultivators but at present they prefer to practice sedentary agriculture and animal husbandry. They mainly grow maize and millets as cereals besides vegetables. Their cash crops are cardamom and ginger along with orchards where oranges are grown. Recently tourism is emerging as an important economic activity.

The Lepchas are of Mongoloid race and their language belongs to the Tibeto Burman group of languages. The traditional cloths of the Lepchas are hand woven with exquisite colour combination and they are skilled bamboo craftsmen having vast knowledge on medicinal plants found in their vicinity. Till recently the Lepchas of the Dzongu were blissfully unaware of the external threats to their identity and culture. As the name suggests Rong pa (ravine folk) the Lepchas are inhabitants of the riparian subtropical forests of eastern Himalayas who have learnt the intricacies of nature. Legend has it that the Rongpa were occupying their ancestral land Nye- Mayel (Sikkim) which was submerged due to a great flood and their ancestors climbed up on a hill to find a safe place at mount Tendong similar to the biblical story of Mount Arafat which saved Noah and his tribe during the biblical flood. Their society is divided into clans named Putso and each Lepcha putso claims to have a mythical connection with a particular mountain peak which they worship as their diety -Bhasin<sup>6</sup>.

Hence the impact of Mount Tendong, Khangchendzonga river Teesta and Rangit as well as many landforms of the region are so profound in the psyche of the Lepchas that they cannot imagine of any land other than this as their homeland. But with present development activities in the form of hydro power projects their homeland is being encroached upon and is leading to tension as the Lepcha community feels threatened by such developmental projects and some of them are resisting the implementation of such projects.

**Present Development activities and Loss of the unique culture-** The maximum hydro power potential of the state of Sikkim is about 8000 MW with a firm base of at least 3000 MW. The Teesta and Rangit are the two main rivers of Sikkim where considerable hydro power potential is available. In 1974, a committee was constituted to study the hydropower potential in Sikkim. As per the preliminary reconnaissance survey, the river Teesta can be harnessed under a cascade development for hydropower generation in six stages i.e. Teesta Stage-I to Stage-VI. Besides the river Teesta the other tributaries of the river such as Rangit, Rangpo, Lachen etc. are also having high potential for the hydro power development. As the government of Sikkim encourages hydropower development for enhancing socio-economic development of the state it encourages both the public and the private sectors to harness the Hydro –energy thus The National Hydroelectric Power Corporation Limited (NHPC) and other private developers are entering in the hydropower

sector in Sikkim. The State envisages that hydropower development will eventually lead to the overall infrastructural development here as hydropower generation involves construction of dams, tunnel, power station etc which involves developing transport linkages, opens up employment opportunities and generates income enhancing the socio-economic development of the population residing here.

At present only about 600 MW (7.5%) of hydropower potential has been developed in the state by constructing mini and micro hydel projects and more than 5000 MW hydro power potential is under development in different stages. As mentioned a preliminary survey reveals that hydropower on river Teesta can be generated in a cascade arrangement in six stages. Out of 3315 MW in its power system 17.19% (570 MW) has already been commissioned. The Sikkim Power Development Corporation Limited has granted permission for more than 24 different hydropower projects, which will generate at least 5494 MW. The list of upcoming hydropower projects are shown in Table 1. The total estimated cost of these projects is about Rs. 25,000 crores (US \$ 62 billion).

Out of the total hydro-power projects eight projects are directly or indirectly associated with the Dzongu area where 38 Lepcha villages are located. This area has been assessed to have a capacity of around 2500 MW of electricity. The Teesta stage III, IV, and V projects located in Panam, Rangyong, Rukel, Ringpi, Lingzya are directly or indirectly going to affect the Dzongu. Out of the 38 Lepcha villages located in the Dzongu reserved area the Dzongu village is the holiest place of all which is being directly affected by the Teesta V project. The hydro power projects here will take away the holy Teesta from the Lepchas as the projects here are “run of the river” where the river water is diverted through long tunnels before the water is dropped back into the river at downstream location. This leads to most of the river flowing through tunnels and the river disappears from its original course, thus restricting rituals associated with the river.

As the Lepchas are animists with some influence of Lamaism and Buddhism their traditional religious practices are intricately related to the mountains, streams and vegetations found here. They perform elaborate rituals in the Dzongu village. Thus the proposed d hydropower projects here is having a drastic effect on the religious practices of Lepchas leaving its impact on the socio-cultural setup of this small community, besides inducing environmental vulnerability in the fragile landscape of the Dzongu, the ancestral homeland of the Lepchas- Kohli<sup>7</sup> Consequently the Teesta hydel project and its implementation may lead to the loss of the Dzongu (the ancient Lepcha reserve) which may result in ethnocide, the disappearance of the cultural heritage of the Lepchas that is rooted to their ancestral connections and performance of rituals connected to the land, forests, mountains, lakes, and nature, in general.

**Table-1**  
**Upcoming and completed Hydropower Projects in Sikkim (updated 2010)**

S.No.	Project Name	Capacity (MW)	Developer	Probable date of Commissioning	Present status
1	Teesta Stage-I	280	Himalayan Green Energy (P) Ltd	2012-13	Under investigation
2	Teesta Stage-II	330	Him Urja Infra (P) Ltd	2011-12	Under investigation
3	<b>Teesta Stage-III</b>	1200	Teesta Urja Ltd	2011-12	DPR Ready
4	<b>Teesta Stage-IV</b>	495	NHPC	2011-12	Under investigation
5	<b>Teesta Stage-V</b>	510	NHPC	2008-9	Commissioned
6	TeestaStage-VI	500	Lanco Energy (P) Ltd	2011-12	Under investigation
7	Lachen	210	NHPC		Under investigation
8	<b>Panan</b>	280	Himgiri Hydro Energy (P)Ltd	2011-12	DPR Ready
9	<b>Rangyong</b>	Approx 300	NHPC	2011-12	Stopped
10	<b>Rukel</b>			2005	Stopped
11	<b>Ringpi</b>			2005	Stopped
12	<b>Lingzya</b>			2005	Stopped
13	Rongnichu	96	Madhya Bharati Power Co.	2011-12	Under investigation
14	Chuzachen	71	Gati Infrastructure Ltd	2011-12	Under Construction
15	Sada-Mangder	99	Gati Infrastructure Ltd	2009-10	DPR Ready
16	Bhasmey	51	Gati Infrastructure Ltd	2011-12	DPR Ready
17	Rolep	36	Amalgamated Transpower India Ltd	2009-10	DPR Ready
18	Chakung Chu	50	Amalgamated Transpower India Ltd	2011-12	Under investigation
19	Ralong	40	Amalgamated Transpower India Ltd	2011-12	Under investigation
20	Rangit-II	60	Sikkim Ventures (P) Ltd	2011-12	DPR in final stage
21	Rangit- III	60	NHPC	1997-98	Commissioned
22	Rangit-IV	120	Jal Power Corporation Ltd	2011-12	DPR Ready
23	Dikchu H	96	Sneha Kinetic PP Ltd	2011-12	Under Construction
24	Jorethang Loop	96	DANS Energy (P) Ltd	2011-12	Under investigation
25	Thangchi	499	Lachung Power (P) Ltd	2011-12	Under investigation
26	Bimkyong	99	Teesta Power (P)LTD	2011-12	Under investigation
27	Bop	99	Chungthang Power (P) Ltd	2011-12	Under investigation
	Total (est.)	5494			

Source- Sikkim Power Corporation Ltd., \*Name in bold letter represents the projects related to the Dzongu.

Some scholars like Kohli<sup>8</sup>, Lepcha and Vagiholika<sup>9</sup> are of the opinion that customs, traditions and the very character of the Lepchas are intricately related to their natural surroundings. The Lepchas believe that they were created by mother nature in the Dzongu, hence development of dams will adversely affect the local population as it will redefine land use and take away their common property rights over the forests and water bodies. Chowdhury<sup>10</sup> documents the intense local resentment against hydro power projects located in the Dzongu as the Lepchas fear influx and settlement of the outsiders that will ultimately lead to the loss of their unique culture as they are small in number (about 7000 population living within the Dzongu). Moreover the Panan Project under TeestaVI is taking away the sacred sites-Kagey Lha- Tso lake, the Drag Shingys caves and the Jhe-tsa-tsu and Kong Tsa-tsu hot springs. The hot spring are said to be endowed with healing properties and are of medical importance to the Lepchas.

**Environmental vulnerability and associated livelihood loss -**  
 As per the carrying capacity report of the Teesta Basin conducted by the CISMHE in Dec. 2007 which clearly states

that some of the projects located in the Dzongu (under Teesta Stage III project) are environmentally not advisable. The recent earthquake in 2011 further suggests that the Dzongu is not suitable for big hydro power projects which envisage heavy construction for damming and tunneling the rivers through the fragile mountainous terrain of Sikkim extremely prone to earthquakes.

Field investigation to this area suggests that the Lepchas are reeling under the losses incurred in Cardamom cultivation whose productivity has fallen. This is the main cash crop of the Lepchas and the Lepchas are looking for other alternatives in order to curb the disorder created in their socio-economic life by the hydro power projects in their area. Some of the settlements located in the vicinity of the existing power plants of Teesta stage V are experiencing reduction in crop production especially oranges. New landslide scars are appearing in the fragile hill slopes and some of houses in the small Lepcha villages are reporting development of cracks due to vibration caused by high power blasting associated with the projects, drying up of

perennial streams, landslides etc have been reported from this area - Bhasin<sup>11</sup>.

Due to tunneling of the river large quantities of muck has been deposited in the river restricting its flow and increasing the threat to downstream area.

The Lepchas feel that the gas used in blasting has adversely affected the productivity of the Cardamom by about 50%. Dust pollution is rampant affecting the flowering and productivity of fruits.

The Lepchas residing in the area are aware of the threat associated with the development of hydro-power projects and at present are concerned for their future and their rights. They have formed a committee called the Affected citizen of Teesta (ACT) to seek redressal for the problems faced by them in the Dzongu, protests are on as the Lepchas are aware of their rights as an indigenous people to be protected by the Indian Constitution, the Supreme court and above all the Human right commission which ensures that the small indigenous communities like the Lepchas have the right to control their resources for their own needs and interest.

## Conclusion

Sikkim is a relatively backward state of India and needs to enhance its socio-economic development. But the state is not known to have many minerals nor is it suitable for agricultural development. The only recourses the state can boast of are forests, water resources and the panoramic landscape of the Himalayas (which can be tapped by development of tourism sector). The forest resources of Sikkim are to be preserved and protected at any cost for the sake of ecology and environment. Hence the other options are development of tourism and

development of hydro power as the state is abound with swift flowing streams which can be harnessed for generation of hydro electricity, Besides tourism the administrators have focused their attention on generation of hydro electricity and accordingly hydro power projects are coming up in the state in the last few decades. The state plans to produce a whopping 5000MW of power annually whereas the domestic requirement of the state is only about 100MW of electricity. Hence the rest of the power will help in generating revenue for the state as the state will be in a position to sell energy to the neighboring populous states of West Bengal, Bihar etc. As much of the water resources in Sikkim lie in North Sikkim where the Dzongu is also located. the dilemma in the development of the mega projects here is the loss of land, livelihood and the unique culture of the small community of the Lepchas in one hand and on the other hand is the hope of ushering in of the supply of energy and prosperity to the towns and cities located far away from the Dzongu where a large chunk of the Indian population resides But this is possible only at the cost of the Lepcha identity, culture and economy. Consequently the question arises whether such development which in one hand can bring prosperity to the population residing in far away cities and towns of mainland India will at the same time may lead to erosion of traditional culture of this vulnerable tribe beyond repair. The Lepcha identity and culture may be wiped out for ever from the mother earth. Is this development justified as the Constitution of India, the honorable Supreme Court of India and the Human Rights Commission Declaration 1993 all speaks about the rights of small indigenous communities to uphold and protect their land, territories and resources and also emphasizes on the indigenous people's right to strengthen their institutions, culture and tradition in order to promote their development in accordance with their aspiration and need-Annon<sup>12</sup>.



Figure-2  
Before and after the tunneling of the River Teesta

## References

1. Hooker J.C., *Himalayan Journals: Notes of a naturalist in two Vol.* Pub. 1855, John Murrey London. Reprinted 1980 Today and Tomorrow, N. Delhi, **117 (1855)**
2. White J.C., *Sikkim and Bhutan: Twenty one year on the North East Frontier 1887-1908* first Pub. 1909 Edward Arnold. Reprinted 1999, Low price edition Pub., N. Delhi., **7 (1909)**
3. Risely H.H., *The Gazetteer of Sikkim*, First Pub., Bengal Press Calcutta, Reprinted 1999 Low price edition Pub. N. Delhi, **1 (1928)**
4. Choudhury M., *The Rights of indigenous tribes and threat perception of the Lepchas of Sikkim* in the book National Resource Management and sustainable development in NE India , N. Ali (Edt) Mittal Pub., N. Delhi, 33-44 **(2007)**
5. Choudhury M. *The Rights of indigenous tribes and threat perception of the Lepchas of Sikkim* in the book National Resource Management and sustainable development in NE India , N. Ali (Edt) Mittal Pub., N. Delhi, 33-44 **(2007)**
6. Bhasin V. Settlements and Land-Use Patterns in the Lepcha Reserve-Dzongu Zone in the Sikkim Himalaya, India J Biodiversity Univ. of Delhi, **2(1)**, 41-66 **(2011)**
7. Kohli K. Inducing vulnerability in a fragile Landscape: Economic and Political Weekly **XLVI(51)**, 19-21 **(2011)**
8. Kohli K., Inducing vulnerability in a fragile Landscape: Economic and Political Weekly, **XLVI(51)** 19-21 **(2011)**
9. www sanctuaryasia.com - Lepcha Tand N. Vagholikar Sikkim under attack, Sanctuary Asia June, **(2011)**
10. Chowdhury. M. Carrying Capacity study of Teesta basin in Sikkim: Socio-cultural Environment; **VolIX** Ministry of Environment and Forests, Govt. of India. 134-135 **(2007)**
11. Chowdhury. M. Carrying Capacity study of Teesta basin in Sikkim: Socio-cultural Environment; **Vol.X** Ministry of Environment and Forests, Govt. of India. 134-135 **(2007)**
12. Bhasin V., Settlements and Land-Use Patterns in the Lepcha Reserve-Dzongu Zone in the Sikkim Himalaya, India J Biodiversity Univ. of Delhi, **2(1)**, 41-66 **(2011)**
13. Commission on Human Rights. Report of the working group on Indigenous population on its 11<sup>th</sup> session, Annex.1,23 Aug. **(1993)**