Benefit Sharing Among Local Communities of Hydropower Projects in Sikkim

A Dissertation Submitted

To

Sikkim University

In Partial Fulfillment of the Requirement for the
Degree of Master of Philosophy

By

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Declaration

I, Bibeshna Pradhan, hereby declare that the dissertation entitled **"Benefit Sharing among local communities of Hydropower Projects in Sikkim"** is the record of work done by me, that the contents of this did not form basis of the award of any previous degree to me or to the best of my knowledge to anybody else, and this dissertation has not been submitted by me to any other University or Institute.

This is being submitted in partial fulfillment of the requirement for the award of the **Degree of Master of Philosophy**, to the Department of Geography, School of Human Sciences, Sikkim University.

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(Dr. Uttam Lal) **(Dr. Vimal Khawas)**

Head of the Department Supervisor

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This is to certify that the dissertation entitled **"Benefit Sharing among local communities of Hydropower Projects in Sikkim"** submitted to Sikkim University in partial fulfillment of the requirements for the degree of Master of Philosophy in Geography is the result of bonafide research work carried out by **Ms. Bibeshna Pradhan** under my guidance and supervision. No part of the dissertation has been submitted for any other degree, diploma, associateship and fellowship.

All the assistance and help received during the course of the investigation have been duly acknowledged by her.

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"Benefit Sharing among local communities of Hydropower in Sikkim"

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Lists of Abbreviations

ABS	Access and Benefit Sharing
ADB	Asian Development Bank
BPL	Below Poverty Line
BCA	Bumbuna Conservation Authority
BOOM	Build Own Operate and Maintain
BOOT	Build Own Operate and Transfer
BWMA	Bumbuna Watershed Management Agency
CAT	Catchment Area Treatment
CBD	Convention on Biological Diversity
CDF	Community Development Fund
CEA	Central Electricity Authority
COD	Commercial Operation Date
COP	Conference of Parties
CSR	Corporate Social Responsibility
CWC	Central Water Commission
DMF	District Mineral Foundation
DPR	Detailed Project Report
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EPA	Environment (Protection) Act
GDP	Gross Domestic Product
GoI	Government of India
GoS	Government of Sikkim
GoU	Government of Uttarkhand
GW	Giga watt
HEP	Hydroelectric Project
ICILOD	International Commission on Large Dams
IEA	International Energy Agency
IHA	International Hydropower Association
IWRM	Integrated Water Resource Management

KW	Kilowatt
LAA	Land Acquisition Act
LADF	Local Area Development Fund
LFCD	Lesotho Fund for Community Development
MAW	Minimum Agricultural Wages
MBPCL	Madhya Bharat Power Corporation Limited
MDGs	Millennium Development Goals
MMDRA	Mines and Minerals (Development) and Regulation
MoEF	Ministry of Environment and Forest
MoP	Ministry of Power
MoU	Memorandum of Understanding
MU	Million Unit
MW	Megawatt
NCEPC	National Committee on Environmental Planning and Commission
NGOs	Non-Governmental Organizations
NHPC	National Hydroelectric Power Corporation
NOC	No Objection Certificate
NWG	National Working Group
OECD	Organization for Economic Co-operation and Development
PAPs	Project Affected Peoples
PAFs	Project Affected Families
PES	Payment for Ecosystem Services
PPP	Public Private Partnership
RGGVY	Rajiv Gandhi Grameen Vidyutikaran Yojana
RMDD	Rural Management & Development Department
R&R	Rehabilitation and Resettlement
R-O-R	Run of River
SC	Schedule Caste
SLO	Social License to Operate
SPCB	State Pollution Control Board
SPV	Special Purpose Vehicle
SSERC	Sikkim State Electricity Regulatory Commission

ST	Schedule Tribe
SWECO	Swedish Consultants
UN	United Nation
WCD	World Commission on Dams

Chapter 1

INTRODUCTION

1.1 Introduction

There has been a long history of hydropower development throughout the globe experiencing a shift from the age old traditional method of harnessing water towards the high-tech equipment for its multiple usages. The use of water gained importance during the industrial development as water mills came into vogue and it was only in the second half of the 19th century that generation of electricity through water has been possible. In recent years, there has been a major upsurge in hydropower development globally and is recognized to be the leading renewable source of electricity generation, supplying 76 percent of all renewable electricity (World Energy Council 2015).

Hydropower projects represent a significant investment interms of national development like that of generating electricity, improving food security, plays a key role in climate mitigation especially reducing Greenhouse Gases and even mitigating flood and drought condition. Besides the national level objectives of electricity generation and irrigation, it has even been equally successful in bringing regional/local development thus changing the local socio-economic activities by modernizing local production, opening up the region and facilitating other forms of economic activities. From the past experiences, hydropower has been able to provide multiple opportunities for sustainable development ranging from local communities, regional, national and transboundary scale. Paradoxically, the local people are equally opposing for such development activities where local development objectives are

always subordinate to the overriding national interest which rapidly changes the landscape and ecology (Suhardiman 2014).

The construction of dam created vast destruction of forested area impacting the ecological setup and most importantly displaced hundreds of thousands of indigenous people. According to the report by WCD (2000), near about 40-80 million were displaced by the dam during the 20th century. Such socio-environmental implication resulted into increasing protest from grassroots to international level with further decline in the number of dams.

After a decade of acrimonious protest against the construction of dams, hydropower was able to regain its position on International donor agenda as a result of its enormous contribution in eradicating poverty and in achieving Millennium Development Goals (MDGs) beyond its traditional role of electricity generation especially in the developing parts (SWECO 2011; Wang 2012; Shrestha et al 2016). The major investors like World Bank and Asian Development Bank renewed their vision for hydropower development after the old debates on social, environmental and economic impacts of the projects. Whilst the new debate on sharing the costs and benefits of hydropower projects more equitably was recognised by World Commission on Dams (WCD 2000), International Energy Agency (IEA 2000), International Hydropower Association (IHA 2004) and even the emergence of integrated water resources has made a significant contribution towards it.

During the fiscal year from 2003-2008, World Bank approved 67 projects amounting $3.7 billion which was against the zero investment in the year of 1999 (Wang 2012). Despite being one of the key drivers of the country's growth, hydropower is no away from the severe environmental repercussions and social conflicts. The major challenge faced was to identify solution providing environmentally and socially

acceptable development projects. As a result, Benefit Sharing so far is recognised as a tool to identify the rights and issues of the local stakeholders through the measures of different stakeholder's participation, as well as a method to promoting cooperation among different stakeholders (Shrestha et al. 2016) thus recognizing the issues of equity and sustainability as a central of all debate (Khawas 2016).

In the historical past, hydropower is said to focus more on regional and national priorities where much of the benefits were enjoyed by the people of far off places whilst the actual beneficiaries borne much of the negative impacts. Therefore, a major effort to renew its vision was to shift the focus of developers from generating electricity towards the integration of water, land and resource management from hydropower development. On account of such ongoing critics over the developmental activities worldwide, the concept of Benefit Sharing is seen as a way of negotiating the win-win solution, whereby all the involved parties are to be the winners to access the derived benefits (Mokorsi & Zagg 2006) and claims that the derived benefits are the result of less conflict and greater voice, better ecosystem services and the greater opportunities for economic integration (Shrestha et.al 2016).

The increasing demand for energy combined with the common notion of being clean, renewable supported by the enormous volume of Himalayan perennial water has contributed a large number of hydropower projects in Sikkim with its boon and bane. The exploitation of water resources for electricity generation has so far considered being the key component to earn a large amount of revenue to fund its welfare programme (Candy et al. 2012). To maximize the positive impacts and mitigate the negative environmental, social and economic impacts, Benefit Sharing mechanism with its different measures and comprehensive policy framework guide the

developers to bring win-win solution by reducing the conflict and help to share its fair and equitable benefits to the mountain communities to achieve its sustainability goal.

1.2 Overview of Literature

Studies conducted and literature related to the chosen area of research work enable to identify various issues that may be considered relevant or closely similar to the undertaken study. The following section is an endeavour to focus on the already published works relating to this study. It includes the conceptual frame followed by the evolution of the idea of Benefit Sharing in the hydropower projects, experiences shared by the selected nations and the ongoing issues and concerns in India

1.2.1 Conceptual Frame

Some 30 years ago, the origin of Benefit Sharing has been traced in the two resolutions by UN 'The Agreement governing the activities of States on the Moon and other Celestial bodies (1979)[1] and the Convention on the Law of the Sea (1982)[2]' mentioned under Article 160, benefit to mankind proclaims to provide equitable sharing of financial and other economic benefits derived from the activities in the area through any appropriate mechanism without discriminating any section of the society. But the concept of Benefit Sharing came into prominence during the time of drafting of the Convention on Biological Diversity (CBD) at the Earth Summit in Rio De Janerio in 1992 ensuring fair and equitable sharing of the benefits to be done from the utilization of genetic resources. This was followed by drafting of Bonn

[1] For further information- http://www.unoosa.org/oosa/en/SpaceLaw/gares/html/gares_34_0068.html (accessed on 5th March, 2017)
[2] For further information- http://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf (accessed on 5th March, 2017)

Guidelines[3] on Access and Benefit Sharing in 2002 which was adopted by the 187 parties to the CBD stating that "benefits should be shared fairly and equitably with all those resource providers contributed for commercial use" (SWECO 2011).

Besides that, recognizing the need for the fair distribution of benefits to the affected communities in the developmental projects is mentioned in the Principle 3 of Rio Declaration on Environment and Development (1992) acknowledge that right to development must be fulfilled but keeping in mind the need of present and future generation. In other words, a project must ensure not only fair compensation for project-affected populations for all project related impacts but also a fair redistribution of benefits between the latter population and other segments of the society (Vincent Roquet et al. 2002).

1.2.2 Evolution of the idea of Benefit Sharing in Hydropower Projects

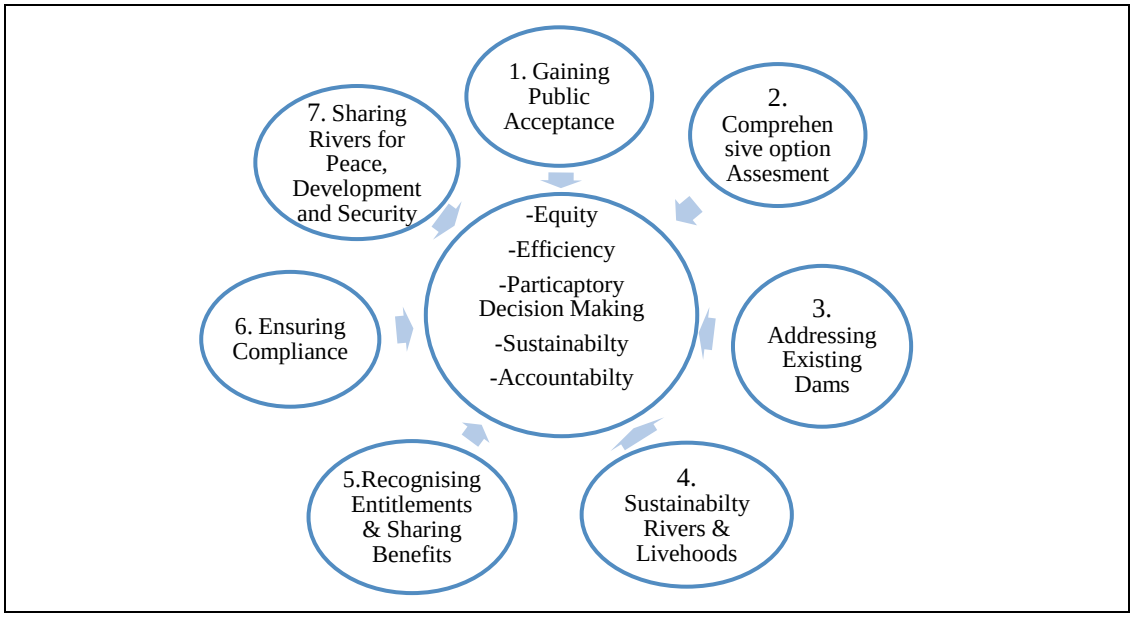
Milewski et al (1999) evaluated Benefit Sharing from dams taking few cases from Norway, France, Colombia, Canada and Brazil. The concept of Benefit Sharing started grooming up from the 1990's in some of the concerned nations with the provision to share direct monetary benefits such as preferential electricity rates, property taxes, revenue sharing and equity sharing. Similar mechanism was found in the national legislation of countries taken as case study which identifies as major steps to go beyond the simple compensation and mitigation measures to the communities located nearby project site. The agreement on Hydropower development signed since 2000 was negotiated for all affected communities thus covering several watersheds as well as communities located both upstream and downstream of the

[3] The Bonn Guidelines are non-binding documents adopted by Conference of Parties (COP) in 2002 which assist 187 signatory parties to implement and manage Access and Benefit Sharing (ABS) agreements and policy making.

dam. The study was a contribution to the WCD for the further study on the recurrent theme in the international debates.

The World Commission on Dams (WCD) formed in 1998 started examining the issues associated with the design and construction of hydropower development. As a result, (WCD 2000) formulated comprehensive guidelines which form the basis for many decision-making processes for dams around the world and constitute international soft law (Fast 2013). In the late 1990s, it acknowledge the importance of policy framework for sharing benefits to the local stakeholders derived from the use of natural resources to mitigate the social, cultural and economic impact. As such, importance has been given to the equitable and sustainable development of the projects as well as identified the new policy framework that includes five core point and seven strategic priorities with respect to the decision-making process.

Figure 1.1: Five Core Points and Seven Strategic Priorities of WCD



Source: World Commission on Dams, 2000, P. 214

As illustrated in Figure 1.1, out of the seven key recommendations in its strategic framework one of them centered upon recognizing entitlements and sharing benefits

which recommend that target of improving the livelihoods and quality of life should be embedded in the laws & policies of nations and the Project Affected Peoples (PAPs) should be among the key stakeholders of the dam through revenue sharing, irrigation & fisheries, flood control measures, electricity supply, jobs creation and training, community services and infrastructure development, household training and loans. Report also shows concern over the need of drawing the clear line between compensation-mitigation and Benefit Sharing mechanism.

IEA (2000) discusses the role and effect of hydropower projects in context to sustainability and based on the case study report from different representatives develops a set of International recommendation and guidelines for improving the socio-environmental practices in existing and future hydropower projects. IEA mainly focused on strengthening policy and legal framework to ensure environmental, social and economic issues in order to attain sustainable outcomes from the projects. Emphasis has been given on sharing benefits of both short term and long term with the local affected communities as they are considered to be key players in hydropower development. The review of literature indicates the following guidelines ensuring fair allocation of benefits based on participatory approach- i) Monetary transfer to regional and local institutions; ii) Mitigation and Compensation based on regional or state policies; iii) Decision-making process; iv) Employment opportunities & Capacity building programmes; v) Resettlement & Rehabilitation; vi) Public health and vii) Support reservoir fisheries and community uses of the reservoir. They see these as a way to achieve public acceptance of sustainable dam project or better to be termed as a responsibility rather than the government defined strategy for infrastructure development.

While addressing the criteria to identify the benefits which should be fitted in the mechanism of Benefit Sharing, Sadoff and Grey (2002) came up with the influential framework thus categorizing the whole mechanism into four types: i. benefits to the river (resulting from better management of ecosystem) ii. benefits from the river (increased food and energy production) iii. the reduction in cost because of the river (reduce tension between co-riparian states) and iv. benefits beyond the river (reduce cost due to greater cooperation and economic integration). They describe Benefit Sharing as a useful principle in bringing regional cooperation through sharing of financial, social and environmental benefits.

Subsequently, an attempt was made by IHA (2004) to provide sustainable guideline and protocol to provide a noble practice in hydropower development for sharing its benefits with the local communities. It is regarded to be major initiatives to move beyond mere compensation and mitigation measures to maximize the development benefits in more equitable and efficient manner thus working directly with local communities. Aiming to promote the sustainable performance of the hydropower project develop tools covering all aspects of sustainability- environment, social, technical, financial and institutional with its global applicability. It identifies the five sustainability scoring measures for monitoring the strength and weakness of the project so that project developers may rectify their flaws to achieve all forms of goal effectively and sustainably.

Table 1.1: Sustainability Scoring for Monitoring the Project

0 = Zero	No auditing/monitoring Programme or benefits solely distributed to shareholders and direct participants.
1 = Low	Limited benefits to the local community.
3= Medium	Positive and sustained economic benefits to the local community and broader region.
5= Highest	Auditing and monitoring Programme indicate positive and sustained economic benefits shared across the affected local community and the broader region.

Source: International Hydropower Association, 2004

As illustrated in the above table, the projects adopting a different mechanism to share its benefit to the local communities receive a higher point, whereas those project without the provision would be scored '0'.

Mokorosi and Zaag (2006) emphasize on the need of a framework which defines the equitable sharing of cost and benefits of the project. He highlighted that recognizing the rights of the project affected communities as great importance to the Benefit Sharing approach and identified four ways: a. Appropriate legal and policy framework, b. Public participation, c. Sustainable compensation measures, and d. Equitable access of derived benefits.

Egre (2007) provides a comprehensive overview of the issues over dams and its developmental activities. He review from experiences in both developed and developing nations to differentiate Monetary and Non-Monetary mechanism of Benefit Sharing based on policy framework implemented by the legislation of different Nations to share their benefits thus highlighting on economic rent given to the governmental bodies. In most of the cases, the mechanism was recently adopted so there seems less possibility to monitor the outcomes from the stakeholder's point of view which he regards to the most important to evaluate its practicality.

Cernea (2007) takes Benefit Sharing mechanism as an innovative tool to mitigate issues of resettled population. This article focuses more on the institutional (policy support) and financial capacity (economic rent) as a major source for the sustainable monetary mechanism. Rehabilitation and Resettlement are regarded as an opportunity to improve livelihood as compared to pre-displacement level if seen through the lens of Benefit Sharing. The author claims that the sharing of economic rent to both resettler and host community to the certain geographic zone around the project are not only available in the initial phase of relocation but it should sustain equally in the post-dislocation phase as a resource additional to compensation payments. The author believes that the political will and active legislation facilitates the effective implementation of the mechanism.

Hass (2009a) in context to this, highlighted the evolution of different practices of a sustainable way of involving local communities as development partners, supported with a mechanism for long term local and regional Benefit Sharing through different time period which has been explained through graphical representation.

Figure 1.2: Evolution in the View and Treatment of Dam Affected Communities

Source: Hass, 2009 P. 37

The above figure represents the evolution of Benefit Sharing from simply notifying and compensation in the pre-1980 towards the inclusion of all previous approaches along with long term share in the post-2000.

Hass (2009b), considered Benefit Sharing as a tool in bridging the gap between the National and Local development. The author claims Benefit Sharing being successful in sustainably developing and managing the large dams and most importantly equitably shares its benefits within its societies. The reason behind the mentioned success was due to the adaptation of Integrated Water Resource Management (IWRM) which treats water as economic, social and environmental goods.

Paiement & Martin (2009) identified Benefit Sharing as a process of negotiating the agreement which recognizes the rights and concerns of all the affected stakeholders in terms of property, livelihoods and non-material resources by the project and its associated infrastructure. They claim that projects should provide benefits in three phases- Before, during and after construction and most importantly highlighted that the benefits provided should be of sustainable nature valid atleast for 50 years till the dam reached its intended period of service. It states that the obligation to distribute income from hydropower development was first recognised in Norwegian laws as early as 1917 which involve environmental and social safeguard. He stated hydropower ensuring equitable and sustainable benefits especially in areas with poor and marginalized communities living in geographically remote and resource regions through better policy and legal protection.

SWECO (2011) reviewing the Benefit Sharing practices ten HPP from countries like Lesotho/RSA, Nepal, Costa Rica, Colombia, Norway, Lao PDR, Uganda, Egypt, Vietnam and Canada found five major types of Benefit Sharing Mechanism. It

asserted that the major enablers and triggering factors for the successful implication of various mechanisms depend upon i. Policy and Institutional Framework ii. Stakeholders and Public participation iii. Institutional capacities (Local/National) and iv. Social Impacts and Resettlement. The existing literature even claims Benefit Sharing to go beyond mitigation and compensation, where it focuses to create opportunity by enhancing community development instead of only mitigating impacts. It identifies Benefit Sharing as a responsibility of the project proponents to ensure local communities to improve socio-economic and environmental condition than pre-project through the elements of tripartite partnerships of government, proponents and local stakeholders.

Over the last decade, the concept of Benefit Sharing has been adopted in international financial institutions thus revisiting their policies, guidelines, safeguards and strategies where efforts to contribute to effective and sustainable hydropower development through an equitable sharing of benefits. [4] Besides the legal permits or license for the government agencies, the importance of obtaining Social License to Operate (SLO) has been acknowledged by the project proponents to address the demand and expectation from neighbourhoods, environmental groups and community members. Based on the case study, the four groups are assorted as the major beneficiary- Local people/communities, Regional (municipal, county/province), National/State and Transboundary (ibid).

Wang (2012) classified Benefit Sharing measures into two categories- Monetary (Direct) and Non-Monetary (Indirect). He considered Benefit Sharing to be the 'systematic effort made by the project proponents to sustainably benefit the local

[4] See: World Bank Hydropower Strategy-Directions in Hydropower (2009), ADB Safeguard Policy Statement (2009).

affected communities'. He further highlighted the importance of mechanism in providing equitable development, sustainability and smooth project implementation for hydropower development and even identified some of the strategies that Benefit Sharing mechanism should include in order to have its effect.

Shrestha et.al (2016) categorized five types of mechanism based on the existing policies to share the benefits provided by the hydropower to the local communities' i. Royalty mechanism ii. Equity investment iii. Support for local livelihoods iv. Investment in community development and local infrastructure and v. Environmental Enhancement activities. As mentioned by them, the first step towards regulating the mechanism is to clearly define what is and what not Benefit Sharing so that distinction can be made from the compensation and mitigation measures. They show concern for establishing the clear definition of Benefit Sharing that would differentiate it from the common notion of mitigation & compensation. Author conceptualizes mechanism with the comprehensive policy framework as an effective solution to the ongoing conflicts.

Suhardiman et al. (2014) examined the notion of Benefit Sharing articulated and applied in Vietnam, Laos, Cambodia and Thailand thus highlighting the strength and weakness of the current debate within the perspective of social justice, better governance system and processes. They illustrated four mechanisms applied in this region to support the resettled communities and also improve their livelihood condition such as Compensation for Resettlement, Corporate Social Responsibility (CSR), Community Development Fund (CDF) and Payment for Ecosystem Services (PES). Benefit Sharing has been a recent origin mostly in the context of compensating to the affected household and to some extent as payment for ecosystem services. In most of the cases, it is often used interchangeably with compensation thus describing

its implementation depending on the decision of dominant power structure and the companies seeking profits.

1.2.3 Experiences from Case Studies of Select Countries

The lesson learned from the past decades recognised hydropower to be the tool providing multiple opportunities to enhance local community, regional, national and trans-boundary development if properly planned, designed, implemented and maintained in a sustainable manner. Currently various types of mechanism have been adopted by the countries to equitably share its benefits derived from the hydropower projects in order to attain the objective of sustainability. As such the notion of Benefit Sharing has been articulated and applied at local, national and transnational level by most of the hydro-nations both literature as well as in practice. A number of countries around the globe have incorporated Benefit Sharing in their hydropower legislation, enabling local communities to benefit from the projects of the region. Following are the literature undertaken for the review to explore the experiences from the hydro-developer nations.

Milewski et al (1999) summarized few cases on Dams and Benefit Sharing from around the world and stated that the extent of Benefit Sharing largely depends upon the effectiveness of governmental bodies such as Brazilian legislation directed the developers with capacity above 10 MW to pay 6 percent revenue as a royalty to the government which is further divided into 45 percent of the revenue as a financial compensation to the affected states, 45 percent to the municipalities, 8 percent to Federal Electricity Regulatory Agency and remaining 2 percent to science and technology. The Colombian legislation under Degree 1933 made a clear framework to transfer overall 6 percent of its revenue. Out of the total 6 percent, 3 percent is given to the watershed agency, 1.5 percent to the municipality around the reservoir and

another 1.5 percent for the municipality of the upstream watershed. In case of Canada, equity sharing has been more common that is sharing both risk and profit from the project which can be rightly termed as cost and Benefit Sharing. The revenue devolved to the local watershed agencies and concerned municipalities must be utilized for protection of environment and infrastructure development. To summarize the case studies, they cited examples from different nations to share its monetary mechanism like resettlement assistance through village development fund in Laos; tax sharing in China; royalty sharing to the affected communities in Brazil; and equity sharing with the indigenous people in Canada.

Sinclair (2003), based on the field study, tends to visualize people's perception of the constructional work and available benefits thereby concluded with the unsatisfied note of people being unaware of the ongoing facts. One of the reasons cited by him may be their non-attainment in any educational system where they lack to understand the major issues emerged.

Upadhyaya (2006) reviewed injustice and inequities in the hydropower projects in compensating the affected communities and allocating benefits to the local communities derived from the use of natural resources thus drawing experiences from countries like Brazil, Colombia, Costa Rica, India, Nepal and United states. Examining the actual cases by various government provides an innovative practices to promote justice and equity by sharing benefits with upstream-downstream communities, post construction support of resettlement practices, fair and equitable use of resources, empowerment of affected people, awareness of rights and responsibilities, familiarity with national and international laws and most importantly the need of social science research in promoting equity and justice.

Hass (2009b) examines the cases of Benefit Sharing at the regional (African Nations) and International context, citing few examples from countries of Asia, Latin American and OECD. Initiatives for sharing the benefits directly with the local communities in some of the projects of Africa started since the mid of the 1990s but explored more extensively after the WCD Report, 2000. Drawing some examples from the African nation's experiences from two hydropower projects (Lesotho & Sierra Leone project) reveals the establishment of Lesotho fund for Community Development (LFCD)[5], Bumbuna Watershed Management Agency (BWMA) and Bumbuna Conservation Authority (BCA) that aims to ensure community development, employment generation and poverty reducing, rural electrification. Lack of institutional procedure and transparency to manage funds, people's participation, and no legislative provision for revenue sharing has been the reason. In case of China, legislation has further strengthened their policy in 2007 for equitable sharing of the revenue to the regional and local authorities for regional development. The developers are required to pay compensation to the resettled individual on a yearly basis for 20 years. Inorder to implement the Benefit Sharing in Vietnam HPP, the government initiated with drafting legislation and used local capacity building tool, based on in-depth study and discussion with all the stakeholders involved in the hydropower projects. Furthermore, the government introduced a provision that project developers were required to pay several taxes to the affected municipalities for the use of water and the impact caused by the constructional work.

SWECO (2011) recognized Lesotho Highlands Water Project as one of the case study areas of the report recorded to be successful in changing its emphasis to

[5] Lesotho fund for Community Development Co-financed by Lesotho Highlands Water Project and World Bank.

environmental and social aspects based on the guidelines, safeguards and principles of WCD as well as National legislation. Results from the various case studies undertaken by the SWECO indicate the environmental, social and economic damages were the major issues to the people living close to the project site. However, in the Nam-Theun 2 Hydropower Proejct, efforts were made by the developers to reduce the adverse impact through proper project design, extensive local participation as well as the implementation of related plans and programs. Except the Angostura and Costa Rica Hydropower projects, the involvement of all the stakeholders of hydropower development mostly the local communities were considered as a key successor as well as triggering factor for successful implementation of Benefit Sharing. In most of the Hydropower project taken as a case study by SWECO, there was no legislative framework that guides the developers to share the revenue for the welfare of the local communities living in the project site.

Jie et al (2013) made an effort to understand the effective mode and feasible plans for Benefit Sharing from one of the hydropower projects of Nujiang Prefecture in Yunnan China through interview and discussion with different entities. The author suggested that sharing the project benefits to those migrants relocated by the developmental activities is important for the project developers to value the cost of land, capital and labour. Hence, the cost of development should be able to acquire the development rights, resettling migrants, manage environmental issues and restore ecology. Initially, Chinese legislation made a framework to transfer tax as 60 percent for national government, 24 percent for provincial government and 16 percent for the county government. From the mentioned allocation of the budget, the local government is given the lowest amount of tax among all the recipients. The author

claims that 600 Yen paid to the reservoir migrants for the period of 20 year is insufficient to restore the livelihood condition in the post-settlement period.

Skinner et al. (2014) draws experiences on 'sharing of benefits' from the 11 hydropower projects of four continents, illustrating mainly on the monetary mechanism as a means of redistributing the revenue and establishing a partnership in order to gain social acceptability. Despite its contribution to development, the only risk which may be witnessed can be the subordination of the needs and aspirant of the local communities to the national and regional development where the fund paid to the government budget will be applied as general expenditure. From the reviewed cases, the level of royalties shared to the state ranges from minimum 2 percent to maximum of 15 percent whilst the weight of fund at municipal level vary between 1.9 percent of municipal budgets in Norway and 90 percent in Mali.

Acosta et.al (2014) based on study made a remarking statement about the unequal share as a major cause of conflict where the concerned communities of the watershed are not the same as those who benefit from the resources and the polluter are not the same as those who suffer. The statement given by him basically refers that local communities sacrifice their rights over the resources and become the victims of many social and environmental impact of the project whereas benefits from the hydroelectricity are mostly enjoyed by the people living far-off places. Most of the dams are build in the rural areas were villages are not connected with the electricity.

Shrestha et al (2016) from the study made over the Nepal hydropower development stated that despite the recent origin of the concept, Nepal is found at the forefront of developing the new and workable Benefit Sharing mechanism than other region and even setting an example for rest of the Himalayan nations. Like other hydro-nations, Nepal has also formulated policy and legislation to share its monetary benefits

provided by the hydropower developers but lacks similar efforts by the legislation or concerned government to frame its Non-Monetary mechanism. Based on the National Electricity Act 1992, the government of Nepal made provision of providing royalties to the electricity department. The collected royalties are to be distributed through the District Development Committee & Village Development Council as per the rules set by the Local Self-Governance Act of 1999. The other type of mechanism common in most of the hydropower projects shared according to the Securities Registration & Insurance Regulation 2008, public registered hydropower is allowed to regulate the 30 percent equity share by the local stakeholders. Besides the above-mentioned mechanism, so far no such policy has been formulated as a result the sharing of benefits depends upon the hydropower developers and the demand of the concerned stakeholders. Nonetheless, Benefit Sharing has been clearly enunciated in various policies and practices which are beyond the mere compensation and mitigation, Nepal is no away from the flaws which need to be further enhanced.

Table 1.2: Summary of Benefit Sharing Mechanism from Select Case Studies

Country	Dams	Construction Years	Monetary Benefits					Non-Monetary Benefits					
			Revenue Sharing	Equity S haring	Taxes	Electrification	Development Fund	Capacity Building and Training	Employment	Infrastructure	Irrigation	Resource Rights	Environment Enhancement
Norway	Glomma and Laagen	1945-1970	NO	YES	YES	YES	YES	YES	YES	YES	NO	NO	YES
Brazil Paraguay	Itaipú Binacional	1975-1984	YES	NO	YES	NO	YES	NO	NO	YES	NO	NO	YES
Mali	Manantali	1981-1987	NO	NO	NO	NO	YES	YES	NO	YES	YES	NO	YES

Sierra Leon	Bumbuna	1982-1995 2005-2007	YES	NO	NO	NO	YES	YES	NO	YES	NO	YES	YES
Colombia	Urra 1	1994-2000	YES	NO	YES	NO	YES	NO	NO	NO	NO	NO	YES
China	Four Dams in Hubei Province	2002-2008	YES	YES	NO	NO	NO	YES	YES	YES	NO	NO	NO
Nepal	Eighteen Dams	1982 till date	YES	YES	NO	YES	YES	YES	YES	YES	YES	YES	YES

Source: Developed by author from various sources, Paiement, 2009, P.21

International experiences over the Benefit Sharing mechanism reveal multiple choices of collection and distribution of revenue and other developmental funds from national to local level for socio-economic growth ranging from national to local level.

The above-mentioned cases from different hydro nations represent not a single approach but a series of mechanism adopted for the local, regional and national development thus showing the importance of hydropower interms of financial and infrastructural support to the local gained from the use of natural resources. The only risk witnessed can be the utilization of fund as general expenditure by the government which can be reduced with the help of people's participation.

1.2.4 Benefit Sharing around Hydropower projects in India- Issues and Concerns

The concept of Benefit Sharing in the Hydropower Development of India has not yet flourished much in comparison with other countries including the developing nations such as Nepal both theoretically (policy framework) and practically. The legal provision on water resources has been decentralized to the respective states whereby each state has its own responsibility to manage its water resources (Iyer 2007) whilst Hydropower Projects and Electricity is categorized under the concurrent list which means both the Central and State government are equally responsible for formulating the guidelines for better management of hydropower development in the country.

The past experience shows that the concept of benefit in regard to hydropower projects has been continually evolving. Initially, focused on the employment and GDP growth, which was followed by a Rehabilitation and Resettlement whereby emphasis has been given to compensate and mitigate the social and environmental impacts. Since two decades, the importance to optimize and provide more equitable sharing of the benefits has been recognised by the national laws (MacDonald 2009).

In light of the above-mentioned importance of laws and policies to frame the mechanism, the Electricity Act of 2003, directed the project developers to be consistent with other requirement of water for drinking, irrigation, navigation, flood-control and another public purpose along with the ultimate goal of power generation.

National Electricity Policy, 2005 besides emphasising on the full development of the feasible hydro potential in the country facilitating economic development includes comprehensive Environmental Impact assessment along with the implementation of Environmental Action Plan and the Rehabilitation & Resettlement scheme.

In 2008, a major initiative was made by formulating the Hydropower policy which recognised Rehabilitation and Resettlement to go beyond mere compensation for lost assets & livelihood for providing a better living condition to the project affected thus making them the long term beneficiary stakeholders. It directs the project developers to provide 12 percent of free power as royalty to the state government and 1 percent directly to the community as the Local Area Development Fund. The state governments on the other hand are required to share 1 percent from the 12 percent royalty received for the same towards ensuring income generation, infrastructure creation and welfare scheme to the affected areas. Provision of 10 percent electricity under RGGVY scheme to the people living within certain radius from the dams

site/power house based on the generating capacity. The project developers should provide 100 units of electricity per month to the PAFs for the 10 years from the date of commission of the project. More interestingly the policy outlines to boost the local employment through the special training scheme atleast for six months prior to the commencement of the construction.

Khatun & Cimato (2013) based their study on two hydropower projects namely, Nathpa Jhakri (1500MW) and Rampur (412 MW) along the Sutlej Basin. The hydropower projects of the state are either funded by World Bank or Asian Development. Both Monetary and Non-monetary benefits are provided through Local Area Development Fund. During the construction phase R&R, compensation, environmental restoration are provided through tariff system while in production phase it is undertaken by CSR. It follows the guidelines of National policy (R&R, Land Acquisition etc.) to share its benefits in which 12 percent free electricity is given to the state government, 1.5 percent for R&R, environment compensation and 1 percent free power to the nearby area. Most of the focus has been given to Project Affected Families in terms of mitigation. An indirect way of sharing benefit has been only through employment, training and local infrastructure.

Huber and Joshi (2013) draw upon the political influence over the hydropower development in Sikkim which is rather promoted as a means to ensure the financial autonomy of the state. To show the political priority on the hydropower development, she quoted the popular metaphor of Chief Minister ‘How the wealth (river) is washed away creating sorrow and how the development of dam has been successfully holding the wealth back’. The benefits mostly shared by the projects are compensation, monetary payments for leased land and mandatory development to the affected families.

Baker J (2014) drawing the experiences from the study of small hydropower development of Himachal Pradesh recognize it as a solution to the power shortfall as well as core economic development. Despite its socio-ecological effects, hydropower has been successfully supporting to generate the state revenue which further proliferates the developmental activities. The concerned government initiative to launch its own hydropower policy in 2006 not only support the developers but include provision for tangible local benefits seems to be quite appreciable. Taking into consideration the local area development and employment generation, the provision to share 1 percent of project cost and 70 percent of workers to be from the state were embedded in the policy. The policy thus directing the developers made a provision of 12 percent free electricity until 18 years which will be further increased to 18 percent for the next 10 years. Drawn from the field experiences, the author outlines the benefits ranging from the local, regional to global level. Social activism and strong governance have played a crucial role in negotiating the local rights. He claims that the voices raised against the constructional work were a medium to recognize the importance of Benefit Sharing by the developers.

Pant et al (2014) in context to the study of Teesta V project, attempted to figure out the contemporary dimension of Benefit Sharing along with the historical pattern, policy framework and most importantly about its practical implementation to the local affected communities and the grievances through the field surveys and in-depth interview. He found Benefit Sharing, Compensation & Mitigation and CSR are all lumped together due to lack of clear concept on 'Benefit Sharing'. It is said that sharing of benefits has mostly done through the common notion of mitigation and rehabilitation and further suggested the need for clear policy and legal provision to define Benefit Sharing along with a better institutional mechanism for proper

utilization of the funds for managing better environment and livelihood condition of the local community.

Mann (2014), draws on experience from Vishnugagh Pipalkoti HEP, India to show the contribution that infrastructure development mainly hydropower can make to the local development and considered well-developed strategy adopted by the developers being capable of addressing the grievances raised by the local work and provide a better solution through responsive Grievance Redress Mechanism and restoration of livelihood through livelihood promotion programme and training promotion. Established public information centre to share and disclose project information. As per the provision made in the Teri Hydropower project, 100 units of free power to each affected household per month for a period of 10 years, an industrial training school for upgrading the skills of local people for a better job opportunity as well as income restoration programme.

Khawas (2016) from the study made over the Hydropower basins in the Upper Teesta Basin, claims that the benefits received by the local people are the result of long drawn struggles and protests which are mainly demand based. He asserted that despite gaining international importance by long-term Benefit Sharing mechanism in the developmental activities, most of the people are aware of only compensation against of their lost assets, property and lives. The benefits identified in this region are in regard to revenue sharing, health, and education and peripheral development operated through Rehabilitation & Resettlement and Corporate Social Responsibility. He also shows the concern over the need for a conceptual and analytical framework to make the concept of Benefit Sharing more useful to all the concerned stakeholders.

1.3 Rationale of the Study

Despite enormous contribution to the theoretical frame on Benefit Sharing still, some of the hydro nations visualize this mechanism from the lens of mitigation and compensation. After reviewing numerous documents on the newly adopted mechanism for the economic growth, one can witness the lack of uniformity in defining the concept of Benefit Sharing making it difficult to determine the universally accepted benefits. To clarify this confusion, the study inculcates the ideas from the previous studies and the experiences from selected field to better define the mechanism of Sikkim. Most of the literatures with global experience widely documented the transferring of a monetary mechanism for instance; financing, Revenue sharing, equity etc. whilst little to know about the procedure for a non-monetary form of sharing its benefits. Similarly, Legislation of the country is considered as the enabler for Benefit Sharing where much of the laws and policies provide a framework for the monetary mechanism. Is it just because the provision of sharing monetary mechanism has been inscribed by the country's legislation or has been the former more effective than the latter to gain its popularity? As SWECO (2011) from the cases pointed that much of the non-monetary either depends on the demand of the community and the interest of the developers which often get ignored.

Almost two decades after the identification of new policy framework by the WCD (2000) and inspite of India witnessing evolution interms of sharing its benefits from the development projects somewhere still lacks the clear concept on 'Benefit Sharing Mechanism', which is rather seen as an extension of compensation and mitigation implemented through the measures of CSR, Rehabilitation & Resettlement.

The major critic witnessed in many of the developmental projects has been the uneven distribution of benefits and the centralized decision-making process which often creates a dispute between communities and developers. As evident from the past states that much of the benefits derived from the hydropower projects are enjoyed by the people living in the faraway places or the well to do households at the lowest level whilst local people especially the poor and vulnerable section are left with all the negative impacts. Therefore, a fair, equitable and transparent Benefit Sharing mechanism is considered as a key development opportunity to enhance social justice for the project affected communities which are a dire need in the present milieu. As Jones (2012) reclaims that despite high level 'global' gains, tangible benefits to local Indigenous groups remained scant at the grass root level.

Yet, hydropower development is politically promoted by the state government as the only way to ensure financial gain to the state (Huber and Joshi 2013) besides the primary objective of fulfilling the electricity demand. The state government has swiftly awarded 19 'run-of-river' projects to the independent power producer and the NHPC under BOOT & BOOM scheme for 35 years which is so called as 'liberalization oh hydropower projects'.

Dam-building in Sikkim has been highly controversial and contentious since last decades as a result of the growing domestic opposition which further supported by the global anti-dam organization against the direct impact on the surrounding environment and the indigenous people. As Khagram (2005) cited that 'the anti-dam struggles and anti-dam movement not only campaigned as the dam construction rather equally promoted different activities, influenced policies, strategies and the entire vision of development'. He further added that the anti-dam movement has been one of the leading forces for the growth of broader sustainable development. The very fact

of increasing energy demand for the developmental purpose on the one side and the emerging impact of such activities on the other side has been quite debatable. The question arises in this context is "How the Benefit Sharing mechanism able to address the balance between two aspects of Hydropower projects"? The measures taken by the hydropower projects in Sikkim under the Benefit Sharing mechanism extended through compensation, rehabilitation and mostly popularly CSR has become opportunity to improve their livelihood or a threat for creating disparity and tension among the local people.

The work attempts to evaluate the initiative made by the project developers/policy maker's interms of providing benefits and services to the local people which intend to improve the livelihood of the people living in the project. The study focus on critically analysing each of the mechanism in terms of what work has been done and what not thus contributing to the operational knowledge of Benefit Sharing. Besides that, efforts have been made to evaluate the outcome from each mechanism implemented to see its effectiveness to justify the rights of the people.

Inspite of numerous theories being developed and the guidelines framed in the past decades to share benefits from developmental activities especially, now the time has come to test its practicalities at the ground level. The study attempts to bridge the research gap on the Benefit Sharing mechanism around hydropower project of Sikkim.

1.4 Objectives

This study aims to understand how the implementation of mechanism in Hydropower projects acts as an opportunity/threat to development at local, regional and national level. In light of the above mentioned issues, the following objectives are framed:-

1. To critically review government policies, legal and institutional arrangements to understand the dynamics of Benefit Sharing in the hydropower sector in India and Sikkim.
2. To examine varying Benefit Sharing mechanisms of hydropower projects and their implications on socio-economy & environment of Sikkim.
3. To evaluate the result of "sharing benefit" from stakeholders or beneficiary point of view.

1.5 Research Questions

1. Are the developments Policies/Acts in India sensitive to the local Benefit Sharing?
2. How is Benefit Sharing in hydropower projects able to bring social acceptability to the hydropower development in Sikkim?

1.6 Rationale of Site Selection

In order to evaluate the process and practicalities involved in the sharing benefits gained from the use of resources around hydropower projects evolved over time in Sikkim and most importantly to analyse the outcome of each type of mechanism, the study site is restricted to three HEP as a case studies which is the sample representative of the hydropower projects of Sikkim. Selection of the project is based on two factors:

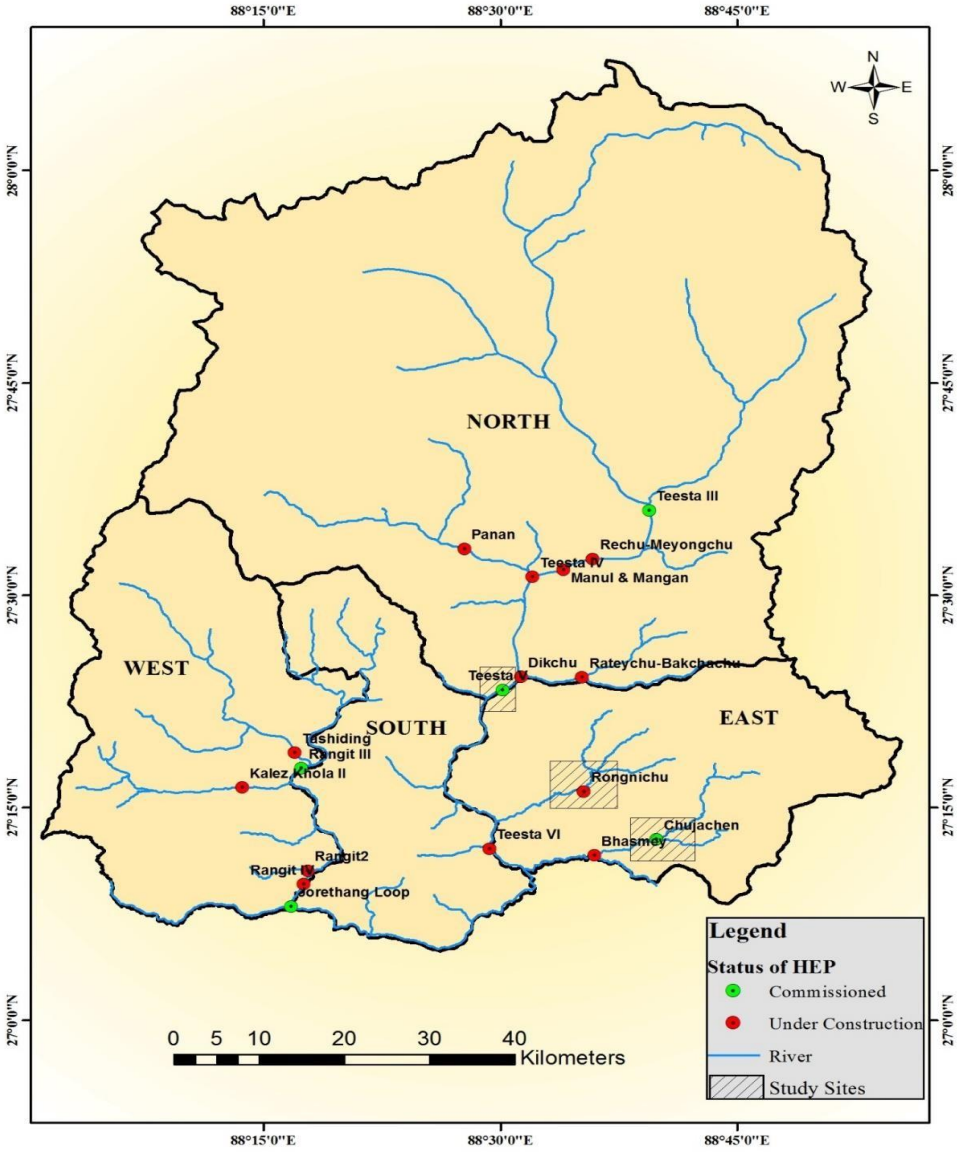
First, based on different stages of implementation of the project that is project under-construction and commissioned to better understand the mechanism implemented in the pre and post construction period applied in different time period.

Second, based on the implementing agency mainly focused on project under Independent Power Producer (Public and Private ownership) support the study to

understand developer's initiative for the development of the local communities. As quoted by Rao in 2014, 'Public sector companies in sharing benefits as better than the private sector companies'.

The Project represents the total capacity of 716 MW out of 3997 MW which accounts for 18 percent of the total installed generating a capacity of Sikkim. The selected projects were built after 2000 World Commission on Dams, the time of new debate on sustainable and equitable sharing the costs and benefits of the hydropower projects to the local communities (Shrestha et al. 2016).

Figure 1.3: Location of Hydropower Projects in Sikkim

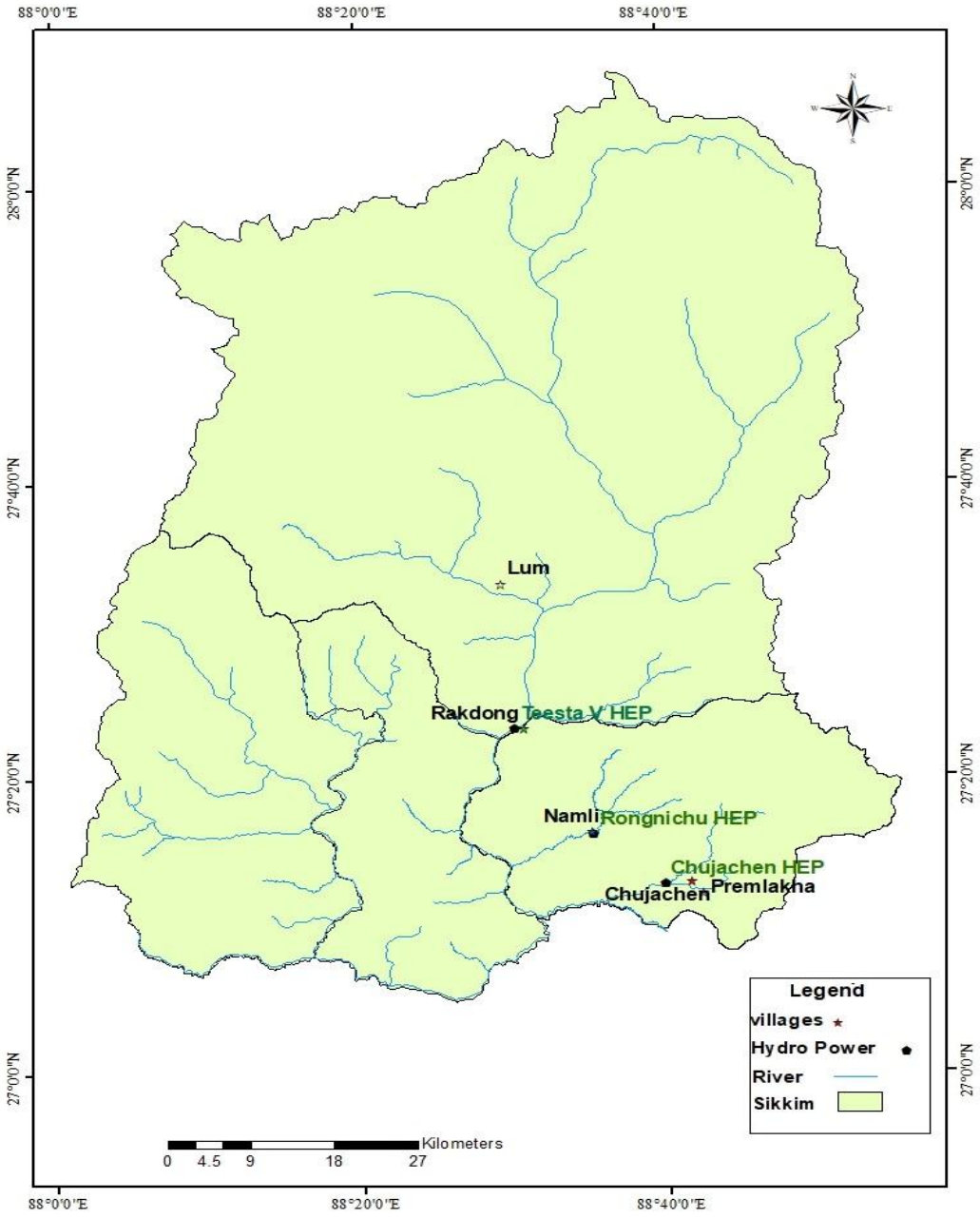


Source: Prepared by Researcher. March, 2017

Table 1. 3: Selection of Projects and Village Site for Case Study

Sl No.	Hydropower Projects	Ownership	Present Status	Implementing Agency	Survey Village
01.	Teesta V HEP 510 MW	Public	Commissioned	NHPC	1. Rakdong-Tintek 2. Lum
02.	Chujachen HEP 110 MW	Private	Commissioned	GATI Infrastructure	1. Premlakha-Subaneydara 2. Chujachen
03.	Rongnichu HEP 96 MW	Private	Under-construction	Madhya Bharat Pvt. Ltd	3. Namli

Figure 1.4: Location of the Study Area



Source: Prepared by Researcher. March, 2017

1.7 Methods of Data Collection and Analysis

The data for this study is acquired through primary and secondary sources using the qualitative approach. As said by the Creswell (2014), this involves the philosophical assumption that guides to explore and understand the meaning of individuals or groups ascribed in a flexible manner.

Yin (2003) argues that a major strength of case study data collection is the opportunity to use many different sources of evidence. The primary data has been collected especially qualitative explorative case study of Sikkim with the help of triangulation method which is considered to be the 'backbone' to gather the information from multiple sources for better validity and reliability of the data thus further providing a more balanced view of Benefit Sharing in hydropower projects of Sikkim. Kvale & Brinkmann, 2009 mentioned the knowledge is created by the interaction between interviewer and interviewee; we are 'co-constructors of knowledge'.

The methods applied for data collection is briefly explained below:

Table 1.4: Methods of Data Collection and Analysis

Field Based Research (Primary Source of Data)	**A.** Focus Group Discussion with local stakeholders as it offers flexibility to explore people's perception. FDGs will be conducted will be conducted with different homogenous groups, e.g. FGDs with local communities. B. Key informants Interview with semi-structured Questionnaire Three different stakeholders (Hydropower developers, Government officials, local stakeholders) for the collection of open-ended data. Stakeholders will be selected using snow ball sampling and purposive sampling. C.Participant Observation through the informal interview, direct observation help to discover discrepancies between what participants say

<table>
<tr><td></td><td>and what actually happens.</td></tr>
<tr><td>Review of the literature
(Secondary Source)</td><td>1. Review of Relevant literature on Benefit Sharing of different scale (International, national and regional).
2.Review of Environmental and Social Norms (National);
<table>
<tr><td>(1950-1970)</td><td>i. Land Acquisition Act, 1894
ii. Constitution of India, 1950
iii. Report of experts on Land Acquisition, 1967
iv. T.N Singh Formula, 1967</td></tr>
<tr><td>(1970-1990)</td><td>i. United Nations Convention on Human Environment, 1972
ii. Environmental Impact Assessment, 1977
iii. The Water (Prevention and Control) Act, 1974
iv. The Forest (Conservation) Act, 1980
v. The Environment (Protection) Act, 1986
vi. The National Forest policy (1988)</td></tr>
<tr><td>1990 till date</td><td>i. National Conservation Strategy and Policy Statement on Environment and Development, 1992
ii. Environment Impact Assessment, 1994
iii. Hydropower Policy, 1998
iv. Electricity Act, 2003
v. National Rehabilitation and Resettlement Policy, 2003
vi. National Rehabilitation and Resettlement Policy, 2007
vii. The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement, 2013
viii. Environment Impact Assessment, 2006
ix. Hydropower Policy, 2008
x. Companies Act, 2013</td></tr>
</table>
3. Review of State’s Acts and Policies;
i. Land Acquisition Act, 1977
ii. Sikkim Promotion on Local Employment Bill, 2008
iii. Hydropower Policy (Sikkim)
iv. Mega Hydro Electric Power Policy (Arunachal Pradesh), 2005
v. Hydro Electric Power Policy (Arunachal Pradesh), 2008
vi. Hydro Power Policy (Himachal Pradesh), 2006
vii. Hydro Power Polices and Guidelines (Uttarakhand), 2008</td></tr>
<tr><td>Project Report
(Secondary source)</td><td>1. MoU of Hydropower Projects.
2. Published and unpublished report and records maintained by the Projects
3. Project Report on Corporate Social Responsibility (CSR)</td></tr>
</table>

Table 1.5: Targeted participants for In-depth Interview and Focus Group Discussions

Government Officials	Local Communities	Project Proponents
* Local Development authorities * Officials from Energy & Power Department * Teachers/Headmaster, *Local Health officers	* Project affected (Direct/Indirect) ❖ Local youths ❖ Local Women ❖ Local NGOs ❖ Local political leaders	* Project Officials * Human Resource Officials * CSR Head * Environment officers

Table 1.6: Framework to conduct Focus Group Discussions

Site for FGDs	No. of FGDs per Project site	No. of Participant	Composition of Participants
Neighborhood of Dam	2	6 to 10 members in each group	Women Youth Men Officially designated disadvantaged group

To better understand the evolution of Benefit Sharing mechanism and the current practices in the development of hydropower projects in Sikkim, the study based on descriptive research includes the fact-finding enquiries through field based information (using techniques like semi structured questionnaire, a fielddiary, recordings) and extensive review of existing relevant documents. Research tools mainly used for this study are Focus Group Discussions with a different homogenous group of the society, raised the debate and further allow understanding the issues at much deeper level. Another important tool is the use of semi-structured interviewing and listen with predetermined questions in a conversational way thus creates a comfortable situation to better abstract the reliable information. This method of collection has been done with two section: a. the local people based on snowball and purposive sampling; b. the government officials and the project proponents which

further allow to abstract different views to ground truth the information. For the qualitative interview, people from different section of the society has been selected based on gender, race, ethnicity, sexual orientation and a socio-economic class focusing to bring different perspective over the concerned issues. Participant observation is another way of acquiring information through direct observation of the phenomena. The identification of the interviewees relied on snowball and purposive sampling depending upon the need of the study.

Use of triangulation method for both data collection and analysis allow the study for comparative analysis which further helps to ground truth the information from three different sources of participants (Government officials, local communities and the project proponents). The parameters of conducting four FGDs in each Hydropower sites with 6-10 persons taking into account different section of the society like that of the aged populace, local youth, women help to acquire a diverse range of detailed information. In the today's world, the issues of gender disparity have become the one of the major discourse of the research; taking note of women perspective to the study provides the current gender pattern of Sikkim's society and most importantly their participation in decision-making process.

The data acquisition based on the descriptive and analytical method from different sources using triangulation techniques thus reduce the bias generated from the tool and also use of secondary data to cross check the primary information. Furthermore, encoding the data allow in developing a theme from the sentence/narratives through several stages. The relevant information collected from different sources is represented through figures and tables. Besides that, the systematic mapping has been done through the use of ARC GIS 10.2.

1.8 Dissertation Outline

The dissertation is structured into five chapters which are briefly outlined below:

Chapter Scheme	Area of Work
Chapter 1	**Introduction** This chapter is an introductory part of the dissertation which includes the background of the study, overview of the literature, objective, research questions and methodology that guides the research work.
Chapter 2	**Benefit Sharing Mechanism in the Acts and Policies of Hydropower Development in India and Sikkim** This chapter focus on the first objective of the research, analyze the various legal and regulatory frameworks evolved over a period of time at the national and state level including the neighboring Himalayan states such as Himachal Pradesh, Uttarakhand and Arunachal Pradesh to investigate whether the state and federal government has compiled the measures of Benefit Sharing in the hydropower development. This Chapter critically analyses the acts and polices dealing with environment, land, water, electricity, hydropower etc that governs the hydropower sector.
Chapter 3	**Institutional Framework of Benefit Sharing in Hydropower Projects of Sikkim** This chapter aims to reveal the involvement of different institutions from central, state to local level for the development of hydropower projects and most importantly their role in supporting local affected communities to avail equal benefits from the project developers.
Chapter 4	**People's Perception around Benefit Sharing in Hydropower Projects in Sikkim** This chapter is based on interview with different stakeholders involved in the hydropower development to unveil the socio-economic and environmental benefit accrued by the local affected communities as well as issues and concerns relating to the current Benefit Sharing practice from both the public and private project taken as case study.
Chapter 5	**Conclusion** The final chapter attempts to bring everything together by providing overall conclusion of the dissertation.

Chapter 2

BENEFIT SHARING MECHANISM IN THE ACTS AND POLICIES OF HYDROPOWER DEVELOPMENT IN INDIA AND SIKKIM

2.1 Introduction

This study is driven by the following research questions: Are our policies/laws sensitive to the Benefit Sharing mechanism of the hydropower projects? In order to answer the question, the study explores the social and environmental norms identified by the planners and policymakers in the country's acts and policies to minimize the impact from infrastructural development considering the dam-building, identifying the rights of the affected community through equal and fair share of benefits gained from the use of natural resources within the national, regional and local level. The study analyses the nature of acts and policies on electricity, hydropower, water, land, environment etc. evolved over a period of time and the adopted measures to uncover how the prevailing legal system prioritize the rights of the concerned affected communities mainly the resource owner and the traditional users. It argues whether the state and federal government compile the implementation of 'Benefit Sharing Mechanism' in the acts and policies for hydropower sector of the current era despite being directed by the international organisation like World Commission on Dams, International Energy Agency and International Hydropower Association decades back to achieve the national goal along with human well-being. Reviewing various policy documents enables to trace the evolution of acts and policies implemented to safeguard the environment, indigenous peoples and the human rights. The qualitatively run research through cross-temporal and content analysis at country and the selective state has been conducted in respect to the emerging concept of Benefit

Sharing issues in the hydropower development, considering as one of the reasons for the resurgence of dam-building despite the rising transnational critics and opposition.

The whole chapter is divided into three broad time zones:

i. 1950 to 1970	Era of Innocent Ignorance[6]
ii. 1970 to 1990	Era Governed by Environmental Norms
iii. 1990 till present	Further classified into two time frame:
	a. 1990 -2000: Decades of Power Reform
	b. 2000 till date: Norms Governing Dams after International Recommendation

2.1.1 Concept of Benefit Sharing in India

The framework for Benefit Sharing, which Schroder (2007) projected as 'a device in the tool of justice'. Aristotle refers this as 'Commutative justice'[7] where each party gives one thing and receive another of the equal value mostly interms of compensation (ibid).

The concrete/clear concept of the Benefit Sharing has its origin way back in the Conventional on Biological Diversity (CBD) in 1992, whereby importance of sharing the benefits from the use of genetic resources have been embedded in the acts in order to justify the rights of the resource owner as well as the traditional forest user. The adaptation of benefit sharing in the early 1990's encourages the national action to take initiatives interms of legislative, administrative and policy to ensure fair and equitable benefits to the local and indigenous communities (Champanan and Wilder 2014). Despite the fact of India being one of the members of CBD 1992, the concept of

[6] The term is used by Choudhury (2013) to refer the hegemonic ideas of political leaders and the engineers which fails to recognize the rights of people to live with dignity as well as individual rights over the natural resources.

[7] Refers to fair compensation where both the parties i.e. resource owners and the users are bind into 'give and take relationship', focusing on equivalence of exchange.

Benefit Sharing to the local communities was introduced in 2002 only after the formulation of National Biodiversity Act. The act includes the clear definition of who constitute 'benefit claimers' and what comprise fair and equitable sharing on benefits[8]. Later in 2014, the Ministry of Environment, Forest and Climate Change through National Biological Authority provide guidelines that basically determine the financial obligation of user and how these benefits are to be shared.

Interms of natural resources other than hydropower projects, the mining industry constitute one of the major economic activities in the country with significant contribution to the country's economy. Nonetheless, the extraction of resources from the natural environment is no away from the environmental and social impact to the communities living in the vicinity of the mining area commonly referred as Project Affected Communities. Most of the country's minerals are located in the remote areas mostly inhabited by the economically weaker sections including the tribal population. The livelihoods of those populations are directly depended upon the surrounding natural resources and common problem associated with the mining activity is that of involuntary displacement. Among the extraction of natural resources, the concept of Benefit Sharing to the local communities has been initiated by the Union Minster with the establishment of District Mineral Foundation (DMF), as per the provision of the Mines and Minerals (Development and Regulation) Amendment Act (MMDRA), 2015. DMF is the Non-profit organization established in all districts where mining takes place and precisely works for the interest and benefits of the local communities of the mining areas, funded by the developers. The MMDR Act claims that the fund for the local area development to be more than the royalty paid to the state

[8] The section 21 of the National Biological Diversity Act 2002 identified Benefit Sharing as Royalty, Joint Venture, Transfer of Technology, Building Institutional Capacity, Payment of Monetary and Non-monetary benefits.

government and includes the provision of sharing 26 percent of net profit with the affected communities.[9]

How to share the derived benefits from the use of the resources remains an important consideration for every concerned authority over the last few decades (Champan and Wilder 2014). Regardless of international recognisation of Benefit Sharing in the hydropower Sector, the concept of Benefit Sharing as a whole is yet to be emerged in India's Hydropower sector.

Let's examine the country's acts and polices which justify the rights of the project affected comminutes living in the vicinity of the project area and figure out how Benefit Sharing has been recognized in the country's legal framework.

2.1.2 Role of Dams in India's Economic and Social Development

India ranks third in the world after China (23,842), USA (9265) and India (5102) interms of number of dams and with regard to installed capacity, India ranks sixth after China, Canada, Brazil, USA and Russia (ICILOD 2017). Although most of the dams constructed in the past mainly served for irrigational purpose and domestic water supply, at present it is mostly driven by the hydropower generation accounting a significant share in country's economy. The 1897 hydropower plant of small-scale near Darjeeling was the beginning of hydroelectricity generation in the country (CEA 2016). Since then the energy generation through hydropower project witnessed rapid development with technologically sound infrastructure. As Iyer (2003) pointed out that dam-building in the past was dominated by the single disciplinary body of engineering which fails to make environmental and other issues as one among an

[9] See: Centre for science and environment, "Sharing the wealth of minerals: Policies, practices and implication'
http://cseindia.org/content/sharing-wealth-minerals-policies-practices-and-implications
Accessed on 14th December 2017

integral part of the planning and hence recommended to form a multi-disciplinary[10] body in the planning process.

The hydropower development in India which was traditionally dominated by the public sector unit underwent changes with the onset of electricity reform of the early nineties. Since the reform in the electricity act, private developers emerged as a major player enabled by policies of federal government (Choudhury 2013).

Rising from the foothills of the snow-capped mountains, rolling down the valleys and curving through the plains upholds the capacity to brighten the world. According to the CEA report July 2017, India has already constructed 4877 dams throughout the length and breadth of the country's river and 313 dams are expected to commission soon. The re-assessment study conducted by the CEA during 1978-1987, estimated the installed capacity of 148701 out of which 145320 from the scheme above 25MW (CEA 2016). In 2003, preliminary feasibility report undertaken by CEA estimated 50,000MW of hydroelectricity generation from 162 dams in 16th states of the country (ibid).

2.2 Regulatory and Policy Framework Developed in the Post-Colonial Period

The post-colonial period which Choudhury (2013) mentioned 'the era of innocent ignorance[11]', driven by the icons of 'progress' and 'modernity' through the development of science, technology and the western style of engineering served as hegemonic ideas of development. The urgency to accelerate social and economic development, the utilization of the water through construction of dams considered as epitome which symbolizes the national pride and unity (Biswas and Tortajata 2001).

[10] Refers to the integration of various subjects like Agriculture, Environmental Sciences, Economics, Sociology, Law etc. and not only considering the engineering perspective for dam-building process.
[11]Nirmalaya Choudhury burrowed the term 'innocent ignorance' coined by Ramaswamy R Iyer in the fifth Water Dialogue organized by the German Development Institute (DIE) Bonn International conference (2004) on Renewable Energy, Germany.

The India after colonial freedom is said to enter into 'Nehruvian Era', the period influenced by the political and economic ideology of Jawaharlal Nehru[12] who visualized the economic and social development as the central role of federal government (Karambelkar 2017). Therefore, instigating the Hydraulic mission[13] for the progressive economic oriented growth through massive dam building was sponsored by the government through public funding (ibid). The post-colonial authorities were actively engaged in promoting large scale developmental activities to remedy the plugging issues like flood, drought, crises in agricultural production to feed the growing population and power[14]. Therefore, to overcome this problem the dam-building became the pivotal strategy of country's First and Second Five Year Plans (1950-1961).

The combination of political and technocratic vision legitimizes the massive multi-purpose projects of the post-independent plans and policies. As a section of India's planners considered dams to be economically viable enough that outweighs all the associated disadvantages[15]. Khagram (2005) argued that multipurpose river valley project infact satisfy the interest of the 'dominant coalition of proprietary classes' including rich farmers, industrialists, skilled professional and the political elites. In the same time, the vulnerable and poor section of the society finds difficulty in accessing the electricity either due to physical constraint or the higher tariff (Dharmadikary 2008). Singh (1997) too claimed that the infrastructural development

[12] Jawaharlal Nehru, the first Prime Minister of Independent India and the prominent leader of Indian National congress. Nehru believed dams as a tool for fastest growing economy and river to be means of developing 'New India'.

[13] The term is used by Surabhi Karambelkar in her work to indicate the interest of political bureaucrats in prioritizing the water resources for hydropower development as a major source for country's economic growth.

[14] Retrieved from http://shodhganga.inflibnet.ac.in/bitstream/10603/96403/9/09_chapter%202.pdf, titled "Large Dams, Irrigation and Development in India: A Traditional of Engineering Basis". Accessed on 31st July, 2017

[15] See book reviewed by Amalendu Misra (2008), "*Taming the Waters: the Political Economy of Large* Dams *in India*" by Satyajit Singh, 1997. Accessed from http://dx.doi.org/10.1080/030066159908438728

always favoured few pockets of bourgeoisie class at the cost of the majority of the weaker section of the society.

The proper implementation of the infrastructural projects largely depends on the political and administrative system. As Khagram (2005) outlines the complexity of managing the resources, with a large degree of jurisdictional overlapping in the federal distribution of authority[16]. During the initial period of the hydraulic mission, the inability of the domestic opposition, further aggravated by lack of social and environmental norms and absence of non-governmental organization fails to alter the politically supported large dams (ibid). The leaders of decolonization era were inspired by the vision of 'Making the New India"[17] through the construction of the big dams (Singh 1997).The policy adopted thereafter planned to harness the natural resources to rejuvenate the development strategy suppressed under the long colonial nation but terrifically fails to address the social, human and environmental cost (Hemadri et.al 1999[18]). The painful irony, in fact, was the way viewed by the political leaders[19] and policy-makers as the legitimate and inevitable cost of development to be accepted by the society in the interest of the nation (ibid).

[16]The Constitution of India divided the power governing the water between the central and state government. As per the Entry 17 of the State list, the State government is authorized to rights within boundary but the state list is subjected to the provision of Entry 56 of the union list, federal government to take charge of managing the inter-state river system. See Iyer (2003), '*Water: Perspectives, Issues and Concerns*'; Khagram (2005), '*Dams and Development: Transnational struggles for water and powe*r'.

[17]This era marked dam-building synonyms to the nation-building whereby the new democratic government symbolizes it a way of breaking colonial chains of under-development.

[18]See; 'Dams, *Displacement, Policy and Law in India*'. This is a working paper prepared by Hemadri, Mander & Nagaraj as a contributing paper to the World Commission on Dams (1999).

[19]The government at the centre plays a multiple role from planners to financers, developers, decision-makers etc.

2.3 Legal Framework Governing the Dams from 1950 to 1970: The Era of Innocent Ignorance

The Constitution of India adopted by the constituent assembly on 26th January 1950 is the fundamental law of the country. It is the country's first supreme law developed in the post-colonial India that not only defines the framework of the basic political principles but also lays down several frameworks that describes the fundamental rights, power and duties of the government and its citizens. After independence, the main focus was to modify and repeal the unfriendly laws and policies in tune with the constitution of India. The new amendment (article 39 b, 48 and 49) empower the state to own the natural resources of the community and utilize accordingly to improve the living standard of its people.

The constitution of India includes two articles that protect the rights of the private property. The amendment tried to approach the question of how to handle property and pressure by balancing the Right to Property with the Right to Compensation in the case when the private land is acquired by the state government for the public purpose. The article 19 (1) f upholds the 'Right to Property' stating that every individual have rights to acquire and dispose the land of its own, only limits when the land required to serve the public interest or to protect the Schedule Tribe. Whereas, the article 30 and 31 stated that 'no person shall be deprived of is property save by authority of law' and articulate compensation to be paid to the owner inreturn of the acquisition and requisition of the private property for the public purpose.

The only legislative framework in India that governed the acquisition of land by the government for the public purpose and later by the private companies during the Post-colonial era was the Land Acquisition Act of 1894 (LAA). The legislated acquisition act of the colonial period formed the basis of all the central and state laws

for more than a century for the compulsory acquisition and compensation payable to the landowner. The LAA of 1894 only provides cash based on the market value to those who is entitled with the ownership of the land. Hence, the law of compensation interweaved with the law of acquisition. This act fully authorizes the government to acquire the land for public purpose and the collector was given the charge to determine the amount of compensation of the land acquired. The public purpose includes the provision:

i. Planned development or improvement of existing village site;
ii. Land for town or rural planning;
iii. The provision of land for residential purpose to the poor or landless or residing in the areas affected by the natural calamities ;
iv. Land for public purpose infrastructure such as education, health or any other public offices.

Later, the same provision of LAA 1894 was extended for the private developers acquiring the individual as well as government landholdings. For e.g. the massive land acquisition by the private companies in the hydropower sector after the country's 'Energy Liberalization'. The LAA enacted during the British colonial period was retained in the same form by the Republic government until the new act known as 'The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement act' was formulated in the year 2013 by Ministry of Law and Justice.

During the post-colonial era, the dam-building was equated with the development and displacement was seen as unavoidable. The then Prime Minister while addressing to the displaced villagers by the Hirakud Dam in 1948 says '*If you are to suffer, you*

should suffer in the interest of the country'. With the passing of time, the institutional thinking started to emerge slowly in the central bodies.

At the central level, protecting the livelihood condition of the affected communities especially the project displaced families by the developmental activities started with setting up the expert group constituted by the Ministry of Food, Agriculture, community Development and Cooperation in 1967 empowered to deal with the land acquisition process. The report prepared by the expert committee recommended to avoid the good agricultural land for non-agricultural purpose and identified the rehabilitation as a moral compulsion of the state.

The other was the process of policy formulation addressing the development induced displacement began in 1967 with the T.N Singh formula which stipulated employment to one member from the displaced family in the project, an addition to the process of rehabilitation. Though it was the major initiatives put-forth to restore the living condition of only the displaced families but later in 1986, the standing committee of pubic enterprise reviewed and abandoned the formula because there was surplus of unskilled workers from the displaced families, unable to absorb mainly when the project became technology intensive.

Table 2.1: Summary of Norms Governing the Developmental Activities

Year	**1894**	**1950**	**1967**	**1967**
Title	Land Acquisition Act	Fundamental Rights	Report of the group of experts on Land Acquisition	T.N Singh Formula
Main Actors	Department of Land Resources	Constituent of India	17 member committee set up by the Ministry of Food, Agriculture, community Development and cooperation	T.N Singh

Issues	Land acquisition and compensation	Fundamental rights of the citizens of India	Review of land acquisition	Compensation of families displaced by public projects
Implications	Cash to those who have a direct interest in the title to such land	Article 19 and 31 ensures the 'Right to property' of the private landholders and 'Right to Compensation' if the state government acquire the land for the public purpose	Avoid the good agricultural land for non-agricultural purpose and identifies the rehabilitation as a moral compulsion of the state	One member of the family would be employed in the project

Source: Author's self compilation from various sources

Analysis: The massive dam-building in the post-colonial era was mostly triggered by the need of water supply to irrigate the land and then power demand. On the one hand, the dam building was seen as a country's need by the planners and policy makers whilst on the other side, the growing domestic voices against the project got politically subjugated. From the government perspective, the benefits from the project are shared with the entire population of the country as a whole and not to a certain targeted communities.

The LAA 1894 and the fundamental rights of the Indian Constitution empower the government to acquire private land on the *Principle of Eminent Domain* for public purpose and paid cash compensation inreturn as a cost of land. The fundamental rights which ensure the Right to individual property get its limitation when comes the public purpose. The major confusion in this context is: What actually the public purpose refers to? If it was for the development of the country then what sort of developmental activities it could be said when the large numbers of peoples get displaced, whose rights over the natural resources had been snatched, livelihood was disturbed and what they got inreturn was the cash compensation to the landowners and negative externalities in the name of nation building.

The decision of the concerned authority to use natural resources for building massive dams was a sole objective to serve the public purpose[20]. The WCD report of India's dam-building argued the LAA of 1894 for being incapable to define what constitutes the 'public purpose'. The only right it gives the local communities was the cash compensation paid in return of the life-sustaining resources (WCD 1999). The LAA of 1894 provides only 'reasonable compensation' to the landowners and not 'actual value of the land' and the process was not based on the consultation (Singh 2016). The resettlement of the displaced peoples and the environmental impacts were not recognised in the planning process, it was completely dominated by the engineers (Iyer 2003).

Many a times cash compensation was found unproductive as most of the people spend in buying goods and within a year or more, those people's livelihood condition were worst than the condition in the pre-project. Both the act and articles couldn't recognize the inability of the cash compensation to restore the livelihood of the landowners. The most painful irony was that the legal scope of compensation under the LAA 1894 and the constitutional rights remain outside the purview of landless agricultural laborers, businessman and those sharing the common property (Duflo and Pande 2005). The state government is empowered with the constitutional rights over the ownership of the natural resources and its utilization. The article does not provide a comprehensive national agenda to protect and conserve the environment whereas interms of social, the article of the Indian constitution only ensure one-time compensation as a cost of the land. The study suggests that the rate of compensation should be based on 'replacement value' rather than the 'market value'. Huber (2012)

[20] The term Public Purpose used by the laws for developmental activities has always being contested by many for being ill-defined as there is no legal basis on which the civil society can challenge the government way of interpretation (Huber 2012).

criticized the LAA for 'lacking to clearly define the rate and duration of compensation to be paid for the acquired land'. The rate of compensation in most of the cases was defined by the concerned authorities under the state government.

As Choudhury (2013) noted that Indian legal system leans more towards government rather than securing individual land rights. Bandyopadhya et al (2002) argued that the Irrigation report of 1969 outlining the technical and administrative issues with no word on social and environmental issues. The elimination of environmental and social cost from the 'cost-benefit'[21] analysis was said to be benefiting the vested group those of landlords, politicians and the bureaucrats where nature and its people always being subjected to invasion (ibid).

This era which Choudhury referred as "innocent ignorance" lasted from Independence till the early seventies i.e. 1950-1970 wherein development was measured interms of modernity and technological efficiency that the country possesses. The construction of the dam was justified for being appropriate to maintain the overall sustainability and regain its economic prosperity at a minimal time with increased agricultural productivity and power supply. To fulfil the national interest the voices raised were subjugated and deliberated as a sacrifice for the nation-building process. To conclude, the adopted acts and policies of this period strengthened the developers than those ensuring to justify the rights of the people living in the vicinity of the project.

2.4 Environmental and Social Norms Governing Dam-Building from 1970- 1990

The urgency to accelerate the national development in the neo-colonialism through the dams became the lightning rod for many of the so-called environmentalist and

[21]The cost-benefit analysis popularly used to evaluate the projects of the sixties as a successor of colonial's internal rate, which author draws it as susceptible to manipulation and errors resulted into underestimation of the cost and overestimation of the benefit.

socialist activists group (Biswas and Tortajata 2001) progressively empowered by the transnationally allied NGOs with globalizing norms on the environment, indigenous peoples and human rights (Khagram 2005). A remarkable fact is against the development approach which was drowned before the seventies started accumulating its stand in the country. The environmental and social impacts neglected till 60's now started grounding its importance in the national acts and policies.

2.4.1 Institutionalizing of Environmental Norms

United Nations Conference on Human Environment (UNCHE)

The action-oriented agenda to protect and improve the environment in continuation with all sort of enjoyment of life formally entered into the domestic arena in the early seventies with India attending the 1972 United Nations Conference on Human Environment (UNCHE)[22], Stockholm. The conference popularly known as the first global environment meet introduced the notion of 'Sustainable Development'[23], further resulted into the establishment of United Nations Environment Programme (UNEP). The Principle 22 of the agenda holds the 'State to cooperate for developing International laws and compensation for the victims of pollution and other environmental damages within the jurisdiction of the state and if required may also go beyond its limitation'. The conference asserts that 'it is the fundamental rights of the man to live in the environment that provide a life of dignity and well-being'. The

[22]The first major UN conference on the Human Environment attended by Smt. Indira Gandhi, emphasising the protection of environment and directed its major to prepare its report on human environment eventually leads to the formation of National Committee on Environmental Planning and Co-ordination (NCEPC) headed by Dr. Pitamber Pant, consisting of 14 multidisciplinary experts engaged in review, formulating policies and programmes pertaining to the environment, advised government and developers for protection of the environment, assisted research relating to improvement of environment and collaboration with international agency for protecting environment along with development.

[23]The report of the United Nation conference on the human environment (1972) outlines the emphasis of social and economic development as essential for improving the quality of life, safeguarding the benefits from the use of renewable and non-renewable resources to both the present and future generation through careful planning and management.

Stockholm Declaration mandates all the country to enact the laws and policies that specifically deals with the environment.

The participation of the then Prime Minister of India in the UNCHE creates a landmark in the field of environment conservation which resulted into inception of the National Committee on Environment Planning and coordination (NCEPC) in 1974 in the Deaprtment of science and technology to monitor vaious plans and policies (Choudhury 2013, Khagram 2005), later it led to the formation of Ministry of Environment and Forest in 1985. Prior to this, all the river valley projects were examined by the Central Water Commission based on technical feasibility and economic viability, before the acceptance by the planning commission (CWC 1998). The committee through their recommendation included environment in the county's acts and policies.

Prior to the 1970s, the constitution of India as promulgated in 1950 did not make specific provision to deal with the environmental pollution. It was only after 1970s, comprehensive environmental laws were enacted by the Central Government.

The Water (Prevention and Control) Act

The enactment of Water (Prevention and Control) Act in 1974 by the Ministry of Environment and Forest was largely influenced by the UNCHE of 1972. This Act was the India's first attempt to deal with the issues pertaining to prevent the environment. Later in 1978 and 1988, the Water Act was again amended to conform to the provision of Environment (Protection) Act of 1986.

Objectives of the Water Act;

- An Act to prevent and control water pollution and maintenance and restoration of wholesome of the water to carry out the purpose aforesaid.

- To establish Central Pollution Control Board at the National level and State Pollution Control Board in every state to implement the act and monitor the quality of the water.
- Prior to the establishment of industry, project proponent should get prior consent to State Pollution Control Board and comply with the condition laid to protect reserved forest and see that forest land is not used for non-forest purpose. The Act is the significant piece of legislation to conserve forest from any sort of development activities.

Silent Features of the Act;

- According to the provision of the act, the hydropower developers have to follow the statutory regulations of the act.
- The developers are required to get approval from MoEF to change the productive land to the non-forest purpose for the developmental activities.
- For the diversion of forest land, the developers have to pay the present net value of the diverted land as well as bear the cost of compensatory afforestation on a degraded land which must be twice the size of the forest land use for the construction such as Catchment Area Treatment, Muck Management Plan to Department of forest and Fisheries Management Plan to the Department of Fisheries.

Environment (Protection) Act

The Environment (Protection) Act (EPA) was enacted in 1986 under the provision of Article 253 of the Constitution. The EPA was formulated out of the need for environmental protection as well as to fill the gaps in the area of environmental hazards. This Act empowers the Central Government with a power to take all such

measures as it deems to be necessary for protecting and improving the quality of environment and controlling the environmental pollution.

- To implement the decision made at the UN Conference on Human Environment of 1972.
- Act as an umbrella legislation enacted under the article 253 of the Indian Constitution which legally empower the federal government to undertake 'measures' for the 'protection and improvement' of the 'quality of the environment'.
- Institutionalized the importance of setting an environmental standard and creation of authorities' for environmental protection.
- Statutorily empower the central government to undertake site visit including inspection of plant and equipment (under-section 10) and undertake punitive measures with a power to 'closure, prohibition and regulation of any industries' (under-section 5) in case of violation of any of the rules.

National Forest Policy

The National Forest Policy enunciated in the year 1988 is the most important policy of the recent times. After the independence, the country underwent several economic changes mainly between 1952 and 1988. This policy was amended for the second time after the Independence of the country and first forest policy which recognised the role of local people in forest protection and management. It aims to improve the livelihood condition of those communities directly depended on the forest products. This was a major shift from the commercial concerns towards the ecological role of the forest as well as participatory management. The ultimate objective of the policy is to preserve, protect and develop the forest with the principle aim to balance the ecology and maintain environmental stability.

Some of the objectives/features of National Forest Policy are:

- Aims to ensure environmental stability and maintenance of ecological balance (human, animal and plants).
- Greenbelt should be raised in the industrial area.
- No forest product and the land are used without the prior approval of the Management Plan by the concerned authority.
- The rights and concession for the use of forest is bonafied to the communities specially the tribals and the poor people.
- Includes the provision for careful examinations by the specialists from the standpoint of social and environmental cost and benefits prior to the diversion of forest land for any non-forest purpose.
- Constructions of developmental activities (hydropower projects) are obliged to be in consistence with the needs for conservation of trees and forest. Further, the policy directs the developers to allocate fund from their investment budget for the compensatory afforestation.

Environmental Impact Assessment (EIA)

Prior to 1977, the provision for the assessment of environmental impact of the project was conducted by the Central Water Commission which legally stated in one its chapter that 'in few of the cases, the impact of the project become irreversible henceforth there is a need of careful evaluation'.

In India, the EIA was initiated by the planning commission in 1977-1978 as an administrative requirement for the river valley and Hydropower projects. Earlier, it was examined by the Department of Science and Technology, Government of India

but later in 1985 Ministry of Environment and Forest is given the charge of environment clearance.

The formulation of EIA was driven by the objectives to predict the social and environmental impacts at an early stage of project planning and designing, finds ways and means to reduce the uncertainties, adverse impact and shape the project that suit the local environment. It is participatory and systematic in nature that ensures to cause minimal environmental impact and bring maximum economic and social benefits such as reduce cost and time at the time of implementation. Henceforth, EIA became the major part of decision-making in the water resource projects. The Monitoring of the project was carried out by the inter-departmental process, clearance from different department prior to the construction and direct to prepare Detail Project Report and Environmental Management Plan. In case of any unsatisfactory, the project would be rejected. The developers of big projects were required to submit clearance by simply submitting the information by filling up the questionnaire or checklists.

2.4.2 Institutionalizing of Social Issues in the Acts and Policies

Institutionalizing environmental and social norms in the developmental activities had a different start. The environmental issues were addressed from the early seventies several acts and polices aiming to protect the environment. On the other hand, the social impact which displaced thousands of people and many losing their livelihood for the sake of nation-building was legalized from the late eighties and nineties with the process of drafting national policies on rehabilitation and resettlement.

Iyer (2007), a senior government official in the 1980s, observed that: "Sometime during the 1980s thinking began in the Government of India on the formulation of a policy to govern all future cases of displacement. The subject was discussed many

times in the inter-ministerial meetings at the level of secretaries, and at meetings of groups of ministers". (Choudhury 2013).

The important landmark in the process of land acquisition for the dam-building was the provision of *land-land* compensation introduced in the final order of Narmada Water Dispute Tribunal Gazette in 1979. The tribunal of 1979 included a separate clause as '*Direction Regarding Submergence Land Acquisition and Rehabilitation of Displaced persons'*.

The Clause XI (IV) 7 of the tribunal gazette includes the provision to give agriculture land to those oustees whose more than 25 percent of land is acquired. The allotment of the land was based on the prescribed ceiling in the state concerned and the minimum of 2 hectares (5 acres) to displaced family. Unfortunately, provision did not cover those without legal entitlement of land or were dependent to the common property resources or those persons providing services to the rural population.

The growing awareness among the civil society played an active role in the development of policies addressing social issues led by the massive dam-building. By the late 1980, the civil society of India had organized itself and voiced its demand for proper rehabilitation policy. First attempt of rebuilding the livelihood of the DPs started in 1985 by the Central Ministry of Welfare appointed committee to prepare when the National Commission of Schedule Caste and Schedule Tribe found 40 percent DPs/PAPs were tribal. The committee suggested that the policy for rehabilitation should also extend the non-tribal communities as an integral part of every public and private project (Fernandes 2008).

The other major initiative to restore the rights and drafted a policy against the 'technical' and 'bureaucratic' dominance to the developmental activities was the

formulation of National Water Group (NWG) in 1987 consisting of researchers, academics, social activists, individual and the project affected peoples involved in drafting National Policy on Rehabilitation. The NWG criticized the inadequate compensation and R&R measures outlined by the LAA 1894 to restore the livelihood of the displaced populace. It argued that the policy addressing the issues should take into consideration the 'constitutional and human rights' based on the norms of providing 'fair and equitable' justice to the concerned communities and the resource owner and involve of the affected community in every stage of the project from planning to commission and even afterwards (ibid). The formulated NWG draft policy recommended that the affected community enjoy 'fair share in the benefits with the project developers' and clearance of comprehensive options assessment through 'public debate' & 'holistic approval' (ibid). The pre-condition for 'approval and clearance' of the project is to be done taking into consideration both environmental and social aspect. The draft policy contest the prevalent notion of 'temple of progress' and 'nation building' approach at the cost of irreparable loss borne by the economically deprived section of the society. The draft policy further added the expansion of defining the project affected families to include landless and the users of common property resources who are directly dependent on the natural resources and lost their source of earning to the dam without any sort of compensation.

The cash compensation implemented under the LAA 1894, one job policy scheme of T.N Singh formula 1960s and the land to land compensation by the Narmada Water Dispute Tribunal final order of 1979 were the major initiative made till the end of 1980's.

Analysis: During 1970-1990, there has been a gratifying resurgence of good environmental and social sense in the country. The efforts to safeguard the

environment through the institutional, legislative and political strength had dominated the national acts and policies ensuring to control the impact and improve the quality of the environment. The hydropower developers were required to get clearance from Central Pollution Control Board, State Pollution Control Board, Ministry of Environment and Forest for the construction of the project. Whereas, the rights of humankind to live peaceful and dignified life finds its way through country's institutional and legislation much later after the acronimous voices against the massive hydropower development. Interms of social aspect, the earlier cash compensation based on 'market value' continued to dominate the process of acquisition.

Khagram (2005) pointed out that the domestic criticism and opposition against the inadequate compensation, R&R and the marginalization of PAPs initiated decades earlier spread at large since the 1970s and reached its prescriptive stage in the eighties and nineties. The cash payments to the affected families as a compensation have been criticized by many for not being the durable livelihood assets as the local villagers specialized in the agricultural sectors, their low educational attainment and lack of business experience keeps them outside the 'market system'. The tribunal formed for the Narmada Water Dispute suggested the land-land compensation only includes the people legally titled the ownership of the land. It was from the mid of eighties, the issues around the rehabilitation process started growing among the civil society organization drafting rehabilitation policy which got legalized a decade later in 2003.

The other changes that emerged within the two decades of time frame:-

1. 44th amendment of Indian constitution on 1978, cease the fundamental rights over the property and become only statutory rights with the abolition of article 19 and article 31 i.e. Right to Property and addition of article 301 A.
2. Abandoned of one job policy to the project displaced families by the Standing committee on the Public Enterprise in 1986, stating that the project with modern technology was incapable to accommodate the increasing number unskilled displaced population.

The Stockholm conference was a turning point for many of the countries including India for the sustainable development with more concern over the deteriorating and diminishing plants and animals. What was lacking in Indian case was the similar concern over the humankind whose life had been disturbed by the hydropower projects. It was from the last phase of the eighties where social issues started accumulating its stand as a result of the civil society. The process of acquisition had always remained in controversy as well as resulted into growing voices over the large hydropower projects and its impact but the norms only cater the displaced landowners. Furthermore, repeal of one job scheme under the T.N Singh policy, the livelihood of the displaced families become more vulnerable.

The era of 1970s and 1980s was marked by the Environmental acts and polices which highlights important issues that needs to taken into account to protect the environment in relation to development projects. However, it lacks the rationale of protecting the environment from the perspectives of livelihood restoration. The study finds no connection between the need of the environmental protection and people's access to the natural resources and how such access plays an important to those who depends

their livelihood on those resources. The formulation of act and policies were intended to achieve the target of environment protection rather than the need to protect the environment to restore the people's livelihood, caused by the so called developmental activities. To conclude, it would better to say that government was the major beneficiaries from the project other than developers thus conceptualizing 'development for all'.

2.5 Acts and Policies in the Hydropower Projects: 1990 Onwards

The last phase of 20th century and the initial phase of 21st century underwent massive transformation in the country's policy sector. The first half of the given time frame i.e. 1900 to 2000 was the period ruled by 'liberalization' in the power and economic sector of the country whereas the later half was influenced by the 'international recommendation' in the acts and polices of the hydropower projects.

2.5.1 Decades after Power Reform

Since the late 70s and 80s, country's power sector was plagued by the commercial losses and the burgeoning subsidy burden as the supply of the electricity fails to meet the growing demand (Singh 2006). To overcome the crisis, the concerned authority adopted a major policy and regulatory changes since the early 1990s (ibid). Due to the declining financial state of SEBs and the ongoing shortage in the country, the power sector undergoes reform whereby the government amended the act attracting private investors in power generation, proposed as one possible solution to improve SEBs financial status (ibid). In short, the financial distress faced by the electricity sector was the reason behind the power reform (Choudhury 2013).

To bring economic development with the limited resources in presence of an uncertain climatic condition was the biggest challenge to the country (Singh 2006).

Henceforth, the era of 90's has been ruled by the policy of 'liberalization' and 'economic reform' through Public Private Partnership (PPP) as one of the routes for the development of infrastructure projects to promote economic growth, address environmental concerns and bridge social disparity (Patil et.al 2015). This policy encourages the private players in building the new hydropower development in increasing production to meet the energy deficiency of the country. Despite the known fact of policy being flexible to the new investors, has our policy equally supportive enough to safeguard the people and its surrounding environment from being exploited to the profit-oriented massive projects and the nation's interest has to be looked. In this context, Choudhury (2013) argued that the reform in the power section as a 'new constituency' within the country emphasizes on the economic growth through supply and the success and failure of the target thus dominating the policy discourse.

National Conservation Strategy and Policy Statement on Environment and Development, 1992

The Policy is formulated by the Ministry of Environment and Forest of Government of India that insitutionalised the environmental and social norms in the country's acts and polices. The policy emphasise on blending of traditonal ethos and the scientific knowledge for the effiecnt use of natural resoucres that integrate environmnetal concerns with the developmental imperatives. The main objectives and the addressing mechanism of the policy can be seen below:

Objectives
• Ensure sustainable and equitable of use resources for meeting the basic needs of the present and future generation without causing damage to the environment.
• Effort to avoid displacement of local people; where it is unavoidable, necessary measures should be taken to ensure rehabilitation.

• Ensure development projects are correctly sited so as to minimize their adverse environmental consequences.
• To conserve and nurture resources through environmentally sustainable development and management of ecosystem.
Addressing Mechanism
• To carry out EIA of all developmental project right from the planning stage and integrate it with cost-benefit consideration and cost of environmental safeguard should be an integral part of the project.
• Incorporate Comprehensive National Rehabilitation Policy which ensures the oustees to be economically better off than the pre-project.
• Prior environmental clearance should be made mandatory for project of certain size and ecological area.
• Empowerment of NGOs, active participation of citizen group, women and village level institution in planning, implementation of developmental plans and programmes.

Source: Ministry of Environment and Forest, National Conservation Strategy and the Policy Statement on Environment and Development, 1992; Government of India

Environmental Impact Assessment, 1994

To achieve the objective outlined by the rule 5 of the Environment (Protection) Act 1986, the MoEF legalized the Environmental Impact Assessment for the 29 developmental projects in the country. The notification of 1994 mandates the project proponent to get environmental clearance from the concerned authority approved by the Ministry of Environment and Forest, Government of India.

The major provisions under the EIA notification 1994 are:

1. Project Proponent are required to submit report on Environmental Impact Assessment, Environmental Management Plan and summary on project report along with filled questionnaire or checklist as per the guidelines issued by the Central government.
2. The report to be evaluated and assessed by the Impact Assessment Agency and if required it may consult multi-disciplinary expert committee. The committee

has full rights of entry and inspection of the site at any time during or after the construction of the project.

3. No Objection Certification (NOC) from the State Pollution Control Board.
4. The final report to be made available subject to the public interest.
5. Public hearing to be conducted in case of project involving large displacement or having severe environmental impacts.
6. Comprehensive rehabilitation plan, if the project is likely to displace 1000 people.

The EIA notification of 1997 notifies the involvement of the public as one of the fundamental principle of environmental clearance of the project, ensuring fair and equitable participation in the decision-making process. The procedure of public consultation provides an opportunity to the affected communities to express their views and concerns for the proposed projects. This concept was legally introduced as a 'Public Hearing' whereby State Pollution Control Board is charged to conduct the hearing in the project affected areas. The details of public hearing and the role of SPCB are discussed in the following chapter.

Hydropower Policy, 1998

The year 1998 has been a landmark in the history of Hydel project for developing its own policy particularly dealing with the hydropower projects issues. For several decades, the norms governing the hydropower development and its emerging social and environmental aspects were monitored from the cumulative perspective of developmental activities as a whole or as water infrastructure. Since the ongoing public sector projects were unable to meet the desired capacity, hence, the private sector investment was encouraged through the IPPs and joint venture from 1990s. The government projected hydropower projects as environment friendly, capacity to

develop the remote and backward areas and the life expectancy of 50 years help to conserve the non-renewable resources.

The provision under the new policy of 1998 is as follows:

1. The project proponents are directed to give 12 percent of free electricity from the total generation as compensation to the state government.
2. The Hydel projects with the investment cost above 100 crores to opt for techno-economic clearance.
3. The project within the capacity of 100 MW to be selected through the MoU between the developers and the state government and investment cost of 250 crore project would be exempted from the CEA techno-clearance.
4. The procedure for land acquisition and R&R were seen as a constraint to the developers, hence, the State government is given the responsibility of acquiring the land for the projects at the compensatory rate fixed by the state's land acquisition department.
5. The State government is given the responsibility to address the Rehabilitation and Resettlement issues, cost to be borne by the project proponents.

2.5.2 Reform in the Policy Sector after International Recommendation[24]

The controversy over the adverse socio-environmental impacts of the projects and several drawbacks identified from the adopted plans and policies promises to safeguard the livelihood condition of the affected communities. The concern over the issues of such infrastructure eventually led to the formation of National Working Group (NWG) in the late 80s by the civil society and eventually drafted a policy for Rehabilitation and Resettlement measures which was referred till 90s. The ministers of the government in consultation with civil society drafted numerous policies but was

[24] Basically refers to the comprehensive guidelines suggested by the World Commission on Dam, International Energy Agency and International Hydropower Association.

criticized and never materialized into the practical policy applicable to the whole nation (Fernandes 2008).

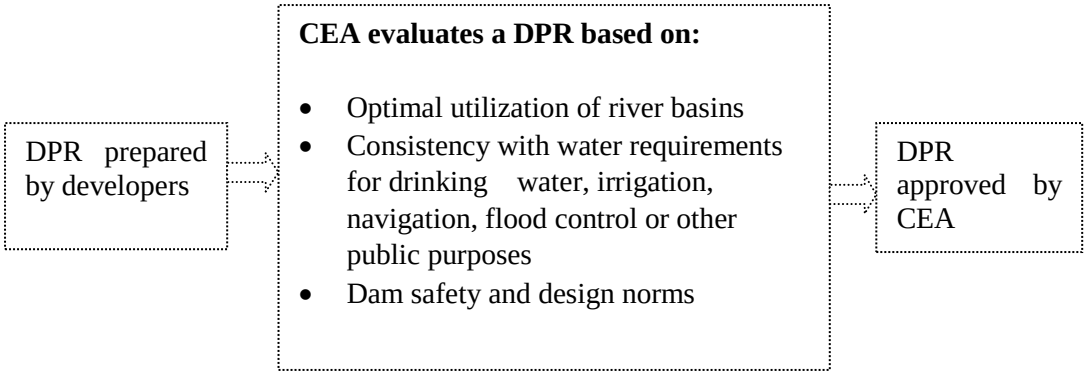
The major acts and policies modified and implemented from early 2000 is said to recognize the people and its environment as a core of all the developmental activities. The withdrawal of financial support by the major international agency and the recommendation on the strategy by the international institutions has helped the hydropower projects to be back in its earlier position. The regain in the position was the result of several changes throughout the country's legal and regulatory framework. After the institutional recommendations: What is the position of the social and environmental norms in the formulated acts and policies? Has the people's priority received equal importance to that of national interest of electricity and revenue generation? Reviewing the policy from early 2000 would help to measure the adopted mechanism of sharing the benefits, highlighting on the major issues like; R&R policy, Hydropower Policy 2008, Land Acquisition Act 2013, Environmental Impact Assessment and Social Impact Assessment.

Electricity Act, 2003

On 2nd of June 2003, the Ministry of Power adopted a new legislation called the Electricity Act guided by the Electricity Act 1910, Electricity (supply) Act 1948 and Electricity Regulatory Commission 1998. The enactment of electricity was felt as a need by the central government after the reform in the energy and power sector during the 1990s. It was formulate to consolidate the laws relating to generation, transmission, distribution, trading and use of electricity, promoting competition in the sector by inviting private investors, establish Regulatory Commission and Appellate Tribunal for the electricity.

According to the section 8 of the act, mandates the developers to prepare Detail Project Report (DPR) which is verified by the Central Electricity Authority (CEA) before grating approval for the project.

Box 1: DPR Approval Process



National Rehabilitation and Resettlement Policy

Development-induced displacement and the consequent human rights violation of the displaced population was the most shameless reality throughout the country which lasted for several of decades (Dutta 2007). The construction of dams and displacing of the indigenous people said to demonstrate the inseparable relation of human rights and development as an abuse of human rights is principally the development issues (ibid). It was only from the late 1980s civil society voiced its demand for the proper resettlement policy.

National Rehabilitation and Resettlement policy is formulated by the Ministry of Rural Development of Land Resources of the Government of India based on the principle on Article 21 of the Indian Constitution that protects the citizens 'Right to Life', ensuring to improve the living conditions of the affected population than before the project. The first policy was adopted in 1993. It was revised and updated in 2007 and later in 2013 along with the act on land acquisition process.

The major objectives of the policy 2003 are as follows:

1. To minimize displacement and to identify least displacing alternatives;
2. To plan Resettlement and Rehabilitation of the Project Affected Families (PAFs) including the needs of the tribals and vulnerable communities;
3. To provide better standard of living to PAFs;

In order to fulfill the above mentioned objectives, the following provisions are adopted:

• The NRRP is applicable to project displacing 500 families or more in plain area and 250 families or more in hilly areas.
• Broadens the definition of 'agricultural family' and DFs/PAFs thus covering both landowners as well as landless peoples such as manual labour, rural artisans, tenants of agricultural lands and Common Property Resource users whose source of livelihood is affected by the process of acquisition.
• .PAFs whose house has been acquired by the project to be provided house site with an area of 150 m^2 in rural areas while 75 m^2 in urban areas which is free of cost and one-time assistance for house construction only to the BPL families..
• The land loser shall be provided agricultural land or cultivable wasteland to a maximum of one hectare of irrigated or 2 hectares of unirrigated land along with a one-time grant of Rs. 10000 per ha. For land development and Rs. 5000 per family for agricultural production.
• One time grant of Rs. 10,000 to the landless family comprising of rural artisans/small traders and self-employed person.
• 20 days of Minimum Agricultural Wages (MAW) for a year and an allowance of one-time financial support equivalent to 750 days of MAW for 'loss of livelihood' for those losing their entire land.
• The landowning family losing their land partially and has become marginal, small as well as the agricultural/non-agricultural labourers shall get financial assistance equivalent to 500 days, 375 days and 625 days.
• As a part of R&R benefits, other than cash and land to land compensation, the policy ensures to provide necessary training facilities for self-employment.
• The Government guarantees to provide basic facilities like drinking water, electricity, schools, dispensaries and transportation route to the resettled area.

The major objective of NRRP 2007 includes:

a) minimizing displacement by avoiding certain categories of land;

b) ensure to improve the living standard and sustained income of the project affected families by offering shares in the project as well as value of compensation based on replacement cost;

c) focused on public participation to build proper and effective resettlement plan;

d) To integrate rehabilitation concerns into the development planning and implementation process;

The following provisions are identified to meet the above mention objectives:

• The project developers are required to undertake environmental impact assessment and make the social impact assessment report mandatory to get clearance from the MoEF to be reviewed by two non- official from social science and rehabilitation experts shall be nominated by the Central Government
• Emphasizes on the social impact assessment based on the principle of active participation, capacity building, and provision of public health to improve the living standard of the displaced people.
• SPCB given the authority to conduct a public hearing to disclose the SIA report to the participants in the hearing, limited to few number of project affected people.
• The criteria set for applying this policy was reduced to 400 or more families in the plains and 200 or more in the case of the hilly/tribal area.
• Since the provision of 12 percent royalty turned the state government into stakeholders, the NRRP 2007 emphasise the need to turn the project affected persons also as stakeholders not only in the construction but continued even in the operation phase.
• Each affected nuclear family whose house has been allocated an additional 10 sq.m of land and one-time financial assistance to the BPL category.
• Employment scheme to one person of the affected family or may outsourced contracts to the groups and cooperatives of the affected persons and one-time compensation of 500 days minimum agricultural wages to the tribal people for losing rights over forest produce.

The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement act

The Act of 2013, enacted by Ministry of Law and Justice obliges the acquisition to be done in a participative, informed and transparent manner so that the land losers are provided fair compensation. The principles adopted in this act 'ensure to improve the social and economic status of the oustees in the post-acquisition with the adequate provision of R&R scheme and make them partners of the project'. As per this act, at least 85 percent of prior consent is required from the project affected families for private developers to go ahead. It completely prohibits the acquisition of irrigated multi-cropped land. The 'Requiring Body'[25] is denied of acquiring the land directly from the owner so the land acquired by the concerned is either leased out or licensed. The project affected family was broadly defined as a family whose livelihood has been affected by the project and has been staying prior to three years from the date of notification of acquisition consisting of landowner, landless, share-croppers, artisans, agricultural labourers, tenants, gatherers, fisher folks, boatman.

Under this acquisition act 2013, the developers shall pay 'amount of compensation including solatium, any enhanced compensation ordered by the Land Acquisition and Rehabilitation and Resettlement Authority or the Court and interest payable thereon and any other amount determined as payable to the affected families by such Authority or Court' (GoI 2013).Interestingly, sub-section 6 of section 46 under this act quoted that 'the land purchased through the private negotiation on or after 5th sep 2011 is acquired for the project within three years of purchase, then the 40 percent of the compensation to be paid to the land owners.

[25] "Requiring Body" means a company, a body corporate, an institution, or any other organization or person for whom land is to be acquired by the appropriate government.

Under section 101 states that 'if the land acquired remained unutilized for more than 5 years from the date of possession, the land shall be returned to the original owner or the legal heirs or to the Landbank of the appropriate government. As per the earlier NRRP 2006 and the Act of 2013, the amount of compensation paid for the land and other assets to be based on the market value. In this context, the principle emerged from the public debate opposed the practice of 'market value' or 'present depreciated value' to be restored with the 'Replacement value' of the assets as the later helps to deal with economic loss, social and psychological trauma and trained then to get job in the projects (Fernandes 2007).

Table 2.2: Summary of Elements of Resettlement and Rehabilitation Entitlements for All the Affected Families

Elements of R&R	Provisions	Beneficiaries
Provision of housing units in case of displacement	• Rural Areas: House shall be provided under Indira Aawaj Yojana or pay the cost of the house. • Areas: constructed house not less than 50 sq mts in plinth area. Denial to opt the house will be compensated with one-time financial assistance not less than one lakh fifty thousand.	• The affected family without homestead land and has been residing in the area continuously for a period of not less than three years preceding the date of notification.
Land for Land	• Minimum of one acre of land in the command area of the project. • Provision of land equivalent to land acquired or two and one-half acres.	• Each affected family owning agricultural land in the affected area and whose land has been acquired or lost. As a consequence of the acquisition or loss of land, been reduced to the status of a marginal farmer or landless. • Scheduled Castes or the Scheduled Tribes
Choice of Annuity or Employment	• Provision of a job at least to one member per affected family after providing suitable training and skill development in the required field.	• Project affected families

	• A one-time payment of five lakhs rupees per affected family. • Annuity policies that shall pay not less than two thousand rupees per month Per family for twenty years.	
Subsistence grant for displaced families for a Period of one year	• Monthly subsistence allowance equivalent to three thousand rupees per month for a period of one year from the date of award. • Amount equivalent to fifty thousand rupees and relocated in a similar ecological zone, so as to preserve the economic opportunities' language, culture and community life of the tribal communities.	• .Each affected family which is displaced from the land acquired. • Scheduled Castes or the Scheduled Tribes
Cattle shed/petty shops cost	• The one-time financial assistance of such amount as the appropriate Government may, by notification, specify subject to a minimum of twenty-five thousand rupees.	• Each affected family having cattle or having a petty shop.
One-time grant to artisan, small traders and certain others	• The one-time financial assistance of such amount as the appropriate Government may, by notification. • A minimum of twenty-five thousand rupees.	• Each affected family of an artisan, small trader or self-employed person or an affected family holding non-agricultural land or commercial, industrial or institutional structure in the affected area has been involuntarily displaced from the affected area due to land acquisition
Fishing rights	• Allowed fishing rights in the reservoirs in such manner as may be prescribed by the appropriate Government.	• Affected families from fisherfolk communities.
One-time Resettlement Allowance	• Resettlement Allowance" of fifty thousand rupees only.	• Each affected family

Source: Government of India, Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013.

Environmental Impact Assessment 2006

EIA, an instrunment that enables the action to minize the impact from the project. The EIA 2006 was an improvement on the 1994 EIA, drafted under the sub-rule (3) of the Rule 5 of the Environment (Protection) Rules, 1986 for imposing certain restriction to protect the environmnet.

Table 2.3: Some of the features included in the EIA Notification 2006

Sl no	Issues	Features
01.	Coverage and Scope	• To speed up the clearnce procudure, the process granting the environmental clearance was decentaralised to State Level Environmental Impact Agency. • The Project undet the category 'B' is required to get apprroval from the State level whereas other project by the Central government (MoEF). • The proejct developers were required environemtal clearance proir to constructional work but alloweded to secure land.
02.	Comprehensive Option Assessment	• The site clearance and final clearnce under the EIA 1994 was replaced with the four stage of environmental clearance process: Screening, Scoping, Public Consultation and Appaisal.
03.	Public Consultation	• An important process to include locals affected people as a stakeholder ascertain to take views and concerns of the locals in the decision-making process. • Participants narrowed down than the previous EIA 1994 notification, silent on Civil society organisation in public hearing
04.	Monitoring	• The notification mandates the appraisal committtee to undertake site visit before and during the time of clearance.

Source: Ministry of Environmnet and Forest 2006

It is basically an instrunmnet that enables the action which will resut into least environmental impact to the area of project. The EIA was made obligatory to all the river valley and Hydropower projets. The EIA 2006 was an improvement on the 1994

EIA that decentralised the process of environmnetal clearnce to the State Level Environmnetal Impact Agency.

Hydropower Policy, 2008

The policy notified by Ministry of Power, Government of India on March 2008 and exists till date. Despites its main objective to harness the hydroelectricity through both the private and public developers in the hydropower sector, it ensured that rehabilitation must go beyond the mere compensation for lost of assets and livelihood with effective R&R policy aiming to providing a higher living standard to the PAPs by making them stakeholders in the project as one of the beneficiary from the early commissioning of the project.

The other features in the policy are as follows:

• The policy mandates the project developers to prepare the adequate Detailed Project Reports and undertake all the pre-clearance and statutory clearance.
• Ministry of power recognised the large scale displacement of the locals as a biggest challenge, thus drafted its own R&R policy.
• It ensures to channelize the revenue directly to the local communities that would increase the income and develop the infrastructure on a sustained and continued basis.
• Both the developers of Mega project (private and public) are exempted from the customs duty for the import goods, income tax holiday for 19 years, pay sales tax and local levies.
• The State Government is authorized to award the project to those developers which fulfill the criteria set forth.
• The policy defines project families to those ‘whose place of residence or other property or source of livelihood" has been affected by the project.
• The compensation is given only to those families living in that area prior to two years from the time of notification under section 4 of Land Acquisition Act which includes landowners, landless, agricultural and non-agricultural labourers and squatters.
• The provision of over and above the 12 percent free revenue, the new hydropower policy mandated the developers to provide 1 percent extra free power to the state. Project Affected People have been made long-term beneficiary stakeholder by way of 1 percent free power from the total generation by the proponents and 1 percent from the total revenue received by the State Government as Local Area Development fund.

• For the project affected family, the policy directs the developers to provide 100 units free electricity per month through the Distribution Company for the period of 10 years. It is predicted that the PAF will consume only one unit a day and the cost of unused electricity to be paid in cash or kind as per the rate determined by the SERC[26].
• The project authorities are required to bear the loan of 10 percent from the state government's share of the RGGVY[27] scheme to the villages within the certain radius from the dam sites/powerhouse site.
• . The additional provision includes a scholarship to the meritorious students, an extension of medical facilities, marriage grants, subsistence grants, support for income generation for cooperatives and self-help group, seed, pesticides and fertilizer subsidies and irrigation support.
• The policy allows the developers to sell its 40 percent of electricity through the merchant power which pays higher than the PPA.

Companies Act, 2013

The Companies Act 2013 which came into force from the April 2014 replaces the previous Companies Act 1956. As per the section 135 of the Companies Act, 2013 obliged the company to undertake the Corporate Social Responsibility (CSR) activities in the project affected areas through a separate committee consisting of members from different boards.

The Act notifies to share at least 2 percent of the average net profit gained from by the specified companies during the three immediately preceding financial year. The provision of CSR would be applicable to those companies having (a) The net worth of Rs five hundred crores or more (b) Turnover of Rs. one thousand crores or more (c) a net profit of Rs. five crores or more The CSR activities are to be undertaken by the company, as per the CSR policy[28]. As per the schedule VII of section 135, the following are the activities to be included by the companies in their CSR - 1.eradicate

[26]State Electricity Regulatory Commission

[27] Rajiv Gandhi Grameen Vidyutikan Yojana launched in April 2005 as 'scheme of Rural Electricity Infrastructure and Rural Household Electrification' sanctioned in the 11th plan to attain the goal of providing access to electricity to all household with a share of 90:10 (90 percent grant by the central govt and 10 percent loan by Rural Electricity Cooperation to the state govt). Visit www.indiapowersector.com. For the further details of RGGVY in the Hydropower projects, see: MoP 'Hydropower Policy 2008'.

[28] CSR policy includes the projects or programs, followed by the company as per the guidelines under the schedule VII of the Act.

hunger and poverty, 2. Promote education, gender equality and empower women, 3. Support health measures, 4. Ensure environmental sustainability, 5. Enhance employment through vocational training, 6. Promote social business and 7. Contribute to the Central and State government for socio-economic development mostly the deprived group (STs, SCs, minorities and women).

Analysis: The decades of seventies and eighties was marked with two important events: One, the growing civil society movement against the impact of large dams; second, the inclusion of measures to protect the environment through the country's acts and polices as well as social issues entering into the debates of Human Rights.

Since 1990s, the power sector has attracted lots of private developers in the hydropower development which tend to meet the electricity deficiency in the country. As mentioned earlier, the social and environmental norms governing in the hydropower projects have evolved in the different time frame. By the 1990s, the environmental norms had reached its prescriptive stage while on the other hand, the social issues emerging from the dam-building just had its start to find its separate acts and polices. It can be drawn that involvement of International actors and the civil society has been a benchmark to improve the social and environmental norms.

As a consequence of civil society movement, the project proponents and the state government accepted the responsibility of rehabilitation which goes beyond the mere monetary compensation as a cost of land acquired and mitigation for the damages caused. Inclusion of measures addressing the social issues can be witnessed from the country's environmental policies though government drafted a series of resettlement polices but never get materialized into a practical policy. Almost for three decades of massive dam-building, the country lacks a statutory plan or the national policy for

rehabilitation of the affected families. Neither the State government nor the project proponent have integrated comprehensive Rehabilitation plan in the planning phase. It was only from early decades for 21st century the social norm was legalized when the first National Rehabilitation and Resettlement was passed by the legislation in the year 2003. Cernea (2007) claim R&R as an opportunity to the oustees if seen through the lens of Benefit Sharing.

i. The local people were recognised as project stakeholders by ensuring fair and equitable participation in the decision-making process.
ii. State Government as a stakeholder of the project which receive 12 percent of revenue from the project as well as holds equity shares in the project.
iii. Involvement of several departments under the Central and State Government and formulation of multi-disciplinary expert committee for environmental clearance and monitoring the works of the projects.
iv. Comprehensive Resettlement and Rehabilitation plan included as an integral part of National Environmental plans and polices. Later in the early 2000s, government legalized Resettlement and Rehabilitation as mandatory to the project proponent.
v. Broaden the definition of Project Affected Families including directly and indirectly affected peoples unlike the earlier provision of limiting to land owners.

The landmark of this era is the formulation of its own hydropower policy governing the Hydropower projects as a single entity rather than water infrastructure of a whole. Another initiative of government is revisiting the Land Acquisition Act after more than a decade.

To conclude the environmental and social norms has become an integral part of hydropower development despite its private objective of meeting the energy demand as well as a major source of revenue to many of the states. The process of legally addressing the social and environmental issues mostly reveals bottom-top approach, influenced by the civil society movement backed and the international guidelines.

To summarize the above mentioned country's acts, polices and notifications during the last and early phase of 20th and 21st century, the following provision can be drawn which recognizes the rights and ensure community development:

Table 2.4: Summary of Acts and Polices Recognizing the Entitlement to Benefit Sharing

Components	Medium	Advantages
Comprehensive option Assessment	Through Environment Impact Assessment and Social Impact Assessment	Anticipating and addressing the environmental and social consequences in the earlier phase of planning
Participatory Decision-Making	Public Hearing identified in the EIA	Involving locals to share their views and doubts in the decision-making process thus recognizing them as stakeholders of the project. Public as part of environment clearance.
Recognising Entitlement and sharing benefits	Hydropower policy NRRP, Land Acquisition Act	Channelize total of 2 percent Revenue[29] directly to the locals as local area development funds. The provision under Compensation, Land Acquisition and Rehabilitation and Resettlement 2013 is applicable to landowners, landless, agricultural, non-agricultural laborers and squatters. Agricultural families defines also includes persons without the entitlement to land but whose livelihood depends upon the project area.

Source: Author's Self Compilation from various sources

[29] 1 percent of free electricity from the hydropower developers and another 1 percent by the state government from the total royalty paid by the developers. The total of 2 percent for the Local Development Fund as identified by the Hydropower Policy 2008.

The above mentioned components identified from the country's acts, polices and notification forms an important part of Benefit Sharing Mechanisms, identified by some of the International Organizations such as World Commission on Dams, International Hydropower Association and International Energy Agency.

To conclude, there is no such legal framework developed in India's hydropower projects specially while taking Benefit Sharing mechanism as a whole but one cannot even deny the fact that the prevailing acts and policies is no away from including the component that defines the 'Benefit Sharing' as mentioned in the International guidelines. It can be marked that recent government policies encourage participation of local communities in designing and implementation of project in order to ensure a continuous flow of benefits to the project affected communities. Infact, the hydropower policy only authorize the state government to collect the revenue from the developers but there is no such guiding principle interms of its utilization. As said by Roquet (2007), 'The legislation defining the benefit sharing framework often includes the provision of transferring the part of revenue from the developers to the regional, found in the case of Brazilian, Colombian and Nepalese legislation'. These sort of legal framework do not directly address the project affected people rather it is used in infrastructure and services which leads towards the equitable sharing of benefits, provided the sound institutional management for managing fund (ibid). As a consequences, the revenue remains as a government budget, used as general fund for the overall development of the state. The fund might have been decentralized to the local institutions to improve the living condition of the project affected communities especially in the project developed before the formulation of new hydropower policy of 2008 or in cases when private developers are unable to execute CSR scheme due overcost of the project.

2.6 Sikkim's Acts and Polices in the Hydropower Sector

2.6.1 Land Acquisition Act

The state's first Land Acquisition Act is formulated by the Government of Sikkim on January 1977 with an objective of speedy acquisition of land for the public purpose which basically includes the provision of land for town and rural planning for providing better facilities. The State Government is vested with the authority to acquire private land for the public purpose. The payment of the land acquired was determined by the collector in accordance with the principle of National Land Acquisition Act 1894, provided the 'market value' of the land. The acts include the provision of payment to the cultivators[30] at the time of acquisition of the land:

a. 5 to 10 years: 15 percent of the amount payable for the acquisition;
b. 10 to 15 years: 20 percent of the amount;
c. 15 to 20 years: 25 percent of the amount;

2.6.2 State's Hydropower Policy[31]

Based on the new hydropower policy of 2008, the Energy and Power department, Government of Sikkim drafted the terms and conditions for the private developers with the installed capacity of 25 MW or above. The Hydropower Policy is yet to be formally notified by the concerned department that can be accessed by the public.

The hydropower project below the capacity of 25 MW is allocated to the SPCD/Energy and Power Department.

Following are the provision outlined by the department:

[30] According to the state Land Acquisition Act 1978, 'cultivators' refers to a person who cultivates the land of another person on condition of delivering a share or any fixed quantity of the produce of any fixed amount.
[31] http://www.powerdepartmentsikkim.com/HEPDevelopmentTerms.aspx accessed on 14th July 2017.

- The projects allocated on a BOOT basis (Build, Own, Operate and Transfer) for the 35 years and then transferred to the state government free of cost.
- The company is required to carry out EIA studies and prepare EMP and obtain consent from the State Pollution Control Board as well as Ministry of Environment and Forest, Government of India.
- The provision of Royalty to be paid by the developers at the rate of 12 percent of the net energy for the first 15 years after commissioning of the project and then 15 percent of the net energy for the next 15 years. The state government shall receive 1 percent additional free power for Local area development fund and Environment cess @ one paise per from the project approved after 2008.
- The Government shall enter into equity share of 11 percent in the project within 100 MW while 26 percent in case of project above 100 MW capacity.
- The project developers are directed to provide employment to the locals (skilled, unskilled and semi-skilled) workforce including business and contract opportunities as per the eligibility criteria.
- Early stage, the private developers are required to deposit Rs. 10,000 per MW of the installed capacity as a non-refundable processing fee. Later in case of failure to commission within the targeted period, the project shall pay a penalty of Rs 10,000 per MW per month.
- The State government shall take the responsibility of preparing and implementing Resettlement and Rehabilitation plan, cost to be borne by the project developers.
- The project developers are required to pay service charge for land acquisition to the government @ 1.5 percent of the total compensation and one job to the displaced/adversely affected families.

- Government shall constitute a Multi disciplinary Monitoring Committee to monitor the project and Project Level Welfare Committee for the welfare of the PAPs.

2.6.3 MoU as a Major Tool

The hydropower policy 1998 authorizes the State Government to accept the project based on the Memorandum of Understanding between the project developers and the concerned authority of the state government. The terms and conditions mentioned are mostly referred from the policies framed by the Central authorities as well as few other Himalayan States (Himachal Pradesh)[32].

The MoU became the major tools to govern the social activities while the EMP for the environment protection unlike the NHPC with its own guiding principles. Following are the features mentioned in the MoU with some of the Hydropower projects:

1. The Government of Sikkim shall acquire the land at the request and expense of the company under the provision of Land Acquisition Act. In case of government unable to convince, the company can directly negotiate with the owners.
2. The Company may lease out land on a permanent or temporary (not exceeding 15 years) from the Government of Sikkim at the rate prescribed by the government.
3. The government shall prepare Resettlement and Rehabilitation plan for the local community adversely affected/displaced at the cost of the project.

[32] Interview with the Government officials from the Energy and Power Department Government of Sikkim

4. The government to form Multi-disciplinary committee to monitor the issue of implementation comprising the members from the company and the various department of Government of Sikkim.
5. The government to constitute the Project Level Welfare Committee including local politicians, Gram Panchayats, important villagers, local administrations and company representatives to look after the socio-economic, employment of the local area.
6. Financial provision for CAT plan to be included in the project cost as determined by the State environment, forest and wildlife management Department.
7. The government urges the company to provide employment to each displaced families/severely affected under R&R scheme but empower them to cease immediately after the completion of the constructional work. Furthermore, the company shall also invite tenders locals capable to deliver work on time.
8. Government imposes environment cess @ One paise per unit of electricity sold and no other tax/duty/cess for the sale of power.

2.6.4 Sikkim Promotion on Local Employment Bill

Looking at the Government limited employment opportunity to the growing employed rate in the State, the Minister in-charge Mr. D.N Tarkarpa in the Department of Personnel and Administrator Reform proposed a bill in a state's legislative assembly claiming 95 percent of the employment in the private companies should be the locals with Sikkim Subject. The bill was unanimously passed a bill making it mandatory to the companies registered under Registration of Companies Act 1961 and Companies

Act 1956.[33] As per the statement in the Hindu newspaper, 'On 13th of April 2008, Chief Minister while addressing the investor and the power project developers urged them to co-operate in maintaining peace and harmony in the state and urged them to adequately train and recruit the locals in the employment sector as a benefit sharing with the locals. This is perceived a way to relieve the pressure on the state government to tackle growing unemployment.[34]

The legislation seeking 95 percent local employment couldn't withstand as it got rejected by the then Governor Sudarshan Agrawal who view the proposed bill as a violation of Article 14, 15 and 19(1)g of the Indian Constitution. Later in the same year, it was reduced to 80 percent of the local employment by the legislative assembly.[35]

The Labour Law Updates 2015-2016 mention that, 'President has refused to give assent to Sikkim Promotion of Local Employment Bill, 2008' proposing 80 percent employment in the private sector for Sikkimese people as a violation of Article 14 (Equality before law), 15 (Prohibition of discrimination on the grounds of religion, race, caste, sex or place of birth) and 19 (Protection of certain rights regarding freedom of speech etc.) of the Constitution'.[36] As such there is no legal provision that strictly binds the developers to follow certain ratio for the local employment. As one of the project officials said, 'During the meeting conducted by the State Minister-in-

[33] Zee News! 10.03.08 available at www.zee.news.india.com/home/95-of-sikkim-reserved-for-locals-429469.html accessed on 10.10.2017

[34] Sarikah Atreya, Hindu! 14.04.08 available at http://www.thehindubusinessline.com/todays-paper/tp-economy/maximum-job-opportunities-should-be-given-to-locals-chamling/article1621599.ece accessed on 17.10.17

[35] Outlook! 09.01.08 available at https://www.outlookindia.com/newswire/story/sikkim-govt-withdraws-local-employment-bill-tables-another/578978 accessed on 15.11.17

[36] Indian Law Watch, 'Labour Law Update 2015-16'. http://indianlawwatch.com/practice/labour-law-updates-2015-16/ accessed on 22nd December 2017.

Charge this year urged all the developers to follow the ratio of 70:30 to create employment opportunities to the locals'.

2.7 Benefit Sharing in the Acts and Policies in the Neighboring Himalayan States

Hydroelectricity is considered to be the clean and renewable source of energy with a potential to facilitate speedy economic development especially in states like Sikkim, Himachal Pradesh, Uttarakhand, J&K and Arunachal Pradesh (MoP 2005). The Himalayan states are known for its 'potential to generate the bulk of electricity', hence termed as a 'hydropower states' (Choudhury 2013). In recent times, the respective state government has implemented numerous policies to rapidly harness the power (ibid) inviting investor from both the public and private sector. At the state level, the bulk of hydropower potential is identified in the four Himalayan states namely, Arunachal Pradesh (33.84%), Himachal Pradesh (12.65%), Uttarakhand (12.22%) and Sikkim (2.88%) out of the total estimated country's potential of 148701 MW from the project above 25 MW (CEA 2012)[37]. These four states are blessed with the abundant amount of water in its river with huge hydroelectric potential which serves as a primary source to generate revenue to the state. The major part of the benefits from the hydropower development is the Royalty paid to the state government, fund directly to the local area and the CSR activities.

2.7.1 Legal Provision of Benefit Sharing in the Hydropower Projects of Himachal Pradesh

Cimato and Khatun claims that the importance of hydel project to the government is not just limited to meet the demand of electricity rather the government perceive hydropower projects as a major source of revenue for the state's budget, considering

[37] For more information visit: www.cea.nic.in/reports/hydro/he_potentialstatus_region.pdf.

the fact that developers should equally give importance to protect the social and environmental damages caused by the project.

- Himachal Pradesh, a hydropower rich hilly state lies in the western part of the Himalaya (Kumar & Katoch 2015) with an estimated hydroelectric potential of about 18820 MW (CEA 2012).
- The Government of Himachal Pradesh formulated its first Hydropower Policy in 2006.
- As per the policy, the developers are required to certain amount of fund from the project cost as a Local Area Development Fund, Resettlement & Rehabilitation, CAT and other developmental activities.
- The project upto the installed capacity upto 5 MW are required to pay 1 percent of the revenue the government during the construction and 1.5 percent for the project with the capacity above 5 MW.
- After commission of the project the revenue is increased to 12 percent for the 12 years of period; 18 percent for the next 18 years and 30 percent for the next 10 years.
- 1 percent of free power by the developers and state government towards Local Area Development Fund.
- The policy includes the provision to fund for the Local Area development the amount will be reduced if the local people protest against the project.
- A separate committee is constituted by the Himachal Pradesh Power Cooperation Limited for the implementation of CSR activities.
- Interms of social and environmental concern the state is ahead of all the hydropower states, the developers should maintain a minimum flow of 15 percent water.

- The government made a provision of providing minimum 70 percent employment to the bonafide Himchalis.

The interesting point about the Himachal policy is that the guidelines amended in the hydropower policy are applied to both the proposed and ongoing project, yet to be learnt for other States.

2.7.2 Legal Provision of Benefit Sharing in the Hydropower Projects of Uttarkhand

The state hydropower policy excludes royalty for the project below the capacity of 5 MW as those Hydropower projects are reserved for Panchayat Raj Institution (Gram Panchayat, Block Panchayat and Zilla Panchayat). The small projects are exempted for the first 15 years after the operation and from the 16^{th} year @ 18 percent to the government (GoU, undated). According to the hydropower policy, the Government of Uttarakhand notified the hydropower developer above the capacity of 5MW to contribute 1 percent of the approved cost towards the Local Area Development Fund during the construction phase and 1 percent of the net energy generated as a revenue after the commissioning of the project. The developers are to share 3 percent of the net energy generated or equivalent revenue towards the various Panchayat Raj Institutions which is further allocated as 1 percent to the project affected gram panchayats, 1 percent to the affected block panchayat and 1 percent to the Zilla Panchayat of the District in which project is located. As per the notification, in case of land acquisition under the public ownership (government or gram panchayat) are to be leased out for 40 years @ of Rs. 1 per sq.m. The State Rehabiliatation and Resettlement policy includes:-

- Allotment of land to those whose 70 percent or more land is acquired by the project or may compensate with ex-gratia/ allowances.

- Replacement cost for dispalcing at the rate of PWD along with sustenance allownce and rent for 12 months.
- Compensation for constructing other structure based on the rate of PWD.
- Displaced shopkeeper are alloted new shop with financial assistance and livelihood allownaces.
- Either construct house or cash payment of 4.0 lakh for affected BPL families.
- Cash compensation of Rs. 50,000 to ruural artisan/small traders and self-employed whose livelihood income had been disturbed.
- The affected tenents are provided financial assiatance and Minimum Average Wages of 750 days as a cost of rehabilitation.
- Other benefit includes- life pension of Rs. 1000/ month to vulnerable families, 1000 days of MAW to the PAFs not provided with house/land for constructing house/employment.

2.7.3 Legal Provision of Benefit Sharing in the Hydropower Projects of Arunachal Pradesh

- According to the Central Electricity Authority (CEA), the total hydropower potential is estimated at 57,000 MW.
- The Department of Hydropower Development is given the charge to monitor the Hydropower projects by the Government of Arunachal Pradesh.
- The objective of state government to envisaged a hydropower development are:
  - i. To develop hydropower projects in an eco-friendly manner with minimum distress to affected people.
  - ii. To create social and development infrastructure through hydropower developers for local area development iii. To ensure proper

Rehabilitation and Resettlement of project affected people in order to improve their living standards.

iii. To create job opportunities for local tribal people especially project affected people.

- Land to be leased to the developer against payment of land revenue as per relevant tariff of State Govt. till the BOOT period of the project.
- The state government to be provided 12 percent of free power by the developers for a period of 40 years.
- Equity participation of the government ranging from 11 percent to 26 percent in lieu of the cost of the land.
- An additional 1 percent free power for the Local Area Development Fund by the developers and the state government from its share as recommended by the India's Hydropower policy.
- The provision of 100 units/month free electricity to the PAF for the 10 years. In case a PAF consume less than 100 units, the remaining to be paid in cash or kind.
- The developers shall reserve the posts in the project for the local tribal people and preference to the eligible contractors.

  i. Managerial/Professional post 25 percent

  ii. Ministerial/Clerical post 50 percent

  iii. Skilled jobs 25 percent

  iv. Unskilled jobs 75 percent

2.8 Conclusion

To conclude the national and state acts and polices pertaining to the hydropower development and its Benefit Sharing mechanism to the resource provider (local

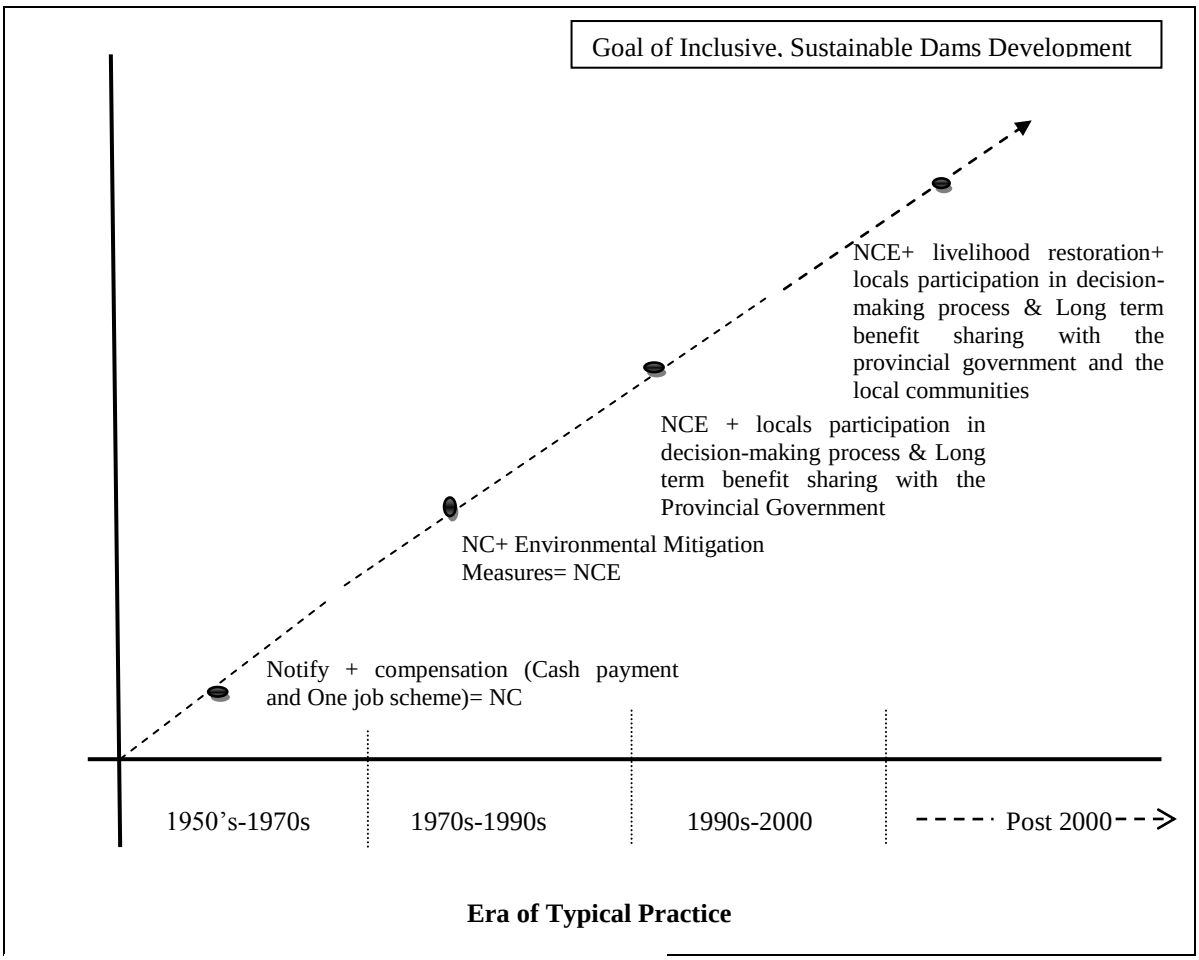
affected communities), the country lacks the legal and regulatory framework in the hydropower sector unlike the biological resources with its fully developed framework and incase of mining which has already introduced the concept of Benefit Sharing to the local communities.

Since long, the hydropower development was driven by the icons of prosperity and modernity whereby the dam-building was considered as a need of a country to meet the growing demand of water and power. At present, the government perceives dams as a source of generating revenue and damages to the ecology and the human livelihood often regarded as 'sacrifice to the national building'. The laws articulated during and after the colonial regime ensure to pay back the landowners inreturn of the private land acquired for the hydropower development. Moreover, government recognizes beneficiaries of the project as the country's population as a whole rather than targeting certain pockets of population as project affected communities.

Since the early seventies there was a growing concern over the deteriorating environment but what was lacking is the similar concern to protect the environment to restore the people's livelihood affected by the developmental activities. It was only from the late eighties where social issues started accumulating its stand as a result of voices raised by the civil society supported by the transnationally group. Hence, the challenge for the plan and policy makers was: One, country was plagued by both the energy and economy crises; second, the growing voices resulted into withdrawing support from the international financial agency; and third, to safeguard the environment along with the rights of the affected communities. Henceforth, the concerned authority reforms country's legal system which attracts the private developers with an equal emphasis to protect the livelihood of the people and its surrounding environment. Following are the mechanisms of Benefit Sharing identified

from the several acts, polices and notification enacted by the central and provincial government in different time frame.

Figure 2.1: Evolution of Benefit Sharing in India's Hydropower Development



Source: Author's Self-Compilation based on Hass 2009, P. 37

India's legal framework represents four forms of Benefit Sharing from the hydropower projects to the local affected communities:

a) Sharing monetary benefits for the resource utilization (Revenue Sharing);
b) Non-monetary forms of benefits (community development, local infrastructure, capacity building) commonly categorized under CSR activities;
c) Sharing project output (energy generated from the project) and
d) Direct involvement of locals in the decision-making process.

The legal provision enacted after the 1990s identified project affected people as project stakeholder. The locals are entitled with altogether 2 percent (1 percent each from the developers and the state government) as a fair share of benefits from the project revenue, public participation in the decision-making process through the mandatory public hearing. The new legislated norms widened the definition of adversely affected as displaced people and resettlement communities with further inclusion of all those peoples living in the project affected area whose rights to resource utilization have been reduced or impacted on their source of livelihood by the project.

The study finds that the principle of 'Benefit Sharing' is already enunciated through the different acts and polices to justify the rights of the local affected communities from the developmental activities including the hydropower projects but what lacks is the clear regulatory and institutional framework defining different mechanism of Benefit Sharing in Particular.

The state of Sikkim though entered lately in the hydropower sector, perceived as a medium to make the state economically self-reliant in the future attract the government to invite large number of public and private developers. The state norms governing the hydropower projects are mostly referred from acts and policies regulated by the central government. Efforts have been made by the state government to formulate its own hydropower policy which doesn't clear guide the developers. Based on the review of acts and polices from the neighboring states, some of the lesson to be learnt by Sikkim.

- **Himachal Pradesh**: Developers are required to allocate certain amount from the project budget targeting the project affected communities for local area

development fund, Resettlement and Rehabilitation, Catchment Area Treatment and other developmental activities. The policy directs the state government to constitute a separate committee to implement the CSR activities in the project area and strict guidelines which ensure to provide 70 percent of employment to the bonafied Himachalis. The policy clearly mentions that the guidelines amended are to be applied by both the proposed and ongoing project, a lesson that needs to be learnt by other states.

- **Uttarkhand**: The state hydropower policy clearly includes the provision of 1 percent of the approved cost towards the Local Area Development Fund during the construction period and 1 percent of the net energy generated as a revenue after the commissioning of the project. Allocation of the proejct revenue to the various panchayat Raj Institutions (3 percent) which is further allocated as 1 percent each to project affected gram panchayats, affected block panchayat, Zilla Panchayat of the District. Cash or kind compensation to proejct affeted people other than landowners.
- **Arunachal Pradesh:** developers shall reserve the posts in the project for the local tribal people and preference to the eligible contractors. 25 percent for Managerial/Professional post; 50 percent for Ministerial/Clerical post; 25 percent for skilled jobs; 75 percent for unskilled jobs.

Chapter 3

INSTITUTIONAL FRAMEWORK OF BENEFIT SHARING IN HYDROPOWER PROJECTS OF SIKKIM

3.1 Introduction

Hydropower development and its Benefit Sharing arrangement is inherently a multi-level process. Several actors are involved both directly and indirectly which includes national and sub-national governments, project developers, local authorities, political representatives including panchayats, NGOs, indigenous communities as well as civil society organizations to perform a range of functions related to Benefit Sharing.

The legitimacy of project-level Benefit Sharing arrangement may get compromised if the existing institutions including the local communities are not integrated during the time of designing, implementing and monitoring the Benefit Sharing scheme. The several actors from different institutions have an important role to play for the successful implementation of Benefit Sharing scheme. SWECO (2011) identifies institutional framework as one among the key enablers triggering the need and interest of Benefit Sharing to the local communities.

In order to understand the implications of Benefit Sharing system in Sikkim's Hydropower Projects, it is important to examine whether the existing institutions facilitates or impede the fair and equitable distribution of Benefits to the affected communities on account of sacrificing the rights over the natural resources. Lastly, this chapter argues that involvement of multi-level institution is needed for making Benefit Sharing a success.

3.2 Sikkim its way to Development

The economic and social development of the state have been largely governed by the geographical and the climatic factors recognized by the hilly to mountainous with rugged topography, limited arable land and other resources, uneven population distribution, isolated from the mainland India and bordered by the neighbouring countries. Since long the agriculture, horticulture, animal husbandry and forest products remained as a major source of state revenue whilst in recent the vision has shifted towards the exploitation of water resources for hydropower generation, organic farming, attract industry due to tax-levy and eco-tourism as a new mode of economic generation. The question arises in every citizen's mind how far those activities will generate profits that would support every single individual of the state?

The geographical inaccessibility, scare resource, harsh climatic condition and socio-economic disadvantages constraint the state for being self-reliant and has to depend heavily upon the central budget. The state has been categorized as 'Special Category State' under the "Gadgil formula"[38] of 1969, receiving extra preferential fund and enjoys concession in taxes. Those categorized states are supported by the central government in the form of 90 percent grants and 10 percent loans (Arora 2009). Since 2002, the state became the member of North Eastern Council aiming to ensure the balance and integrated economic development of the region receive additional fund by the central government for health, education, infrastructure development, agriculture etc. In the

[38] The formula named after the then Deputy chairman of Planning commission Dr. Gadgil Mukherjee adopted in the year 1991 categorizing as a 'Special category States' to the 11 states with hilly and difficult terrain; low population density; sizeable share of tribal population; bordered by neighboring countries; backwardness and social problem.

absence of commercial exploitation of the resources and the industrial development, the exploitation of the water resources for the hydro-electricity is seen as a major source of revenue for the state. Despite achieving development within the shortest period of time, the rate of unemployment remains a matter of concern. The reason behind which lama (2001) reiterated is that the common people perceive government job to be the most secure regardless of high or low grade. He further reminds that the current market status being filled with "educated unemployed youth' as the government job had reached its point of saturation. The people employed at the higher position in the private sector remain unnoticed and insecure as compared to the public servant. Huber (2013) referred it as 'child of sorrow'. It's quite surprising that the tiny Himalayan state with the small pockets of population ranks highest interms of unemployment.

3.3 Sikkim's Hydel Initiative: A Mission for Hydro-Dollars[39]

Sikkim being the part of Eastern Himalaya is neither known for having valuable mineral resources unlike other states nor is it suitable for the agriculture development. The only resources that make the state economically viable are forest, water resources and the panoramic scene with rich flora and fauna attracting a large number of tourists and researchers (lama 2001). As the state government encourages the forest to be preserved at any cost for conserving the ecology and the environment. Therefore, the only option remains is to promote tourism and the hydroelectricity generation from the perennial source of river Teesta, Rangit and its tributaries. The river Teesta, the pride of the Sikkimese people with the tremendous potential alone accounts for 90 percent of

[39] As Dharmadikary used the term Hydro-Dollars referring the revenue generated from the sale of energy similar to the way Arabian countries earns from the petroleum as a Petro-Dollars. The Vision of the government is to become 'self-reliant' by harnessing the natural resources.

electricity generation to the state (Subba 2015). The perennial nature of Himalayan Rivers with huge hydropower potential feed by the number of glaciers for which many states see it as a "goose that lays golden eggs' (Dharmadikary 2008).

Hydropower developments are not new to Sikkim as it can be traced back to 1927 with the commissioning of first Hydel power projects on the bank of Ranikhola near Gangtok with the installed capacity of 50 KW with an objective to provide electricity to Royal family and Gangtok town. It was made available to the general public only in 1962 henceforth, the demand for electricity stared growing slowly which was met through the further installation of Small & Medium Hydel project and the Diesel powerhouse with the total generation capacity of only 3 MW by the end of 1975 (GoS 2009). The demand for electricity increases rapidly and was more triggered by the implementation of rural electrification in 1979. During the same period, the proposal for larger hydropower was making its way in the River Teesta and Rangit which the planners identified as a means of modernizing and developing states economy, generating employment, earning revenue and meeting domestic and national energy needs (Arora 2009 & GoS 2009). Hydropower generation in the Sikkim identified as a 'critical variable and cornerstone of development planning after joining the Indian Union in 1975' (Arora 2009). In fact, the unreliable and inadequate power supply was considered one of the reasons hindering other economic activities to flourish, mainly the industrial sector. To fasten the energy generation, the state government formed a separate State Power Development Cooperation for the commercial venture of hydropower project upto the capacity of 25MW. Since its inception from 1998-99, the cooperation has commissioned three Hydropower projects with an installed capacity of 10 MW (GoS 2016).

The State from the last couples of decade underwent larger transformation interms of hydropower development as the outcome of new economic since the 1990s. With the inception of Electricity Act 2003 which facilitates the liberalization in the hydropower sector. Accordingly, a Hydropower committee was formed on 15th June 2004 to speed up the electricity sector through the hydropower projects (Subba 2015). Thus, Government of Sikkim, announced power policy to build project above 25 MW on BOOT basis to meet the local demand and export the surplus power which will be avenues for revenue to the state. The electricity generation from the water was further intensified with the increasing demand for electricity nationally and without finalized hydropower policy (Huber, Bolding & Joshi 2013), the state government awarded 27 projects of 5248 MW (GoS 2009) from the total capacity of 8000 MW as estimated by the CEA. At present, there are 19 projects under NHPC and private developers with a total installed capacity of 3720 MW out of 8000 MW i.e. 49.96 percent. The electricity generated from the six hydropower which accounts for 1872 MW[40] (26 percent) is already commissioned.

The power requirement of the state is very less owing to the small pockets of population and lack of heavy industries (GoS 2016). The total electricity generated from all the hydropower projects is much higher than the actual demand of the state. The estimated domestic demand during the winter is 100 MW and 70 MW in the state which can be met from the mini-micro projects neither causing any damages to nature nor disturb the people's livelihood and cultural belief (Arora 2009). With the commission of a number of projects, the states have already achieved its demand for the domestic purpose and sell the remaining power to the other states.

[40] The total electricity generated in the state far exceeds the peak demand of 70MW and 100MW thus able to bride the demand-supply gap and sell the surplus to the Power Grid Corporation of India.

Despite knowing the fact of low energy demand, what would be the possible reason for such mega projects throughout the state? The massive hydroelectricity projects mostly to those private developers without prior experience shows the governments urge to convert natural resources into economic goods, the way of increasing tax-revenue and generate employment opportunity. The dam building in Sikkim has become the way Klingensmith 2007 claimed as 'political symbols of the conquest of nature, representative of progress, and the development of a modern state[41]' as the protesting voices against the dam are considered to be marginal, anti-national and anti-Sikkimese (Arora 2009). The present Chief Minister admitted that 'more than 65 percent of the central budget is used for salary, leaving behind limited to invest for other developmental activities. Therefore, harnessing the natural and cultural resources (hydropower) become necessary for generating additional employment and leverage local economy' (see: Now 15th August 2012). The Chief Minister of the state visualize Sikkim 'becoming a major power hub of the country' [42]

The government to earn 1500 crore a year as a revenue from the hydropower project would only be possible with installed capacity of 5000 MW of electricity generation which triggered the rush to approve numbers of Independent of Power Producer including NHPC on both BOOM and BOOT (35 years of production) . Furthermore, the state government holds the power to share its equity of 26 percent to the project above the capacity of 100 MW and 10 Percent to the project below 100 MW except Teesta Urja (one of the biggest project in the state) with an equity share of 60.08 percent (GoS 2017).

[41] Arora points out that it is mostly the modernize state which favors the mega projects despite their tremendous power to alter the natural and social world.

[42] http://powermin.nic.in/sites/default/files/uploads/joint_initiative_of_govt_of_india_and_sikkim.pdf. A joint initiative of Govt. of India and Govt. of Sikkim Accessed on 18th Nov 2017

Table 3.1: Commissioned, Under-Construction and Upcoming hydropower projects in Sikkim with 25 MW and above capacity (Updated 2017)

Sl. no	Name of the scheme and its capacity	Date of signing MoU	Implementing agency	Gov. equity (%)	Present status of the project
01	Rangit-III HEP 60MW	-	NHPC	Nil	Commissioned in 2003
02	Teesta-V HEP 510 MW	-	NHPC	Nil	Commissioned in 2008
03	Chujachen HEP 110 MW	2003	Gati Infrastructure	Nil	Commissioned in 2013
04	Jorethang loop HEP 96 MW	2005	DANS Energy		Commissioned in 2013
05	Teesta stage-III 1200 MW (achieved cod)	2005	Teesta URJA	60.08	Commissioned five units (5*200) on 17th Feb. 2017
06	Dikchu HEP 96 MW	2006	Sneha Kinetic Pvt Ltd	Nil	Commissioned in 2017
07	Teesta Stage-IV 520 MW	2006	NHPC	Nil	Yet to start. No activities started on site. A public hearing underway.
08	Teesta Stage-VI 500 MW	2005	LANCO Energy Pvt Ltd	26 (Not invested till date)	Work stopped due to financial issues.
09	Panan HEP 300 MW	2005	Himagiri Hydro Energy Pvt Ltd	26	Only preliminary construction works started. As per their progress report, Nov 2016 expected COD 2021.
10	Rongnichu HEP 96 MW	2006	Madhya Bharat	Nil	Project under construction and cumulative progress of the project till date is 37%.
11	Bhasmay HEP 51 MW	2003	Gati infrastructure	Nil	Under construction and cumulative progress of the project till date is around 36%.
12	Rangit-II HEP 66 MW	2005	Sikkim Hydro Ventures Ltd	Nil	Project under construction and cumulative progress of the project till date is 30%. Has requested for extension of COD to Dec 2019.

13	Rangit-IV 120 MW	2005	Jal Power Co. Ltd	26	Works stopped due to financial issues. Project under SDR.
14	Tashiding HEP 97 MW	2008	Shiga Energy Pvt Ltd	Nil	Project under construction and cumulative progress of the project till date is around 98%. Expected COD April 2017.
15	Lachung HEP 99 MW	2008	Lachung Hydro Power Pvt. Ltd	Nil	No progress achieved. Has directed the developer to submit the latest progress report based on revised time frame failing which termination/cancellation of MOU/IA will be initiated.
16	Bhimkyong HEP 99 MW[43]	2008	Teesta Hydro Power Pvt. Ltd	Nil	No progress achieved. Has directed the developer to submit the latest progress report based on revised time frame failing which termination/cancellation of MOU/IA will be initiated.
17	Bop HEP 99 MW	2008	Chungthang Hydro Power Pvt. Ltd	Nil	No progress achieved. Has directed the developer to submit the latest progress report based on revised time frame failing which termination/cancellation of MOU/IA will be initiated.
18	Rahi Kyoung HEP 25 MW	-	Sikkim Engineering Pvt Ltd	Nil	Project under survey & investigation. DPR is under preparation. Public hearing has been concluded by SPCB.
19	Rateychu Bakchachu 44MW	-	Samvijay Power and Allied Industries Ltd.	Nil	Finalization of MOU under process by utilising the discharge of Bakchachu (river) only.

Source: Energy and Power Department, 2017[44]

[44] Accessed from http://www.powerdepartmentsikkim.com/HEPLatestStatus.aspx, Retrieved on 9th Nov 2017.

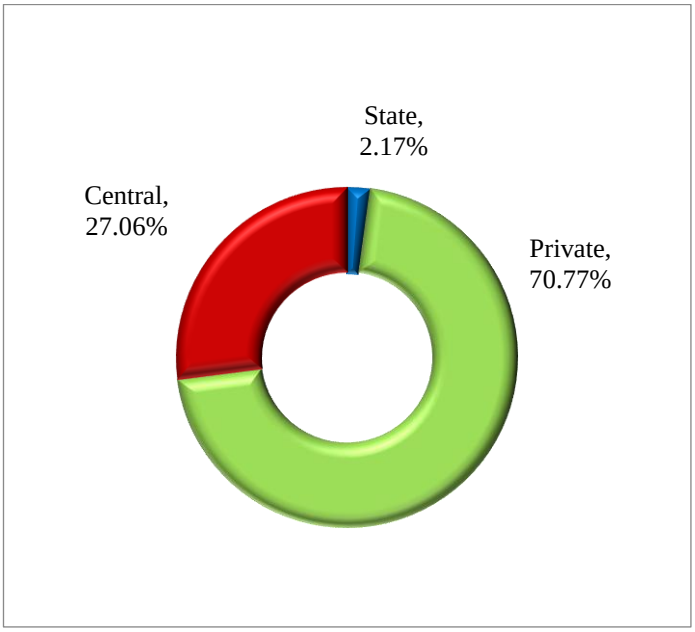
Table 3.2: List of Commissioned Hydropower Projects in Sikkim under different Ownership as of 2017

Sl No	Name of the Project	Installed Capacity (MW)
ENERGY & POWER DEPARTMENT		
1	Lower Lhagap Hydel Power (LLHP)	12.00
2	Jali Power House (JPH)	2.10
3	Rimbi- I	0.60
4	Rimbi- II	1.00
5	Rothak	0.20
6	Rongnichu Stage II	2.50
7	Chaten (Lachen)	0.10
8	Meyongchu	4.00
9	Upper Rongnichu Hydel Project (URHP)	8.00
10	Kalez	2.00
11	Lachung	0.20
12	Rabomchu	3.00
Total Energy Generation		**35.70**
STATE POWER DEVELOPMENT CORPORATION (SPDC)		
1	Mangley HEP	2.00
2	Lachung HEP	3.00
3	Rongli HEP	5.00
Total Energy Generation		**10.00**
NATIONAL HYDROELECTIRC POWER CORPORATION (NHPC)		
1	Teesta V HEP	510.00
2	Rangit III HEP	60.00
Total Energy Generation		**570.00**
INDEPENDENT POWER PRODUCER (IPP)		
1	Chujachen HEP	99.00
2	Jorethang Loop HEP	96.00
3	Teesta stage-III HEP	1200.0
4	Dikchu HEP	96.00
Total Energy Production		**1491.00**
Grand Total		**2106.70**

Source: Energy and Power Department, GoS

Figure 3.1: State's Total share of Installed Hydro Capacity as of 2017

Share of Installed Capacity



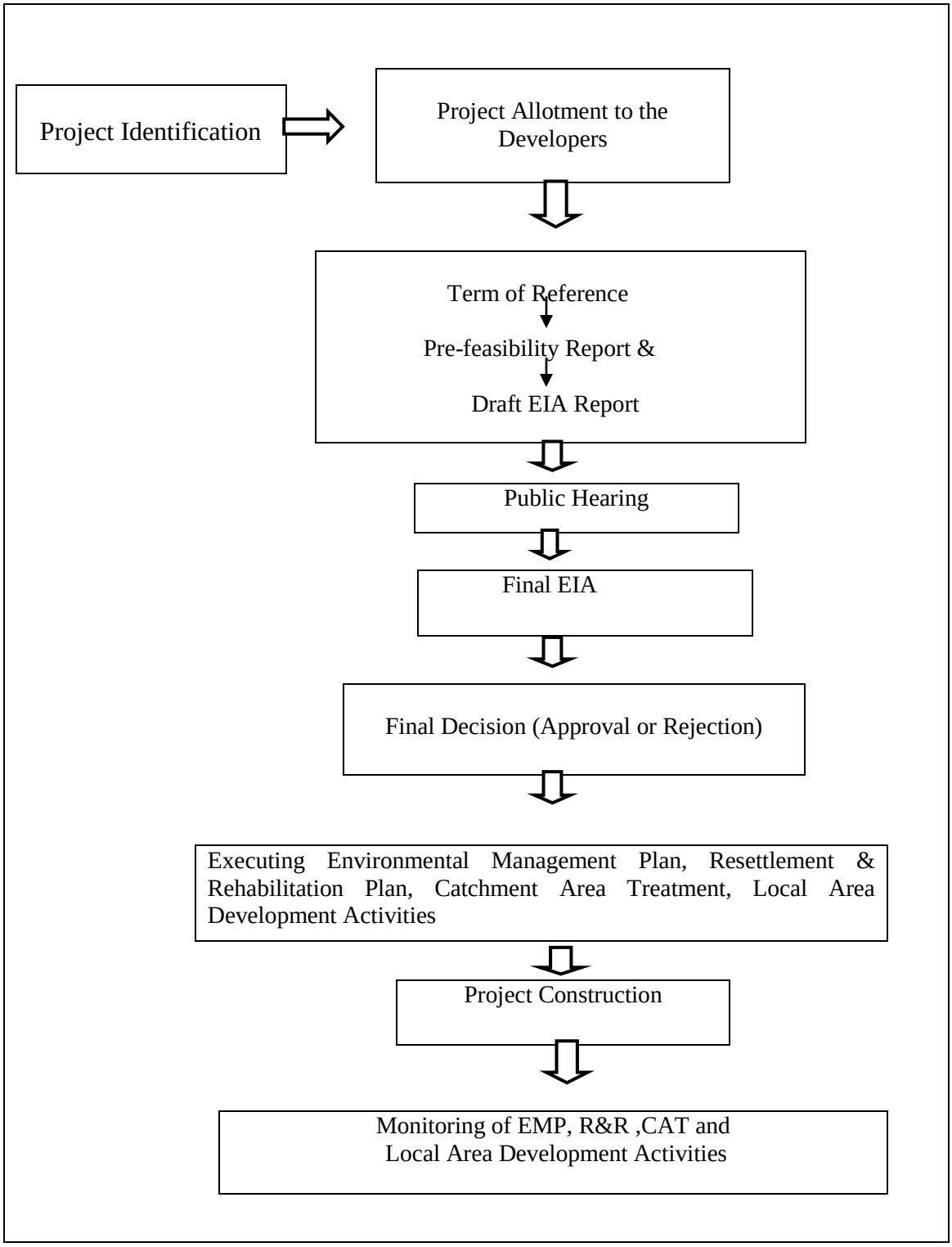
Sector	Capacity (MW)
Energy and Power Department	35.70 MW
SPDC*	10 MW
Private	1491 MW
NHPC	570 MW
Total	2106.70 MW

Source: Energy and Power Department, GoS 2016 & 2017
Note: State Power Development Corporation

3.4 Institutional Framework for Dam Planning and Decision-Making

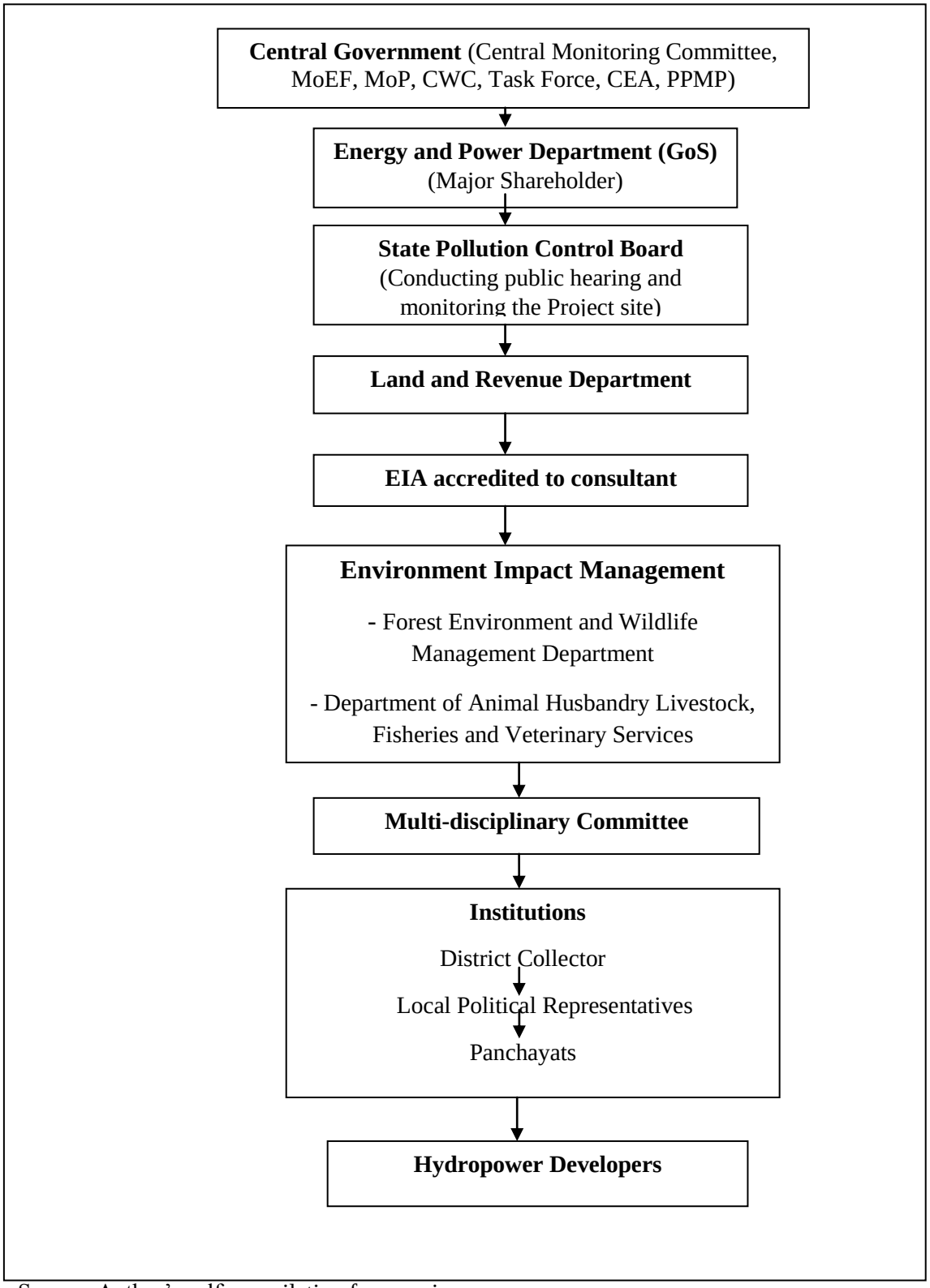
The hydropower development involves multi-level players from the government, civil society, Non-Governmental Organizations and private sectors for managing the primary objective of electricity generation as well as to protect the ecosystem and the rights of the local communities from the developmental activities. Identifying the institution governing water and land for the hydropower development would help to critically examine their support for social and environmental management for the local communities.

Figure 3.2: Overview on the Hydropower Development Process



Source: Author's self compilation from various sources

Figure 3.3: Institutions Involved for the Hydropower Development in Sikkim



Source: Author's self-compilation from various sources

According to Article 246 of the seventh schedule of the Indian constitution, the entire subject is divided into three lists- Union, State and the Concurrent. Even though, water is a state subject, converting the natural resources (water) for different developmental purpose lies within the interest of concerned State and the Central government executed through 'Special Purpose Vehicle' (SPV) i.e. Independent Power Producer (IPP) including NHPC. The departments/institutions monitoring the projects have a different role to perform, providing clearance to those projects that do not disturb the environment and society.

The role and responsibility of different institutions (as mentioned in the figure 7) involved in the hydropower development lies to both the federal and provincial government which is classified into three categories:-

Initial Planning Process: The process is overseen by the state government. In the stage, project developers are required to submit a preliminary feasibility report/Draft Term of Reference that identifies the suitable locations for dam-building which is largely based on the desk study submit to the state government. Based on the Term of Reference, the project developers are required to carry out the Detail survey and investigation to prepare a Detail Project Report (DPR), Environment Impact Assessment (EIA) and Environment Management Plan (EMP). For the study of EIA, the project developers award it to the private consultant. The Energy and Power Department on behalf of the State Government and the Project developers signed an agreement (Memorandum of Understanding).

Statutory Clearance Process: It is statutory rules for the company to undergo two types of clearance- Techno-clearance and environmental clearance from the Central Electricity Authority (CEA) and the Ministry of Environment and Forest (MoEF).

After the preparation of Draft report by the developers, the clearance process starts with the Public Hearing. It is basically a public consultant thus identifying the local affected communities as major stakeholders of the project. The project developers are required to submit the draft report of DPR, EIA, and EMP to the State Pollution Control Board (SPCB) inorder to conduct the public hearing along with the support of the District Collector. The SPCB needs to prepare a report based on the issues raised by the public and the comments of the project developer along with the Draft EIA must be forwarded to the Ministry of India. The report will be verified by the Central Appraisal committee comprising experts from all over the country. Then, MoEF announces the final decision of approval or rejection of the project. In some cases, the company is required to get additional clearance from other government institutions such as-

- Forest clearance from the MoEF if the project involve the diversion of forest land;
- Clearance from Indian Board of Wild Life if the project lies within the radius of 10 km of wild life sanctuary or national park;
- Clearance from the Ministry of social justice and empowerment/Tribal affairs in case of project disturbing the tribal population;

Post-Clearance Construction Phase: After the project achieved its clearance for the implementation of the project from the central government, the state government and the project developers sign an agreement to start the constructional work. Besides that, the project developers are required to submit six-monthly compliance report with environmental impact mitigation measures.

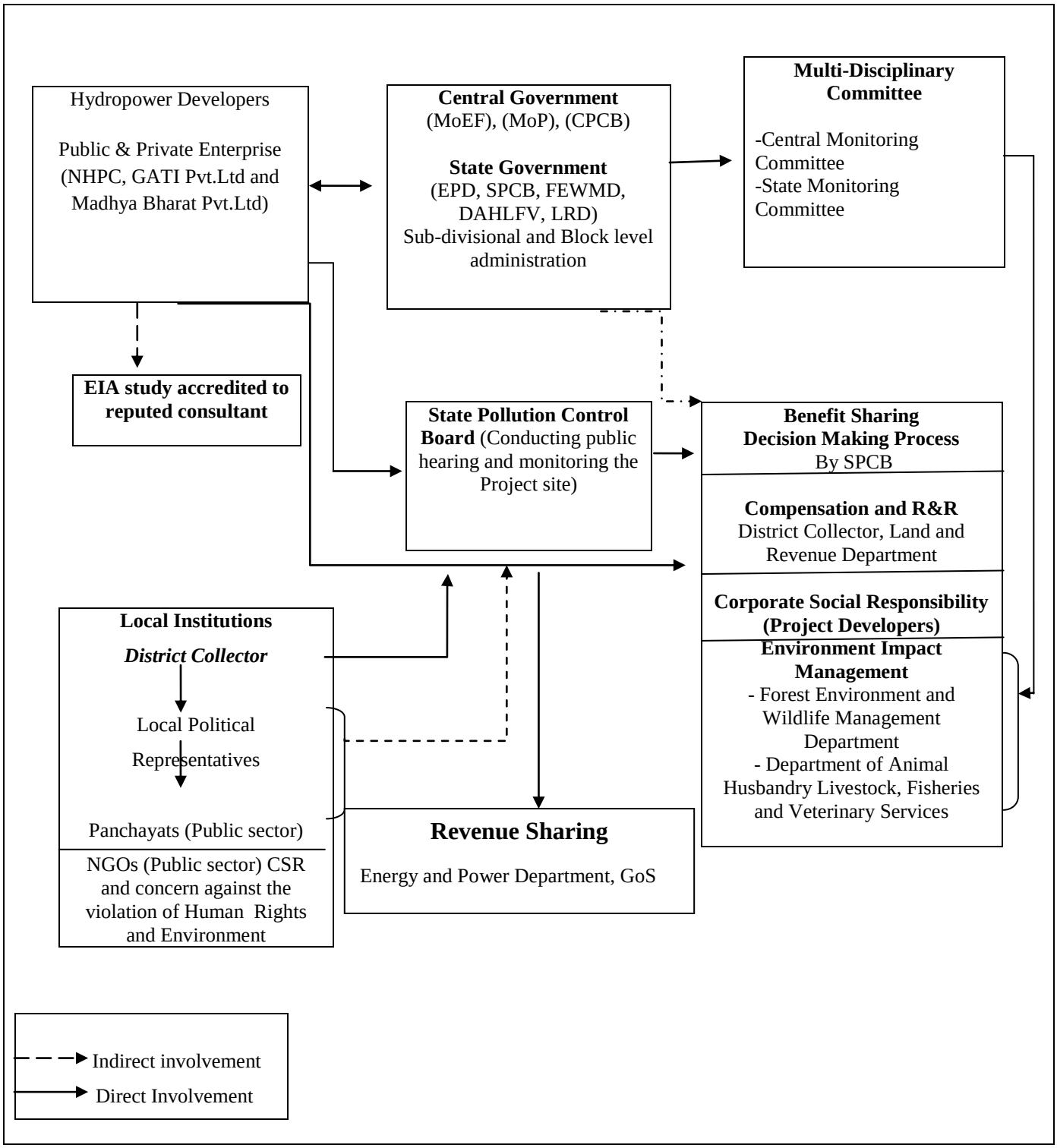
3.5 Institutional framework for Benefit sharing mechanism in the Hydropower Development

The institutional mapping focuses on looking at the organizational structure, their task and formal mandate and whether the current institutional set up enable the effectively to the measures of Benefit Sharing. Local communities suffering the negative externalities accuse the project of neither sharing the information nor explaining the purpose and future impact of the project (Wangchu 2007).

The assessment of institutional arrangement guided by the systems of laws, norms, customs, rules and participation approach is regarded to be critical for the implementation of a benefit-sharing programme (Wang 2012). SWECO (2011) identified the role and responsibilities of different institutions such as National and State government entities, Non-Governmental Organization, local governance and participation of local communities as one among the key enablers and triggering factors for the effective implementation of the Benefit Sharing Mechanism. The involvement of institutions would not be required if the project proponents take up its responsibility by its own to address the social and environmental aspects (ibid) which is rarely found in the profit-oriented activities.

The formulation and execution of the legal and regulatory framework are directly proportional to the coordination and networking of institutions at multiple levels, therefore each and every institution involved in the hydropower development should guide for the sustainable use of the resources. Moreover, this study argues that a multi-level institutional analysis is needed for the successful outcome of the Benefit Sharing Mechanism.

Figure 3.4: Existing Institutional Framework to Support Benefit Sharing



Source: Developed by author (Men et.al 2014)

3.5.1 Different Agencies Involved in Benefit Sharing

The process of hydropower development and sharing benefits involves the collaborative works of several institutions from central, state and local level. The following institutions are identified with direct and indirect role are listed below:-

Table 3.3: **Lists of Institution involved in Benefit Sharing**

Central	State	Local Institutions
-Ministry of Environment and Forest -Ministry of Power -Central Monitoring Committee -Central Pollution Control Board	-Energy and Power Department -State Pollution Control Board -Department of Environment Forest and Wildlife -Department of Fisheries -Land and Revenue Department -Social Welfare Department -State Electricity Regulatory Commission	-District Collector -Sub-Divisional Magistrate -Panchayat Raj Institutions -Private developers -Political Leaders (People's Representatives)

Source: Author's self-compilation from various sources

3.5.2 Institutional Set-Up for Benefit Sharing

Central Government Agencies: It includes agencies like Ministry of Environment and Forest, Ministry of Power, Central Water Commission, Central Electricity Authority, Inter-Ministerial Group and Power Project Monitoring Panel. The task of the central agencies throughout the hydropower development is divided into three segments:

i. First, planning and implementing policies, plans and programmes for the hydropower development with sustainable management of the natural resources and ensure equitable social and economic well-being of the people.
ii. Timely visiting the project-site for monitoring and evaluating the work as mentioned in the EIA/EMP.

State Government Agencies: Different government agencies are involved throughout the cycle of the project i.e. from planning, construction and commissioning stage.

i. *Forest Environment and Wildlife Management Department*: It is the apex government agency involved in planning and implementing the programmes to protect the environment from the massive infrastructural development and timely monitoring of the project site. The management fund is provided by the project developers.

ii. *Department of Animal Husbandry Livestock, Fisheries and Veterinary Services:* Undoubtedly, the construction of concrete dam in the river and diversion of water through the tunnel disturb the aquatic life thus damaging the ecosystem. State fisheries department is responsible to implement programs for the management of aquatic life, fund provided by the developers.

iii. *State Pollution Control Board:* Authorized to conduct Public Hearing and prepare final report as well as monitoring the water and air pollution of the project site on timely basis.

iv. *Energy and Power Department:* The concerned departments is a major shareholder in the project benefits and have a power take major decision/ support the Independent Power Producer for the hydropower development such as signing agreement on-behalf of state government, acquire land for the project at the cost borne by the company and also have the power to terminate the project.

v. *Land Revenue & Disaster Management Department*: The work of the department is limited to measure the land demarcated by the project and estimate the cost of the landowners and implement the Rehabilitation and Resettlement plan if required.

vi. *Social Welfare Department*- The officials often visit the project site to monitor the condition of the workers especially the labourers. The social welfare department is not included as a member of the Multi-disciplinary committee.

State Monitoring Committee involved in the hydropower development*:* As per the notification in the Environmental clearance issued by the Ministry of Environment, Government of India and the agreement signed between the state government and the project developers, the Department of Environment, Forest and Wildlife, GoS is authorized to constitute a Multi-Disciplinary Committee comprising of representatives of the company and the various department of the government to monitor the issues related to environmental safeguards arising during the implementation of the project. Furthermore, the committee is also given the charge to regulate the payments to be made by the company to the various departments. Following are the members of the committee constituted for each hydropower projects:

Table 3.4: Organizational set-up for Monitoring Hydropower Projects in Sikkim

Sl No	Members	Designation
01.	Additional PCCF (Planning & Administration) Department of Forest, Environment & Wildlife, GoS	Chairman
02.	Chief Conservator of Forest Department of Forest, Environment & Wildlife, GoS	Member
03.	CCF (T)	Member
04.	Director, Department of Agriculture, GoS	Member
05.	Additional Director (MOEF), Government of India	Member
06.	Representatives from Regional Office, MOEF, Shillong, Meghalaya	Member
07.	ECOSS, Omega Church Building Development Area, Gangtok	Member

08.	Conservator of Forest	Member
09.	CF (T)	Member
10.	In-charge of Hydropower project	Member Secretary & Convenor

Source: Government of Sikkim, 2009

Local Institutions: The local institutions constitutes of different government authorities employed in the project area, political representatives including panchayats and Non-Governmental Organization. The role of local institutions plays an important role in the hydropower development as it acts an intermediary between the local communities, project developers and the state government throughout the life of the project. It is found that involvement of local institutions was more in dealing with locals during the planning (mostly at the time of acquisition) and construction period. The interaction of the project developers with the local institutions as well as locals were found minimal after commissioning of the project. Based on the statement given by the locals, District Collector (DC) seems to be more powerful among all the local authorities. To both the locals and developers, District Collector was a mediator to solve the issues that emerged from the hydropower development. According to the locals, many a times District Collector was more supportive to the developers rather than the locals as he/she is also a government servant.

Local political representatives and Panchayats were more like a consultant while implementing social activities by the developers. They work according to the direction of the higher authorities/powerful political bodies rather than consulting directly with the local communities. While interviewing the government officials from project area, most of them finds themselves delimited within the control of higher authorities. Despite some of them being locals, they found helpless to unveil

the on-going discrimination to the local communities both by the developers and government.

3.5.3 Public Hearing: A Much Contested and Debated Issue

The legal provision of identifying the people's participation through the public hearing was the only mechanism found in the study area which prefers the systematic procedure to include project affected person and local communities who have a plausible stake in the impact of the project. In a simpler term, it can be said that it is a platform to the locals as well as the proponents to clarify their doubts, readdressing the public grievances and come up with suitable measures that bring a win-win solution to both the parties. Despite the major initiative by the planners and policymakers there arise some pros and cons when times come for the practical implementation.

As per the norms, the SPDC circulate the information regarding the schedule of hearing through the electronic media (newspaper) but in reality, the formal medium of communication adopted seems to be inefficient as the majority of them in the village do not have access to the newspaper as well do not have habit of reading newspaper. As a result, the majority of the locals remain absent or it may be the case where the hearing was conducted far away from the project area, referring to the Public hearing of Teesta V HEP which was conducted at Forest Department, Gangtok with few landholders who can give up their day and bear the expenses.

Obstructing the river flow with the massive dam-building primarily by the private developers depends heavily on the interest of the state government. Furthermore, some of the respondents expressed their grievances to the way public hearing was conducted;

> As I'm residing away from the project area, few locals invited me to attend the public hearing held at Rongli Mela-tar. When I raised questions about the future impact of the project which now people are witnessing, the developers assured the project begin environment-friendly which would rather benefit the area. After several arguments one thing becomes clear that government are in support of the project and whatever we say doesn't make any difference and rather we'll be targeted by the government. *Ex-Headmaster, Lingtam school (Chujachen HEP)*

To some of the respondents, the public hearing was seen as a platform of faulty promises by the developers which remain unmet after several years of completion.

> During the public hearing, the developers ensured that the dam-building in this area will bring opportunity to the area as one of the tourist spots of the state. At present, the area above the dam-site has become physically unstable for the settlement (sliding of land, cracking of walls, scarcity of water etc) as a result people are forced to leave their house and settle in new places. *Local Resident Zang village (Teesta V HEP)*

> Going against the project development was considered as anti-government, anti Sikkimese. *Local Resident, (Teesta V & Chujachen HEP)*

3.5.4 Land Acquisition: Government at its Supremacy

Needless to say that construction of hydropower power requires a vast amount of land with sometimes displacing people from their original habitat has become the global concern. The dam-building process in the state which started long back, initially by the state power department of a mini-capacity and later on it was taken up by the NHPC and the numerous private developers ranging from small scale to mega HEP in the state. The Land Acquisition Act empowers the government to acquire the land for the developmental activities which is commonly referred as a "public purpose[45]". Is it rational to use the term public purpose to those private developers who lease out the

[45] The term public purpose itself is quite confusing as there are numerous projects undertaken by the private developers. Huber (2013) claimed this as ill-defined by the government as there is no legal basis where people can challenge the government's way of interpretation.

land from the state government? As such the rate of ownership over the individual land is declining, affecting the livelihood of those oustees whose land was a major source of income. As per the government notification, the private developers are restricted to negotiate directly with the landowners for the permanent acquisition of the land. Rather it is the state government who acquires the land at the cost of developers and lease out the same to the developers at the service charge/felicitation fee of 1.5 percent of the total cost of compensation. According to the agreement, the developers may lease out land on a temporary basis not exceeding 15 years by directly negotiating with the landowners.

Even the LAA doesn't clarify the actual rate of compensation to be paid for the purchase of the land. The State's land and revenue department are given the charge to negotiate the compensatory rate based on the type of land categorized by the concerned administration. Except for the public sector, the respondents seem to be unaware of the compensatory rate paid to them, it was rather a lump sum amount estimated by the Land and Revenue Department but paid by the project developers. Majority of the respondent expressed dissatisfaction for the valuation of land paid to the 'innocent'[46] landowner in the two of the Hydel projects, Teesta V HEP and Chujachen HEP. Many of the locals from the project site considered this to be a pilot project as locals were unfamiliar with such large Hydel projects.

The Complex Land Rights*:* The land which people claims as their ancestral property seems to be at stake when driven by the state led-development agenda. Despite the legal entitlement to the ownership of the land, people were ultimately left with no other option besides selling their land for the developmental purpose. Who is

[46] Author used the term 'innocent' to those landowners of Teesta V HEP who were paid Rs. 4/sq.ft whilst in the same project the powerful persons 'Kazi' filed a case and was paid Rs. 16/sq.ft.

responsible for the forceful eviction of landowners? As responded by one of the locals from the project areas, all the administrative bodies, police authorities were found as an opponent to the locals. The District Collector notifies the land to be acquired by the project neither consulting nor negotiating with the owners. As per the norms, the locals can file an objection within 30 days from the date of hearing either verbally or in writings only if the issues fall under the said criteria. But the norms fail to take into consideration that one's livelihood would get disturbed by the development led activities.

> It's clear that we do not have rights over the land we owe if the government wants for any projects. As soon as we're told about the land acquisition for the HEP, some of us denied of selling our land (source of livelihood). As we decided to meet SDM (local administrator), hoping to get some support to dismiss the proposal. He remained quiet for a while and put a question whether we pay land revenue to the department. The government is actually collecting the revenue of the leased out land. After that, everyone remained silent and returned back in fear of losing the amount of compensation. *Local Resident, (Chujachen HEP)*

> Neither the state government nor the project developers take consent from the locals for such a massive project. The public hearing was scheduled at Gangtok which was attended by few locals. The land was forcibly taken from us and many of us decline the proposal but DC compelled us otherwise we'll put behind bars. In fear of getting trouble we accept the project. *Local Resident, (Teesta V HEP)*

3.5.5 Panchayats: the Last Link in the Political Chain (Three tier system)

Panchayats, who are elected by the communities as village representatives of the government, hold a responsibility to connect the villagers with the ruling party and the government. Furthermore, they are responsible to distribute the incentives and subsidies to the individual households. From the field survey, it is revealed that the active participation of the panchayat with the developers have mostly benefitted the society through the implementation of various activities under CSR. Their role

becomes equally influential if they can tie up with the developers for the local development activities.

Among the panchayat (in-position) interviewed, there were hardly anyone who spoke against the project despite they being the resident of project affected area. They panchayats were found supportive to the government decision mostly to earn revenue for the state inspite of knowing the fact that he/she may falls under the affected person. They know that going against the project means opposing the ruling party.

As one of the panchayat[47] who shared his inability to raise the concern caused by the project and voice for the rights and justice of the locals despite holding the position for the last ten years;

> The experience I had during my tenure, the panchayat is elected by the government as full-time party workers who are to gather peoples for the general meeting and work accordingly to the direction of higher authorities and are not given the power to monitor the welfare activities in the area.
>
> One cannot ignore the fact that construction starts with destruction but what is important here is the windfall revenue that state government earns from the hydropower projects. The revenue acts as a supplement to the central budget which is distributed to the peoples through different government schemes. *Panchayats (Teesta V HEP)*

3.5.6 Role of Non-Governmental Organizations

Non-Governmental Organization is the only body which independently works for the society. In Sikkim, there are only few such NGOs who challenge the government decision over the large hydropower projects in the protected area of indigenous community. As noted by Chettri (2017), the only voices raised against the government decision against the hydropower projects since last decades has been the issues over

[47] Though, he was in the position for 10 years from the ruling party till September 2017 and this statement was given in the 11th of November 2017.

the ‘Ethnic Environmentalism’ mainly by the NGOs formed by the Lepcha communities. Inspite of several numbers of NGOs working throughout the state, the violation of the project to the environment and its society has hardly being contested by the society other than indigenous group.

During the field survey, altogether three NGOs members are interviewed from the project site: Two from Teesta V HEP (Dikchu Youth Welfare Association and Yuwa Jagriti Sangh) and one from the Chujachen HEP (Youth Development Society of Sikkim) while in Rongnichu HEP, no NGOs were found in the village close to the dam-site. Among the three NGOs, Yuwa Jagriti Sangh have collaborate their social work with the NHPC’s CSR department. Several programmes were implemented in the within and outside the project affected area were funded by the project developers such as maternity ward at Singtam District hospital, cold-storage, various types of training to villagers especially targeting women and people from deprived group like ST, SC as well economically weaker section of the society. The other NGOs from Teesta V have actively participated in raising the concern over the environmental damages caused by the project work.

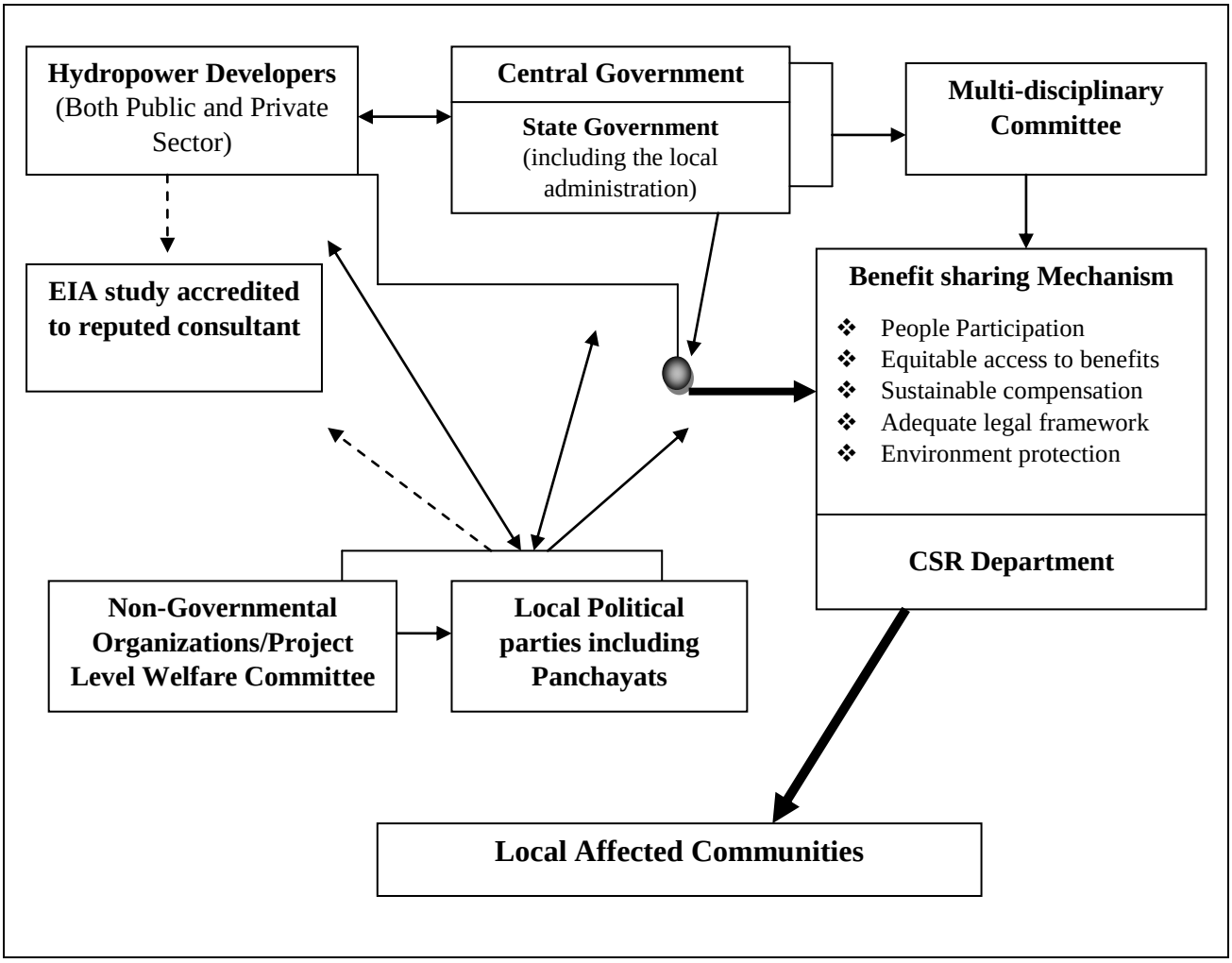
While the NGOs from Chujachen HEP made a proposal to work collaboratively which was refused by the project developers hence, the organization was kept away from the developmental activities. As said by one of the NGOs members;

> The project officials were welcoming and always encouraged our ideas for the social development. They have financially supported numerous schemes within and outside the Project affected areas. They believe in new ideas and creativity unlike the few government officials. Besides that there are enormous has been done by the NHPC. I got to know that since two years CSR funds of large companies are diverted for the Swachh Bharat Abhiyan.

3.6 Proposed Institutional Framework for Benefit Sharing to the local communities

Considering the present institutional framework and its gaps identified from the field investigation, attempt has been made to reframe the institutional network and nexus that results into fair and equitable share of benefits derived by the developers from the use of natural resources.

Figure 3.5: Proposed Institutional Network and Nexus to support Benefit Sharing



Source: Developed by author (Men et. al 2014)

The proposed institutional framework highlights some of the issues identified from the existing framework that need to be addressed in hydropower projects to support the equal and fair share of the benefits to the local communities:

1. There must be coordination among all the stakeholders including the project proponent, different department from the state government, local institutions, NGOs and local community's participation from planning, designing and implementation of mechanism must be an integral part of Benefit Sharing which is lacking in the present framework.
2. The study identify to beyond the Polycentric decision-making which mainly exists between the higher authorities and the project proponents. There is a need to decentralize the power to the local institutions including the panchayats in decision-making process throughout the project cycle and importantly empower them to monitor the social and environmental measures of the project.
3. There is a need to form a project level welfare committee (as per the MoU) that would precisely coordinate the social and environmental activities funded by the developers.
4. Active participation of NGOs is required that should be enough to question the state government.
5. Multi-disciplinary committee formed by both the federal and provincial government should monitor both the environmental and social (neglected in the present case) aspect from the project site including the the views of local communities as one of the aspect for evaluating the hydropower projects.

3.7 Conclusion

In this chapter I have tried to sketch out the involvement of different institutions in the hydropower development and most importantly their role in providing fair and equitable Benefits to the local communities. Before understanding the institutional framework for the Benefit Sharing, one needs to be clear that inviting large numbers of public and private entrepreneur for hydropower development is the interest of state government. The main purpose of the state government is to earn the windfall amount of revenue as the area is blessed with enormous volume of water as well as mountain topography that suits to generate the electricity round the year. Hence, government would be more supportive to the hydro-developers whereby damages caused to the locals are still considered as a sacrifice to the state-building process and aims to earn Rs. 1500 crore annually from the total installed capacity of 5000 MW.

This study identifies three levels of institutions involved in the hydropower development namely, Central government agencies, State government agencies and the local institutions including the panchayats and the Non-Governmental Organizations. The study finds that active participation of the local institutions and the communities were more limited to the planning and the early construction phase which was almost equals to zero after commissioning of the project, the major reason of people's discontentment.

There is no such institutional framework that guides the Benefit Sharing to the local communities. All the institutions involved in the hydropower development are directly or indirectly involved either in implementing or monitoring the Benefit Sharing measures adopted by the developers. The role of central government agencies is to formulate the acts and policies that guide the developers, power to approve or reject the project and lastly to monitor the. The Central and State committee often

visits the project site only to evaluate the environmental measures ascribed in the project EIA or EMP. The local institutions and communities remain outside the purview of the monitoring committee. The studies finds that visit of the monitoring committee are pre-informed with ample of time for the developers to show-case what qualifies the project, limited to the project sites. As a consequence, they fail to understand the actual issues other than those identified during the planning phase. The study finds no traces of local level welfare committee in the three hydropower projects as mentioned in the project MoU.

Among the local institutions, the role of District Collector (DC) is found more influential to both the developers and the local communities whereas the local authorities work according to the higher authorities. The implementation of the Benefit Sharing mechanism largely depends on the interest of the developers especially in the case of private project and sometimes based on the direction of District Collector or political representatives and NGOs in the case of Teesta V HEP. Among the hydropower project taken as case study, the NHPC holds stakeholders meeting which includes government officials

Lastly, attempt has been made to propose the institutional framework that suits the mountain communities to avail the benefits from the projects, based on active co-ordination of the institutions through the project cycle.

Chapter 4

PEOPLE'S PERCEPTION AROUND BENEFIT SHARING IN HYDROPOWER PROJECTS IN SIKKIM

4.1 Introduction

The preceding chapters looked at the institutional arrangement in the hydropower development and its Benefit Sharing regime process that supports the rights of the local communities. This chapter intends to understand various Benefit Sharing mechanism accrued to the local communities with the commencement of the project that support the livelihood condition of the mountain communities.

Over the past years, major discourse in Upper Teesta Basin has been the development of dams to generate electricity, earn revenue and bring opportunities to the locals such as employment, infrastructural development. On the other hand, the Run of River (RoR) scheme which is claimed to have 'benign character'[49] remains no away from environmental, social, economic and cultural damages. The local communities living near to the project site are always exposed to the various negative externalities which continuous even after the commissioning of the project. Inspite of the growing issues on the damages, this study finds importance in understanding the benefits gained by the mountain communities with the commencement of the project. Whether the benefits shared by the developer's acts as a threat or opportunities to the mountain communities remains the major questions throughout the research.

[49] R-o-R generally envisages having less submergence and displacement of land its people because the water storage is close to nil because of diversion through the tunnel back to river system (Huber 2013). The Hydropower project in Sikkim has a small pondage behind the barrage, stored water to be used during off-season.

Therefore, researcher's finds important to understand whether the rights of the local communities mainly the project affected communities in the Sikkim Himalaya is justified by the developers as well as the government authorities.

This study claims that inspite of the heated debate on the long term effect of the project, the government did not stop the private developers to enter the state as well as Benefit Sharing has been not much highlighted in the state legislation. Hence, these chapters focus on the prevailing Benefit Sharing approaches implemented by the developers based on the perspective of different stakeholders which includes project proponent, government officials, political bodies and local communities living close to dam-site area. This study does not take into account project capacity rather it focused on two important factors: first, based on the ownership i.e. Public and Private entrepreneur; second, the project under-construction and commissioned.

Due to limitation of the time, study focus to understand the benefits sharing approaches from the project affected communities living close to dams which may not justify the Benefit Sharing approaches implemented by the project as a whole. As one of the project officials says, "We do not limit our activities to certain areas unlike the police's jurisdiction. The activities are carried out within and beyond the project affected areas- need identified by the proponent or the demand made by the local communities/local politicians and it some cases it may be the NGOs". These chapters discuss the manner with which the issues of recognizing the rights of the people and benefits were dealt in the three selected hydropower project. The person of Namli (Rongnichu HEP), Chujachen (Chujachen HEP) and Rakdong-Tinket & Lum (Teesta V HEP) villages lies close to the dam-site, reported to the vulnerable to various kinds of damages.

Dams on the Upper Teesta Basin: Case Study

i. Teesta V Hydropower Project

The 510 MW Teesta V HEP is the first of a six stage cascade plan in the Upper Basin of Teesta in Sikkim build to harness 3635 MW of hydropower within 175 kms of the river. The project located in the East district is one of the largest commissioned Hydel project under the ownership of National Hydroelectric Power Corporation Limited (NHPC), a Government of India on a Build, Own and Operate and Maintain basis (BOOM).

The Run-of-River project with diurnal storage is located near Dikchu Bazaar. The water is diverted through the 17.8 km long tunnel which is reverted back to river through underground powerhouse located at Balutar. In 2000, after obtaining clearance from different department as well as public hearing conducted in 1997 as Forest department Gangtok, the MoU was signed between the State government and the developer. The constructional work started in early 2000 and achieved its commercial operation by 2008.

The estimated energy production from the project was 2573 MU. According to the annual report of 2016-2017, the actual generation was 2773 MU against the targeted generation of 2593 MU. During the financial year of 2015-2016, the actual electricity generated was 2710 MU against the targeted generation of 2590 MU. The project is spread over the three districts namely, East, North and south, so it is the responsibility of the developers to involve the local institutions and the comminutes for the environmental, socio–economic development of the project area. The Power generated from the project is supplied to the eastern network grid which includes West Bengal, Orissa and Jharkhand. Sikkim also receives energy from the power project.

ii. Chujachen Hydropower Project

The Chujachen Hydroelectric Power Project, located in the East district of the state, developed by Gati Infrastructure Limited is the first North-East Independent Power Project (IPP) in the private sector. Initially, the project was approved with an installed capacity of 99 MW which was later upgraded to 110 MW. The project uses water from two reservoirs Rangpo and Rongli streams of Teesta River. The average annual energy production is 484.1 MU.

The Run-of-River project with small storage is envisaged by constructing a dam across the river for diversion of the flow, the agreement was signed between the Energy and Power department on-behalf of State government on 14th November 2003 and started constructional work from 2007. The project successfully achieved its targeted date and started generating electricity from 2013 on BOOT (Build, Operate, Own and Transfer) basis which is given for 35 years from the commercial date of operation. The project site extends from Makaibari and Rolep (barrage site) to Sudunglakha (powerhouse site). Huge chunk of additional land is acquired in-between the main project site for other activities such as ADIT (tunneling), Surge Shaft etc.

iii. Rongnichu Hydropower Projects

The 96 MW Rongnichu Hydroelectric Power Project is a run of river hydropower project with small diurnal storage area for non-monsoon season developed on the Rongnichu stream (Rani Khola), a tributary of River Teesta in the East district of Sikkim. The project is being developed by Madhya Bharat Corporation Limited (MBPCL), a private sector project under BOOT basis for 35 years from the date of commercial operation with an installed capacity of 96 MW, estimated electricity per annum to be approximately 384 units. The agreement for the project signed between the two parties on 1st March 2006 but it was only from the 2010 the constructional

work was initiated. The project is still under-construction and is expected to be commissioned by the end of 2018.

The project lies in the East district of Sikkim extends from the foot of Namli village (barrage site) which is 16 km ahead of Gangtok till Kumrek (powerhouse site). Land has been acquired in-between the villages (Sumin, and Duga) for other project infrastructure. The purpose of the project is to contribute the rapidly growing demand for energy which is to be supplied to the states of Bihar, Jharkhand, Orissa, West Bengal, Sikkim and Andaman-Nicobar.

4.2 Various Benefits accrued from the Hydropower Projects

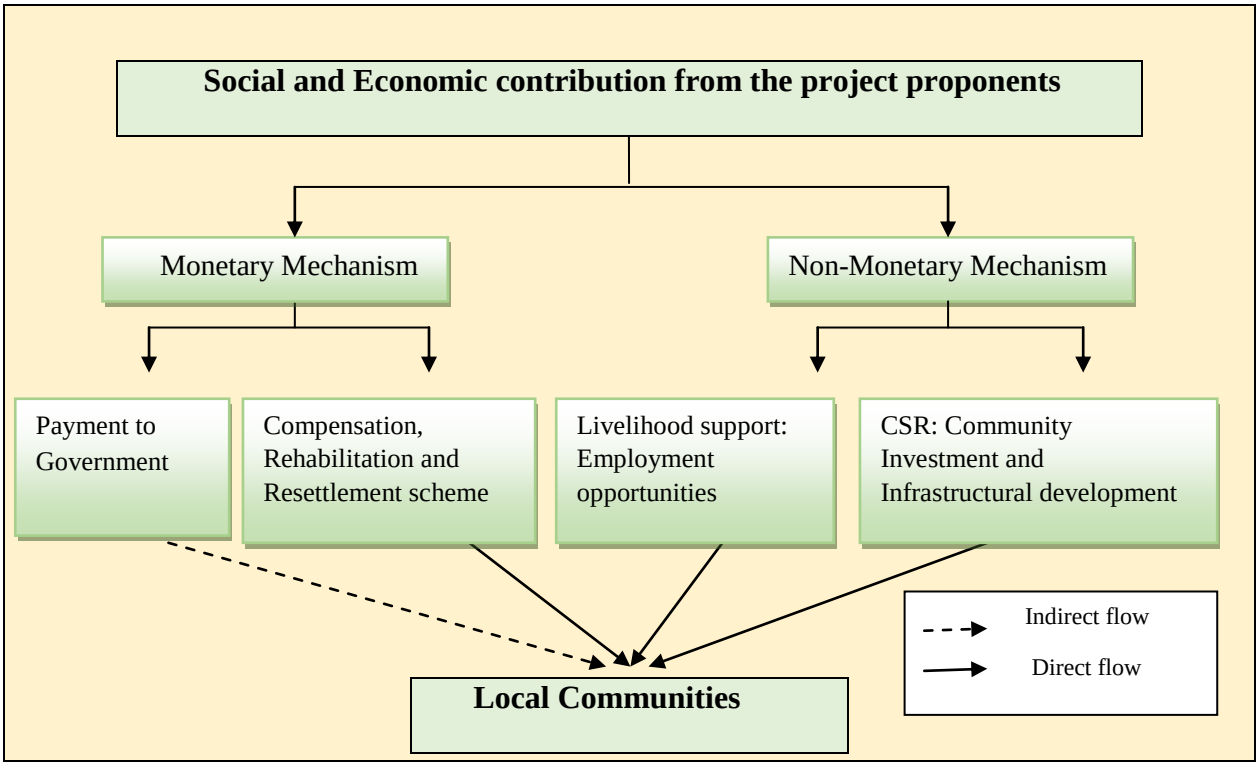
As discussed earlier, hydropower developments are inherently complex and challenging as the constructional work inevitably pose technological, environmental and social transformation thus leaving behind the long term effect which are many a times irreparable and unpredictable. To find out 'one size fits all' solution for the environmental, social and economic repercussion remain beyond the possibility. Considering all the issues of the dams, Paiement (2006) suggest that successful hydropower projects are those which recognize multi-dimensional complexities from planning till the operation stage.

Considering the fact, it is the legal and ethical responsibility of the developers exploiting the resources to contribute for the development and welfare of the affected communities additional to resettlement and rehabilitation. One way to achieve this is to share the benefits with the project affected communities using the monetary and non-monetary mechanism. The later includes the CSR components which includes the provision of directly funding the developmental activities of project affected areas. The study identifies three factors for implementing benefit sharing by the hydropower

developers in Sikkim: First, the dam owner generate significant economic rent; Second, it's the ethical responsibility as it uses local water and land; Lastly, to foster the regional and local development.

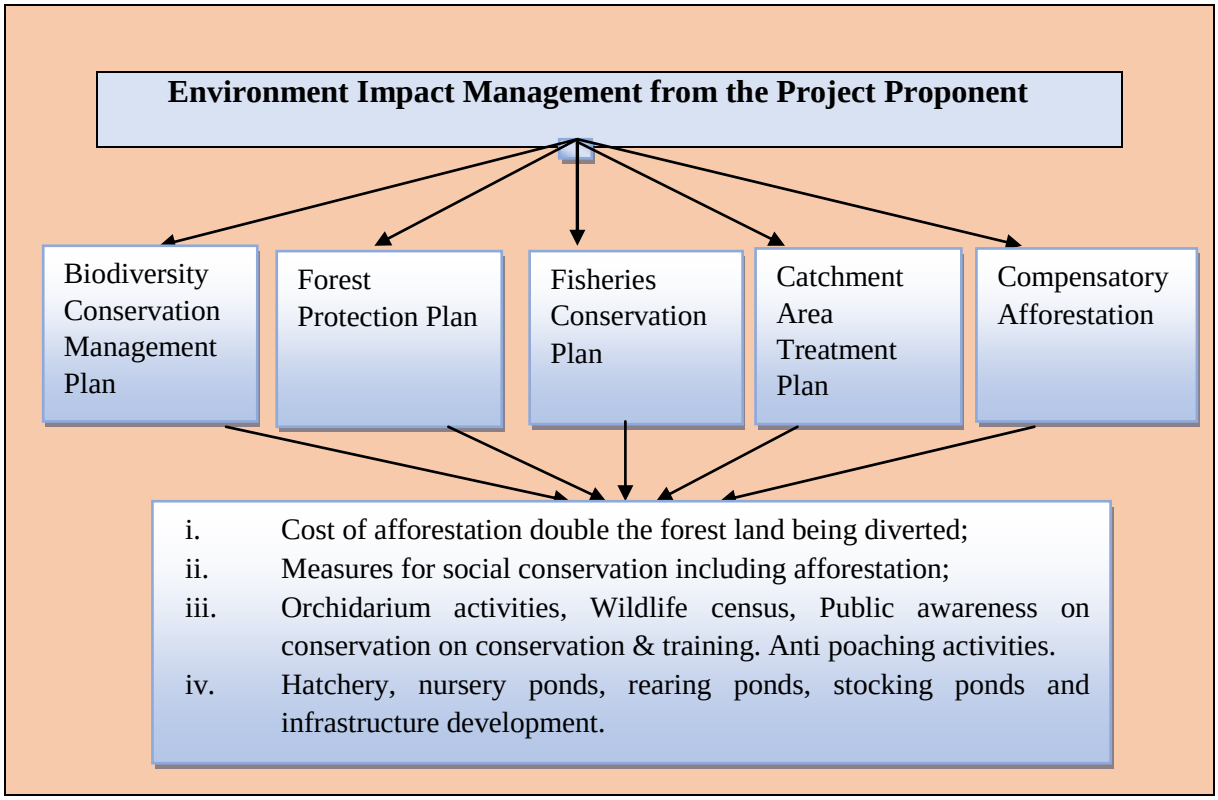
This study aims to evaluate whether the hydropower projects of Sikkim qualifies for being fair and equitable in sharing its benefits derived from the utilization of resources to the local communities. The reviewed countries acts and policies indicate that Benefit Sharing is gradually entering into the field of India's hydropower development with the revisiting of plans and policies since last decades. Benefit sharing mechanism in the hydropower projects of Sikkim are operated through the following channels identified below:

Figure 4.1: Identification of Benefit Sharing channels



Source: Developed by author

Figure 4.2: Environmental Management in Project Affected Areas



Source: Developed by author

4.2.1 Payment to Government: Royalty Sharing

The most common and popular form of sharing benefits in the hydropower sector to the owner[50] holding the rights over the resources has been the Royalty mechanism. Royalty Sharing has been legally recognised by the Ministry of power through the Hydropower policy of 1998 and 2000. The similar mechanism is being replicated in the state's rules and policies with basic guidelines of sharing 12 percent of the energy from the total production to the state government.

The three hydropower projects taken as case studies were developed in three different time frames under different ownership. Similarly, the royalty sharing to the state government also differs from each other.

[50] According the constitution of India, the state government is entitled to owe the water resources but electricity in the concurrent list, hence, the hydropower is governed by both the central and state government.

Table 4.1: Royalty rates in three Hydropower Projects

Generating Unit	Status	State's Share
Teesta V HEP (510 MW)	Commissioned	12 percent free power = 61.20 MW 1.19 percent on payment= 6.07 MW Total = 67.27 MW i.e. 350.37 Million = 79.11 crore
Chujachen HEP (110 MW)	Commissioned	12 percent free power + 2 percent wheeling charge from COD (2013) till march 2016= 163.04 Million Units making up 44.19 crore
Rongnichu HEP	Under-construction	12 percent for the first 15 years then increased to 15 percent for the rest 20 years of operation i.e. 16-35 years.

Source: Energy and Power Department, GoS 2016[51]

After project attain its commercial operation, royalties flow from the hydropower project to the Energy and Power department, Government of Sikkim based on the Memorandum of Understanding signed between the two parties. Royalties are in the form of electricity paid (Teesta V HEP) or in cash payment (Chujachen HEP) from the annual energy production.

Capitalizing the river through the massive hydropower development for the welfare and development of the people has been envisioned by the authorities. So far, there is no guiding mechanism to share the collected royalties through different institutions targeting the local communities. As the electricity is directly paid to the state government, it is the concerned department managing royalty for welfare of the people. The direct share of revenue was recognised by the federal government much later in 2008 which is not yet implemented in any of the three projects taken as case study.

[51] Accessed from http://www.powerdepartmentsikkim.com/Files/PowerAchievements.pdf, on 21st October 2017

People's Perspective regarding Royalty Sharing

As already discussed in the previous sections, royalty collection has been the driving forces for the acceptance of large numbers of hydropower projects in the state as it provides an additional fund for the developmental activities in a resource scare region other than enormous volume of water rolling down the steep mountain. The interview with several stakeholders which includes both the locals and the government officials reveals that the record of royalty from the hydropower project remains between the project owner and Energy and power department, GoS. The concerned department neither discloses publicly the detail information about the exact amount of royalty received and expenditure nor do any of the institutions enquire about its utilization.

According to the government official, 'the revenue collected from the hydropower projects are utilized for paying back loans acquired by the State's power department. The fund is directly transferred to the Energy and Power department to serve the state as a whole rather than targeting the specific population'.

> We pay 12 percent revenue to the state government as a rent for the usage of water as well as cost to recover social and environmental damages caused by the project during the operation phase. The company transfer 12 percent of the electricity from the total energy production directly from the power grid to the concerned department and its utilization totally depends upon the concerned department. *Project Official, (Teesta V HEP)*

> The company pays approximately 80 crore a year as a royalty to the State's Energy and Power department. I think the royalty from the NHPC might be the highest source of income (revenue) to the state. *Project official, (Teesta V HEP)*

> Unlike the other private companies, hydropower projects are not exempted of tax for the 10 years of period. Since the date of commissioning, the Gati Company has paid more than 60 crore to the state government. It is a huge amount for a state like Sikkim, earning without investment. *Project Official, (Chujachen HEP)*

Royalty from the Developers Benefits the State Government

During the field visit, majority of the respondent were aware of the Royalty mechanism and are of the opinion that royalty flows from the project benefits the state government. The direct flow of benefit as identified by the Hydropower Policy 2008 is yet to implement in the commissioned. However, the only budget invested for the locals is the company's 2 percent CSR and compensation measures.

> The villagers are very aware of the royalty sharing to the state government but none of the concerned authorities have ever mentioned about its usage. I consider this as a benefit to the government and not to the locals who suffers the damages. If it was a benefit then we wouldn't be paying tax for the electricity consumption. The average of 12 percent from each commissioned project is sufficient to provide free electricity for the domestic purpose for a small pocket of population in whole state. But we pay Rs. 500-600 per month. *Local Resident, Rakdong, (Teesta V HEP)*

Furthermore, the state government enters into equity sharing in few private projects with the money borrowed from the major financing agency which needs to be repaid. According the article published in the India Spend by Dutta (2015) mentions that the state owes more than Rs.800 crore from the power finance corporation[52] to invest as an equity shareholder in the private hydropower projects.

> It is the government interest to develop huge number of hydropower projects in the state but so far the local communities from the project area couldn't access the benefits they deserve. There is no local communities share neither in the rent generated by the project nor from the state government's royalty. *Local Resident (Chujachen HEP)*

However, responses from the panchayats in service were found in contrast to the former panchayat's views. Among the panchayats interviewed (in-service), there were only few who spoke against the projects as majority preferred to remain silence. They

[52] Power Finance Corporation is a specialized public sector financer for the hydropower development in the country.

are of the opinion that revenue from the hydropower projects acts as an additional to the central budget and the state government as a generous benefactors which provides goods and services in the form of 'subsidies and rewards' in the name of poverty alleviation which is totally free of cost. Some of them did not support direct flow of revenue to the local communities.

> Every year government introduce a scheme targeting individuals and communities which includes handing out the building materials, livestock, even entire brick-house, materials to renovate house, kitchen appliances etc as a measure to alleviate the poverty. Such initiatives couldn't be met by the central budget so it is added from the state own budget earned from the revenue collected. *Panchayat of Rakdong (Teesta V HEP)*

However, this is not to say that they always agree with the government decision especially in case of hydropower projects after all they also falls under the project affected area. But, what makes them silence or favoring the government makes quite confusing. One former Panchayat[53] who shares his inability to avert the project plan as he is bound by the politics:

> Though I live very close to the dam and have witnessed the impact of the project as well as future benefits to the government. Panchayats as well as local administration are not given the authority to interfere and bound to the action of ruling party. Panchayats are only party workers to attend meetings with minimum of 10-20 persons and deliver goods and services provided by the government.

Key Observation

As the royalty shared by hydropower projects just remain as an 'economic rent' inreturn of the hydro-resources utilized by the project. The estimation of rent doesn't

[53] Interview with the former panchayat of Namli, served the society from 2007 till 2017.

takes into account the 'windfall'[54] amount generated from the electricity generation. Hence, the owner of the hydro-resource is the owner of the rent. The study reveals that the annual payments referred under the terms of agreement between the government and the project proponent which are not destined to local affected communities rather to the Energy and Power department (GoS). So, it is not unjust to say that the peoples who suffered the loss due to the commencement of the project should be equally considered as a resource owner and avail the benefits to improve the livelihood condition in addition to the compensation.

Among the three projects, 96 MW Rongnichu HEP was supposed to start generating power in the year 2012 as per MoU. The developers being unable to commission on the expected date had sought time till 2016 which again further extended till the end of 2018. Had the project been commissioned the state government would be earning hundreds of lakhs annually as a royalty @ 12 percent free electricity. As per the report, it is estimated that the monthly income of state government is losing Rs.10 lakh per month from this project, which is a huge loss to the state.[55]

When interviewees were asked about their views whether the government should share the royalty to the project affected areas, it was that many of respondents did not feel free to speak that shows their consent towards the political decision. Few of the respondents especially the youths believe that direct fund to the project affected would support to community who bear the environmental and social loss to the project. One of the panchayat believes that;

> Personally I would disagree with the idea of direct flow of revenue to local communities as there is no managing system for such a huge amount which

[54] Here windfall basically refers to the profit earned by the project after reducing the expenses of the project.
[55] Sikkim Now! 14.12.13 available at http://sikkimnow.blogspot.in/2013/12/pil-demands-termination-of-madhya.html

> will create disparity within the project affected area and between the project site and non-project site. I prefer that revenue must be given to the supreme body which will be used for the betterment of whole population of the state rather than focusing on certain area. *Panchayat, Lower Samdung (Teesta V HEP)*

There is a need to recognize the provision of direct monetary mechanism to the local communities in those projects approved before the commencement of new hydropower policy as the only formal policy of royalty sharing doesn't reach to the local communities. The federal and provincial government should also learn from other countries as well as neighboring states of Uttarkhand to form a policy for distributing some portion of the royalty to the project affected with proper management other than only investing in new projects as equity shareholders.

4.2.2 Rehabilitation and Resettlement: Cash and Kind Compensation

With the majority of respondents (including locals, government officials and the project proponents) from three hydropower projects taken as case study- when asked about the benefits of the hydel projects to the local communities of project affected areas, the immediate response was the cash compensation to the landowners (depending upon how the individuals value the money), one permanent job, provision of land compensation (small plot of land) in the case of Teesta V HEP in against of their lost assets, property and lives and other monetary gains such as business and contractual work. One of the project officials from Rongnichu HEP says, 'our communities only value those benefits which yield monetary benefits to the individuals and not the society as a whole. The intangible gains from the project fail to get recognised as benefits by the society'.

Throughout the interview carried out in the project affected areas, complaints about the project developer's and the government dealing out the land acquisition process

and compensating the project affected peoples (landowners) have been dominant in two of the hydropower projects i.e. Teesta V HEP and Chujachen HEP. Majority of the landowners regard this as a forceful acquisition by the powerful authorities against the people's choice. From the interview, it is revealed that compensation and R&R scheme forms an integral part during the constructional phase which acts as an opportunity to those who successfully reinvest to grow further. Subsequently, cases were reported by the respondent where people are left neither with cash nor have enough land to practice agriculture and at present many of them are earning their livelihood as wage laborers.

In case of permanent employment as assured by the proponent provided only to those people recognized as 'fully affected' landowners but excludes the displaced 'tenants' or 'partially affected' landowners. Whereas all the landowning families were found to be employed permanently in the two private projects irrespective of intensity of impact. One of the interviewee from Chujachen reported that the project developers refuse to compensate the tenants whose house was dismantled. It was only when he pressurized the developers to file a case against the projects, finally negotiated with an agreement to pay cash compensation of Rs. 50,000.

The respondent from the Teesta V project complaint that the proponent promised to provide free electricity to the project affected area, but at present the electricity is neither free nor consistent, suffering with frequent electricity cut-off. In fact, during my stay in the Lower Samdung and Rongli village many nights was without electricity. According to the villagers of Zang, living close to the dams told that from last few years there is better power connection. The respondent from the R&R colony of Teesta V HEP at Dipudara reported that initially they were connected with free

power supply of electricity and water. After few months they started facing poor electricity supply which lasted for almost six months.

> It was after years of struggle and numerous complaints to both the developers and concerned authorities of the state government the reliable supply of electricity was provided by the government based on monthly payment. *Local Resident, Dipudara (Teesta V HEP)*

While in the private undertaking projects traced out no cases of Rehabilitation and Resettlement scheme implemented to the project induced displacement as a result of land acquisition. The project officials mentioned that none of the landowner's total land had been acquired therefore project was not required to follow the norms under the National Rehabilitation policy.

> As per the national policy, the state government acquires land for the project as well as identifies the beneficiaries and then carryout the R&R programme at the cost provided by the developers. But none of the hydropower projects in Sikkim is required to implement the programme as no people were displaced without any land. *Government official, Energy and Power Department (GoS*)

Most of the settlements are developed on the higher altitude of the mountains rather than along the river bank of the project-site, hence, the project induced displacement become comparatively low to meet the criteria to apply for National Rehabilitation and Resettlement policy except the Teesta V HEP, the public sector project under the ownership of NHPC with its own R&R policy which supports 69 families with one permanent job to each family and small plot of land for constructing house but insufficient to practice agriculture.

During my field survey, one of the project proponent recalls, 'at the time of construction, altogether 18 families were evacuated from their land and house. Inreturn of all their belongings, the displaced families were compensated with the cash as according to the rate fixed by the state government (land and revenue

department). While interviewing the affected communities, there was tribal population from Chujachen Hydropower project who are left with small portion of steep land which is unsuitable to practice agriculture.

Eligibility to Benefit from Rehabilitation and Resettlement

The provision under the R&R fund paid interms of cash and kind is found to have a crucial role which supports the economy of the project displaced families due to the process of land acquisition. The Government of India outlined the certain criteria for the project to carry out the Rehabilitation and Resettlement scheme in the developmental activities. Based on the information provided by the officials during the interview and project report, none of the project taken as case study is required to opt for R&R scheme. Altogether 62 fully affected families displaced by the public sector were covered under the R&R scheme whilst in the case of private sector there was no record of project displaced families hence R&R scheme not required.

As per the NHPC R&R plan, 62 fully affected families/land oustees were those who have been left with less than 1 acre of land after land acquisition were covered under the scheme thus providing cash compensation inreturn acquired, regular job to one person from each family, Homestead land @ 200 sq.m along with house building assistance of Rs. 200 and other subsistence allowance.

According to the statement given by the project officials, only 59 families accepted the job offer while rest of them preferred contractual work plus land and housing compensation. During the interview with one of the project employees from Chujachen HEP, 18 families were displaced at the time of land acquisition.

Key Observations

- State Government needs to include Rehabilitation and Resettlement plan in the hydropower policy that should be capable to identify the post-construction displacement.
- Developers should align the company policy with both the acts and policies of both the central and state government especially the private developers.

4.2.3 Employment Opportunity

Despite the unavoidable fact of project causing irreparable loss to the environment and its peoples, the hydropower project supports to improve the financial capital of local communities through the creation of employment opportunity especially during the constructional phase. The respondent express that the employment opportunity had always been one of the influencing factors behind the acceptance of the companies by the state government as well as by the local populace. From the field survey few things have been noted which were common in the three hydropower projects taken as case study. One, the project being the labor-intensive which generates large numbers of short and long term employment opportunity to all the section of the society (unskilled to skilled) in the early phase of the project which reduces slowly by the time it reaches its operation phase. Second, majority of local hiring is found to be casual labour, hired formally or informally through the project contractors while the project developer hires small group of locals especially from the landoustees/landowning/severely affected families. Third, the public undertaking project provided permanent employment to the landoustees based on ‘one job policy to each displaced family’. In private sector project employment was given to one member from all the landowning family.

> Altogether 59 landoustees is working as a regular employee in the projects along with small plot of land to construct house. They avail all the facilities under the central scheme includes benefits of education of their ward in Kendra Vidyalya, medical facilities etc. *Project official (Teesta V HEP)*

> Though, company had preferred to hire locals but majority of applicants are unskilled and fails to fulfill the project demand thus we are left with no option rather to appoint them as low grade workers. The company doesn't want to take a risk and always seeks persons with several years of experience which locals fail to produce.[56] *Project official (Chujachen HEP)*

The research indicate that local hiring was highly influenced by the political factors largely based on the recommendation rather than what was mentioned in the MoU, selection process to be carried out by the concerned department of state government or Project Level Welfare Committee. As one of the project officials recalls that how difficult was for them to satisfy the locals for the smooth functioning of the project especially to recruit without vacancy to those who are from non-technical background or totally unskilled workers.

> The in-take capacity of company remains less as most of the major works are outsourced to the companies contracted for the constructional work.. It becomes difficult for us to deny when local political leaders and the powerful authorities recommend an unskilled worker so we forward them to the contractors. *Project officials (Teesta V HEP)*

> There is a two ways of getting better position in the projects; either a person should be relatives of the political leaders/influential person in the society or one should have good terms with the ruling government. *Local resident (Chujachen HEP)*

> Employment in the hydropower sectors depends on the nature of the work. During the constructional phase, much of the demands are related to construction of civil works and electrical work in the operation phase.

[56] Interview with the H.R of 110 MW Chujachen HEP on 13th September 2017.

> Except the executive staff most of the jobs are not durable'. *Project Engineer (Rongnichu HEP)*

The peoples from the study area are of the opinion that permanent employment to the landowners, the educated youth and the opportunity to the unskilled to become skilled workers was the greatest project-related benefit. Kamal Bhattarai, a local NGOs worker recalls, one of my neighbour who was school drop-out started working as helper with an engineer in the project. By the time project get commissioned he became skilled as an electrician and now works in other projects with handsome salary. One of the elderly respondents whose majority of land was acquired by the project believes that losing the land to the project found to better than keeping it barren. He says, 'the younger generation prefer employment, business, contract work rather than working in the agricultural field'.

The other employment generated by the project has been the security personnel in the project area. In two of the project, Teesta V HEP and Rongnichu HEP hired *IRB jawans* from the government of Sikkim while the Chujachen HEP has hired from the Maharashtra based company with 25 local employees from the project area.

> The company has hired 46 IRB jawans as a security personnel posted in all project site for which company pays more than Rs. 20000 each to the state government. The appointment of IRB jawans by the company supports the state to reduce plaguing unemployment rate while creating more vacancies for the educated youths. *Project official (Rongnichu HEP)*

Despite the government efforts to divert the unemployed population in the private sector projects, the hydropower project is found to be incapable of accommodating the local populace. The lack of educational qualification to meet the required criteria (professional degree holder)of the project (technical and administrative) and the incapability of unskilled people to work in the massive constructional work were the

issues raised by the proponents during the interview resulting into lower rate of local employees in the company. The locals expressed their dissatisfaction in the nature of employment given to the locals to the landowners. According to the interviewees, the local hiring by the project contractor in large number is the reason people's discontentment. As one of the respondent, Ongmu Bhutia says,

> Being a local and an employee of the company, I can figure out the ill-doings of the project and feels like protesting against them. But the ultimate fact is atleast I'm earning my livelihood from them. Otherwise I'm an unemployed to the government.

> Out of the 225 land losers, only 59 land oustees were directly appointed by NHPC and 400 local employees (overall Sikkim) through the other private companies selected for the major constructional work. The most beneficiary group among the local were landowners, Businessman, employed and the contractors. *NGO member (Dikchu Youth Welfare Association (Teesta V HEP)*

While creating extensive employment opportunities mostly during the constructional period, developers do not recruit laborers but outsourced it to the other contractors. Despite the government conditions requiring 70 percent to be recruited but the developers seems to be defying the rules as they contract out the major works recruiting laborers from other state without any limitation and no records were maintained whether the labour force was local or not.

> It took us several years to differentiate between the actual developers and the builders contracted for construction of dams and other infrastructure. The constructional work was outsourced to the private companies and those contractors take commission from our salary. *Local resident, Rakdong (Teesta V HEP)*

> The local must differentiate between the principle employer and the contractor. The company award the constructional work to the contactors (builders group) and large of locals are hired by those contractors and not

by the company except the landowners appointed by the company. Unlike the private companies, NHPC notifies the job vacancies through electronic media, whosoever qualifies the interview get recruited. *Project officials (Teesta V HEP)*

They assured providing job in addition to the cash compensation and appointed as sweeper in the project colony with monthly salary of Rs. 6000, much lesser than what farmer's earns. *Local Resident, Makaibari (Chujachen HEP)*

Table 4.2: Local Employment provided by Hydropower Developers

Project Name	Temporal Aspects	Nature of Employment
Teesta V HEP (NHPC) Commissioned	Regular employment during and after construction	• A total of 62 families was offered regular job out of which 59 joined. • In addition to the above, 11 peoples were provided regular job in other cadres. • 125 Indian Reserve Battalion and Home Guard for project security.
	Employed by the contractors	• Total of 420 peoples are employed under contractual basis in the operation stage out of which around 200 employees are locals. • 80-85 percent of the locals are from the project affected area.
Chujachen HEP (Gati infra) Commissioned	After Construction	• 25 locals as a security guard under Maharashtra based company. • 20-30 percent locals as regular employees after commission and more than 100 nos. during the construction phase
Rongnichu HEP	Under-construction	• 46 Indian Reserve Battalion as project security

Source: Author's Self-Compilation based in the stakeholder's interview and project report

Encouraging Constructional Contractors and Business: Change in the Economic Activities

Undoubtedly, all the developmental projects induced change which may or may not be affirmative to the environment and its society. Notwithstanding the social and environmental risk, the hydropower developments boost the economic activities of the

area with the growing business sector and the boom in the local contractor. The project provides opportunity to the locals were mostly the contractual work. With the huge influx of the migrants, the local product gets its way to commercialization (dairy products and the vegetables). The area started witness flourish in the local economy and the subsistent agricultural products were seen in the market.

> As Sameer Das[57] recalls, 'When I first came to Rongli, there was few taxi from Rongli to Gangtok. Within a few years as the population increases so the economic activities and the numbers of vehicles multiplied year by year'.

The landowners who refuse to accept the job was offered the constructional work in the project. Though locals show discontent for letting out the major contractual work as well as supplying material to the economically strong locals or the contractors from towns like Rongpo and Singtam whereby the locals were given the small scale work. According to the official record maintained by the project which shows 1025 numbers of locals awarded constructional contractor and the supplier contract.[58]

The analysis from the field study brings out several factors influencing people into constructional contractor and suppliers are; Firstly, low educational attainment or no members in the working age group in the landowning families; Secondly, high return within short duration if managed properly; thirdly, proponent's ease way of dealing with the locals who may be risk to the project. Laxuman Gurung a local resident from Chujachen recall, how he was invited in the project office and given the constructional work after few of the locals started to oppose.

[57] He is working under the department of CSR at Chujachen HEP.
[58] See: Six Monthly Compliance Report till 31st March 2017. Retrieve on 3rd October 2017.

Key Observation

- Lack of coordination and active participation in the post-construction period between the locals, developers and the local institutions including NGOs. In private sector, there is no estimated amount allocated for the social activities unlike the public sector project (NHPC).
- Just mentioning priority to locals is not sufficient to justify identify the beneficiaries besides the mandatory provision of one job scheme to the land oustees in the case of public project and all the landowners in the private project. Strict implementation of 'recruitment through State's employment cell' and the 'Promotion of Local Employee Act 2008' as mentioned in the MoU of the private developers is needed to have fair selection of the employees. Certain selection criteria should be formulated so that the preference to be given based on the intensity of impact they suffered.
- Prior to the constructional work, the project developers should skill the locals so that they get employment in the projects.

4.2.4 Corporate Social Responsibility: Community Investment and Infrastructural Development

The social and economic activities implemented under the flagship of Corporate Social responsibility (CSR) is basically the ethical responsibility of the company towards the society. The CSR is common in all the hydropower projects is that not only to mitigate the social impact of the project rather it would equally focus on to contribute for the societal development including environmental protection, recognize Human Rights and most importantly to establish fair business practice. The CSR is the only non-monetary mechanism recognised by the Companies Act, 2013 which endorse the company to fund for the community services and infrastructural

development thus targeting larger section of the society. The activities carried out as a company's CSR in order the share the benefits from both the cost and profit are identified into four major heads: *Skill development and livelihood measures, Health, Education and Peripheral Development.*

Skill Development and Livelihood measures

Improving the livelihood and quality of life of peoples in the project area through the capacity building and training program is one of the important aspects of long-term Benefit Sharing from the hydropower projects. The skill development through training become necessary when the project is unable to absorb the large number of populace in employment or any sort of direct benefits, unemployment due to lack of qualification, no government vacancy especially to the local youths and housewife making them self-employed and self-reliance. The other responsibility of the project proponents is towards the farmers as the construction of the project reduces the soil fertility, decline in water table and surface run-off to fetch water in the agricultural field. It is important to train the farmers to integrate the traditional knowledge with the modern technology. Mr. Bhattarai of 70 years old respondent, farmer by his occupation practice agriculture and rearing livestock for his survival claims hydropower project as one of the factor affecting the agricultural productivity. After complaining to the agriculture department, they were provided chemical fertilizer. Later, the government initiated organic mission which restricted us to use those chemicals as a result there was drastic decline in the productivity.

> In collaboration with the NHPC, two days programme was organized to trained farmers in organic farming system with the use of modern technology. The 50 farmers selected for the training along with field exposure and were handed a set of equipment amount Rs. 7000/each. The total cost for the programme was funded by the NHPC. *Kamal Bhattarai, NGOs member (Yuwa Jagriti Sangh)*

NHPC funded a project of cold storage to preserve the local products in one of the under-developed and un-served village with the total cost of Rs. 58 lakh which is owned by the local communities. This is one of the major sustainable developments initiated by the company. *Kamal Bhattarai, NGOs member (Yuwa Jagriti Sangh)*

Table 4.3: Training organized by the project developers aiming to generate Self-Employment

Sl No	Name of the project	Sample of training from the selected Hydropower projects
01	Teesta V HEP	'Unnat Jiwan'- Training to tribal youths (carpentry) and Women (knitting/tailoring) Knitting Training for Rural Women Wood Carving Training for Rural Youth Fifty farmers were trained in modern technology along with set of equipments
02	Chujachen HEP	Handicraft training, cane bamboo training Bakery training, Agriculture training Kitchen Garden, Mushroom Cultivation
03	Rongnichu HEP	-

Source: Self-Compilation based on project report and interview with locals & project proponents

In most of the cases, the training designed by the projects is need-based identified either by field based team under CSR department or in consultation to the local MLAs and the NGOs. As I hardly come across the locals demanding the skill development course unlike the employment and the contractual work.

We are given training for a month in tailoring along with one sewing machine each. As everything was taught within a month, we're unable to learn properly and the machine is kept with no use. Tailoring itself in the village is of no scope and being a housewife can't leave the village and settle in the Bazaar. *Local Resident, (Teesta V HEP)*

Health Measures

The health awareness programme along with free check-up and medicine has been the most common benefit from the project. The medical teams widely cover the un-served and under-served villages beyond the project affected area. The case study shows that the awareness programme has largely have widely covered the growing health issues with positive outcome. One of the respondent shared how the health awareness programme organized in a remote village inhabited by the indigenous communities. Their food habit and living condition has ended many of the lives as victims of tuberculosis. As a result of health camp and awareness programme, people started with the others and medication provided have drastically decline death rate in the village. According to the locals, cases of HIV-AIDS, Malaria, Dengue used was common in the project site at the time of construction. As said by Doctor from Dikchu hospital,

> In my two years of service in Dikchu PHC, I haven't found any diseases resulted due to the project. The hospital lies close to the dam-site there is no interaction of project proponent neither has provided to the hospital since two years.

While the respondent from the 96 MW Rongnichu HEP claims that no health related programme was organized by the proponent in the dam-site villages. The fund for the social development many a times diverted gets from the project site by the political power. For example, the demand has been placed to the project proponent to divert the fund for Singtam hospital which was actually approved for the construction of two public health centre in the dam-site villages as per the MoU. Similarly, the other activities traced from the field visit are- financial support for the construction of old age home at lower samdung and the fund provided for constructing Mandir at upper Rakdong. Interestingly, both fall under the project area of Teesta V HEP.

Education

The hydropower developers have been actively engaged in encouraging the education in the rural and remote areas of Sikkim. Among the three hydropower projects, NHPC has been profoundly working to improve the quality of education in the four districts through different provision.

> Since many years, NHPC have a provision of scholarship to the ST/SCs student from within and outside the project affected area. It has always encouraged student in co-curricular activities annually like painting competition on certain themes, talent hunt, sports etc unlike the private developers. The winner is awarded with cash prize and also gets an opportunity to represent state-level competitions. *Headmaster, Rongli Jr. High School*

> Education has always given the priority by the project. They never denied the demand from the school. Frequently organize health programme to the student as well as locals. *School member, Dipudara (Teesta V HEP)*

Educating the people was not limited to the school going students. The provision of adult education (Women), computer training to the unemployed youth etc are found in the project area. The respondent aged 65 years old who attended the adult school says, Altogether we were 20 women joined the adult education. Now, I'm capable of writing my name and do simple calculation.

Peripheral Development

The interviewees recognize the access to basic services through infrastructure as a sustainable benefit sharing to the local communities. When we talk about support from the project, it is important to demarcate the difference of service provided to the society as measures of recover the cost of damages or the initiatives which goes much beyond the simple mitigation. For instance, the submergence of the school on the river bank and shifting to the higher altitude would not be considered as a benefit until

and unless the newly constructed school provides better facilities than the previous. According to the interviewees, the construction/maintenance of the roads and bridges during the constructional phase of the project for their purpose evenly served the locals that easily connect with the other area.

The experience from the field depicts that infrastructural development largely depends upon the demand of the peoples and the local political bodies. Direct support from the project seems to be common in this region while observing national day as well as organizing local festivals such as Celebrating Independence day, Gandhi Jyanti[59], Bhanu Jyanti, Viswakarma Puja[60], Durga Puja[61], Lampokhari festival, tourism festival at Gangtok, Tendong larum Faat etc. The financial support becomes the part of social activities.

> The locals keeping on demanding for sponsoring sports and many a times celebrating National programmes (Independence day, Bhanu Jyanti etc) which is funded from the CSR budget. They could have demanded for the other services that benefits the society for a long term. *Project officials (Rongnichu HEP and Chujachen HEP)*

> Good amount of cash flows from the project's CSR fund just in organizing a day programme. People need to think wisely whether the collecting fund from the project is beneficial to the society at a long-term. I suggest demand to be more towards community oriented which benefits all. *NGOs member, Rongli (Chujachen HEP)*

Hydropower development in the mountainous region is reported to have long-term change in the hydrology of the project area resulting into scarcity of the water in the project affected area. Hence, the developers are required to mitigate the dewatered area with the plans and programme for the farmers and the domestic purpose.

[59] Note: Jayanti (Birth Anniversary).
[60] A day celebrated for Vishakarna, a Hindu god, the divine architect, also considered as creator of the World.
[61] It is an annual Hindu Festival in the Indian sub-continent that reveres the goddess Durga.

In all the case study area, villagers reported tunneling as one of the reason which dripped the ground water downward leaving behind the villages with dearth of water supply. The practice of traditional agricultural system is still prevalent in the rural areas. The insufficient water supply sometimes becomes the reason of conflict between the villagers has been reported by the villagers. As one of the respondents told that during the pre-project period there was dearth of water in the village. There is no scarcity of water in our any more as huge volume of water flows from the tunnel which fetch the villages downward the tunnel.

It is found that hydropower developers have provision of supplying drinking water through piping from faraway places or distributing water from the tanker at the time of acute shortage or distributing syntax to the villagers for storage. In some of the villages, the private developers denied of providing water supply as the study reveals that problem was there prior to the constructional work. This was the case with the villages from Namli (96 MW Rongnichu HEP) and Pam Busty (110 MW Chujachen HEP). The study suggests that the projects are required to start water management scheme in the project affected atleast as a mitigation/compensation if not as benefit measures.

Table 4.4: Some of the Community Services and Infrastructural Development identified from the case study

Project Name	**Summary of activities under community services and infrastructure development**	
Teesta V HEP	Health	Free medical camp Health awareness programmes (HIV-AIDs, Tuberculosis) Provision of Beds to Dikchu Hospital 'Maternity ward' at Singtam District Hospital Provision of Equipment to PHCs Established of hospital and dispensary in its colony (Balautar & Lower Samdung)
	Education	Construction/repairing of school building, play ground,, toilets

		Inter-school competition in painting, talent hunt Distribution of Classroom equipments, teaching aid Financial support for ITI at North Sikkim Scholarship to SC/STs students Establishment of Kendra Vidhyalaya Encouraging education with modern technology (Computer) Distributed computer to schools, computer training for the rural population Promoting sports
	Peripheral Development	Construction/repairing of roads, bridges Sanitary toilets, crematorium shed, Footpath, community centre, Sponsoring of local festival/sports Project 'Jeewan Dhara'-construction of central water storage system
Chujachen HEP	Health	Free medical check with medicine Health awareness programmes mainly targeting women (Health & Hygiene), Dispensary in project area
	Education	Construction/ repairing work in the school Primary school in project area
	Peripheral Development	Sponsoring of local festival/sports Construction/repairing of road & bridges, temple, Gumba, Village footpath Water supply
Rongnichu HEP	Health	Financial support to STNM and Singtam hospital
	Education	Computer training scholarship furniture and equipment to school Provision of scholarship to meritius student
	Peripheral Development	Construction of Museum, community hall, monastery , road, old age home, cremation shed Sponsoring of national- local festival/sports Repairing of mandir Water supply Donation to different organizations/club

Source: Self-compilation from the stakeholder's interview and project report

People's demand for free electricity

However the new hydropower policy 2008 guidelines of RGGVY, 10 percent of state government share to be borne by the developers. Furthermore, the project with the installed capacity within 100 MW shall cover 2 km while the project above 500 MW within 10 km shall take charge of either providing free electricity supply or

equipment. Other provision include 100 MW to project affected families is away in the case study project. But the state's rules and condition have no such provision of distributing electricity and developers are not given the charge of investing 10 percent under RGGVY scheme.

Though electrification is not an issue in the state as it has already achieved 100 percent electrified household way back. The energy generated from the state's micro project and the revenue from the commissioned is sufficient to cater the domestic as well as commercial requirement. Throughout the interviews carried out in the project affected areas, they complaint about the project that it was the environmental and social activities of the project that does not correspond with the promises done during the planning phase. The other was the frequent electricity cut-off even in season other than the monsoon while on the other hand the project sites and colonies are lightened without any disturbance round the year. Indeed during my field visit, I witnessed frequent electricity cut-off which has hampered activities functioning through the electric energy, officials work getting delay and difficult for student to study at night. Thus the interviewees reported that they assured free electricity to the project affected areas within certain radius.

> When I asked about the free electricity from the project officials, he directly refused and told me better to question the government as they are paying 12 percent free electricity to the state government. *Local Resident, Rakdong (Teesta V HEP)*

> We sacrificed lands and rights over the river flowing from our area and the now we are paying the same tariff compared to other rural areas without dams. *Local Resident, Makai Bari (Chujachen HEP)*

Another issue is the lack of distribution licensee in the hand of power producers as they are not permitted to distribute electricity. The communities expect free and

reliable energy as their rights over the use of local resources and the social and environmental impact caused by the project. The direct supply of electricity to the project affected area can only be possible if the developers are given the distribution license.

> The Energy generated from the project is transmitted and whatever is required for the project is distributed from the transmission unit so the company cannot provide electricity to the locals. *Project officials (Chujachen HEP)*

Women Empowerment: Employment and Livelihood Trainings

Generally, women as one among the marginalized section of the society had limited opportunity in accessing direct benefits from hydropower projects as compared to the male. Numerous factors that constrain them to participate in employment sector identified from the fieldwork; low educational attainment, responsibility of the family, untimely working condition, only offered desk based job etc. As said by one of the respondent,

> Only few selective post are available in the hydropower project, mostly in the administrative sector if one can meet the requirement. Otherwise, the economically deprived women are mostly working in the lower grade job (cooking, cleaning) or as a manual worker mostly during the constructional period.

Other than the above mentioned, women were found to be more beneficial from the business (small shops in the project site) in the case of Chujachen HEP, commercialization of local products (door to door service) and as a contractor.

> Being a mother of three I didn't get time to think beyond the household work. It was much later we realize that there were many people from different states working as a contract. Then we form a group of four and opt for constructional work in the project. *Local Resident of Rakdong (Teesta V NHPC*)

The active participation and cooperation between the proponents, locals and the local institution plays a vital role for the welfare of the community. The study finds lack of coordination during the post-construction period. To quote Hilary Clinton sayings '*Women are the largest untapped reservoir of talent in the world; when women participate in the economy, everyone benefits'*. Despite the efforts to share the benefits directly with the project affected communities, in many cases women remain away from the circle. Therefore, it is the ethical responsibility of the developers to encourage the women to become self-reliant and self-employed.

Training and Capacity building has been the one of the important features of Benefit Sharing identified by the hydropower developers. The scheme under the Teesta V HEP was mostly targeted for the tribal population and Women while no specific scheme targeted to any of the category.

> Almost all schemes were targeted to the tribal population of the society but there are people from the other categories economically weaker and in need of support. So we used to include them with the tribal population. *NGO member Yuwa Jagriti Sangh (Teesta V HEP)*

Box 2: Self-Help Group: Support for improving livelihood condition

The welfare scheme to the communities in the project affected mostly targeted women community. Difficult was to convince women from rural areas to participate in the training session from the busy schedule (looking after family as well as working in the field). The participants were divided into 48 groups, popularly known as Self-Help Group (new concept in the state). Each group was trained according to their interest of work. Various activities like Bakery, cane bamboo training, farming, pickle making, wax making etc. Numerous benefits of SHGs: generate self-employment, supporting each other at the time of need, develop saving habit, financially better than earlier, participated in state-level programme.

Similarly, training was organized to skill the male population. Unlike the female population, male prefer to work independently rather than in a group and interested in those work with early return.

-Interview with Ongmu Bhutia, village panchayat as well as field staff in CSR department, 110 Chujachen HEP.

In recent years, the scope of short durational term does not prefer much by the locals due the changing market economy;

> The growing number of labour-intensive companies like pharmaceuticals, distilleries provides long-term employment opportunity to both unskilled and skilled workforce is preferred much by the locals. As such, there is no training organized by the project. *Project officials (Chujachen HEP)*

> Most of the villagers are engaged by the government scheme MGNREGA with 100 days of employment. There remain few interested participants in the training. *Project officials (Rongnichu HEP)*

While interviewing the women folks, the study found few similar cases interms of women participation in the employment sector in the study area of Teesta V HEP and Chujachen HEP. The handful of women from the economically deprived families (especially single mother) and women with better educational qualification were found working in the project offices. Whilst on the other hand, business and contractual work attracts larger numbers of women as a self-employment. Some of the women interviewees claimed that most of the jobs provided by the company are unsuitable for female workers. As one of the project officials[62] from the Chujachen HEP recalls;

> Few years back, one female engineer outperformed in the interview among all the candidates and posted in the dam-site. As a sincere and hardworking employee soon became the victim of eve-teasing by the local boys. Despite being protected by her co-workers many a times, after few months she become psychologically unhealthy and went for treatment and did not return back to her work again.

[62] Interview with a Human Resource official from Chujachen HEP on 12th of September 2017; He was a former employee of Teesta Urja HEP , joined the company few months back.

Key Observation

- Training and Capacity Building scheme should be selective taking into consideration the physical, social and economic condition of the area. The programmes should be equally distributed in all the project affected villages and not in the villages around the project office or the area with active organizations.
- Upskilling the people is the most durable benefits and extensively cover wider population. Training should be started from the early stage of the project which would fulfill the requirement of the project and continued even in the post-construction phase. Though this provision is included in the hydropower policy 2008, the concerned authority and the project proponent needs to follow the said provision at earliest.
- Separate livelihood scheme targeting the marginalized section of the society including women is required in private sector project.
- As suggested by the respondent, the project should invest in building institute which will up skill the people on a regular basis that would meet the true meaning of sustainable development (present and future generation).
- Corporate Social Responsibility commonly known as CSR, the only guiding mechanism for the community services and infrastructural development above the mitigation measures.
- The Management plan of the constructional phase and CSR after the operation should be clarify to the project proponent. The research indicates that both the under-construction and commissioned project employ CSR for their social activities.

- CSR is insufficient address the social issues of the project affected area mainly in the case when project is unable to generate profit after years of operation.
- The state institutional structure itself is the biggest barrier to the peoples as they do not mandate to update the national acts and nor have its own state policy.
- Average estimation of budget for the community development activities should be included in the EMP and the state monitoring committee should also take the charge of verifying the developmental activities by the project.
- A proper mechanism is required to define the affected area otherwise the fund may get distributed to the wider area and may the project affected families may be left out.

4.2.4 Environment related Benefits

The controversy over the dam-building in the Sikkim-Himalaya since last decades was more often perceived from 'Ethnic Environmentalism', which consider hydropower development as a threat to the culture, history and sacred landscape (religious belief) of the indigenous communities (Chettri 2017) especially to the Lepcha Communities who are believed be an animist (the nature worshipper). The importance to safeguard the environment received top most priority in the country's legal framework since several decades back through the formulation of different acts and polices as discussed in the previous chapters.

Almost all the interviewees from the project affected areas shows their concern over the impact to the environment with the commencement of the hydropower project as the impact of the project even continues in the post-constructional period. But most of the them fear of going against the project as one of the respondents says,

> Protesting against the project developer's means going against the government's decision and making one-self anti-party or may be anti-government.

During the interview, the project developer's accept the fact that 'constructional work often starts with the destruction', but claims that maintaining healthy environment as one of the top most priorities of the company which is implemented through several environmental protection measures. The implementation of Environmental Safeguards is found to be a joint responsibility of both the project developers and the state government. Rather than developer's direct involvement, the role of different departments under the state government seems to be more crucial to execute the environmental measures as identified in the project EMP at the cost borne by the project developers.

Payment for the management of Environment

The cost allocated for managing environment to the state government[63] forms a major part of investment from the project budget estimated in the EMP during the planning period. The project developers are of the opinion that an environmental measure (plantation drive) has improved the environmental condition of the project area thus contributing the state's '*Green Mission'*. The project developer's claims that they are abide by the several formal rules and regulations for the management of the environment and are penalized in case of failure to meet the said criteria.

Environmental management being the joint responsibility, the state government plays a crucial role in reducing the impact and maintaining the healthy environment.

> At the beginning of constructional work, the company submitted amount estimated cost according to the EMP for the Catchment Area Treatment. But

[63] Forest, Environment and Wildlife Management Department is the nodal agency for the management of the environment.

from the last few years, no work has been done by the state government. The unmaintained environment equally affects for the smooth functioning of the project. *Project Officials (Rongnichu HEP)*

Box3 : Features of Environmental Norms adopted by the Project under EMP

i. ***Compensatory Afforestation Plan*:** The Plan includes cost of afforestation which is double the forest land being diverted for the project.

ii. ***Catchment Area Treatment Plan*:** This plan involves the measures for soil conservation (catchment afforestation and civil engineering works).

iii. ***Biodiversity Conservation and Management Plan***: Includes Orcahidarium activities, work related to bio-diversity conservation, public awareness on conservation and training.

iv. ***Fisheries Conservation Plan***: includes hatchery, nursery ponds, rearing, nursery ponds, and rearing ponds.

v. ***Forest Protection Plan***: includes energy conservation measures, Landscaping and Restoration of construction areas and Green belt development.

vi. ***Public Health Delivery System*:** To check the various infectious diseases caused by the influx of outside population and vector borne disease with the creation of reservoir.

vii. ***Muck disposal***: It includes construction of approach road and maintenance, construction of retaining wall construction of gabion structures and transportation of excavated material.

viii. ***Rehabilitation and Resettlement Plan***: Land Acquisition and payment as per state government.

Throughout the interviews carried out in the project affected area, the complaint on the environmental damages were common among the respondent which affects every inhabitants living in an around the project site. The impacts of the project according to the respondents are drying up the springs, the diversion of river water through the tunneling and blasting during the construction period weaken the land stability, cracks in the land and houses above the tunnel and the impact to the aquatic life.

Another recurrent complaint was the unfulfilled 'Reservoir Rim Treatment' to be built on both sides of the river which is to be 2-3 km long. The respondent shows discontentment towards the promises remains unfulfilled.

> The developers assured us that Rim treatment would be done on both side of the river which not only protect the area from sliding but the beautification of the dam attracts tourist which further boost the local economy on a long-term basis. *Local Resident, Aapdara, (Teesta V HEP)*

> The protection wall built below the Dikchu Bazaar protects the area getting submerged as well as from sliding downward. *Local NGO personnel, Dikchu Bazaar, (Teesta V HEP)*

As stated by the respondent, the common initiative by the project proponents has been the 'plantation drive' mainly during the environment day.

> With the support of company, we have conducted plantation drive in the area especially on environment day. *Local NGO personnel, Rongli (Chujachen HEP)*

> I have heard that company pay for the management of the environment to the forest department. I won't say anything in this regard as it's between the state government and the project developers. *Local Resident, Zang, (Teesta V HEP)*

Interestingly, the study reveals that monitoring committee visiting the project site mainly evaluates the programs outlined in the EIA/EMP during the planning phase. The fact is that they fail to include the future impacts of the project as well as environmental protection measures from the human perspective. It even lacks the involvement of local communities and the administration.

> We are not empowered to monitor the project work mainly the social and environmental activities of the project. Neither the project developers nor the higher authorities shared project details and self-interest may put me into trouble. *Local officials, (Chujachen HEP)*

Key Observation

Most of the budget spend on various environment protection measures is based on the estimation made during the Environment Management Plan that only forms a part of compensation and mitigation programs, implemented to control the impact in the vicinity of the project site. Hence, it would not be justifiable to claim those plans as a part of Benefit Sharing mechanism. The commencement of the hydropower projects

restricts the rights of the local communities to utilize the natural resources especially those depending directly (livelihood source based on forest products such as forest products, fishing, quarrying etc) and indirectly (cultural and religious belief, considering land and water as a deity) on the natural resources. The study identifies that environmental benefit to the locals when the protection measure goes beyond mitigation and locals have rights to equal access to the resources.

It was much later that provision of Payment to ecosystem services is recognised in the state norms @ one paise per-unit of electricity generated to the state government only to those projects approved after 2008. Hence, no provision is found which directs the developers to invest which goes beyond the environmental mitigation measures. As said by one of the project officials, 'There are no such norms to provide separate revenue for the environmental protection and company is already paying 12 percent revenue as a charge of using the resources as well as the cost of damage caused in the project area'.

During the interview in the project affected areas, the most common issues in all the hydropower projects has been the rapidly drying of the natural springs due to the heavy tunneling, high intensity explosions in the tunnels and the landslides etc. and found people's allegation to be genuine as huge volume of water was flowing from the corner of the tunnel. Respondents hardly talk about the reduced volume of river water downstream of the river and its impact on the people. According to my observation, the reason may be; First, in hilly areas most of the settlements are developed on the higher region mostly practicing agriculture rather than those living along the river side. Second, the peoples are dependent on the spring and rain-water for irrigating the land rather than river water. Thirdly, river is important to them from

the religious and cultural aspect to all the communities of the state as they worship nature and most of the rituals are performed in the river (cremation) etc.

4.3 Issues and Concerns of Benefit Sharing Mechanism

The study has explored mechanism for sharing the benefits of the dams in the upper Teesta Basins and posits that the concept of Benefit Sharing in hydropower projects is completely new to the peoples including the government officials and project proponents. The locals are aware of the compensation and mitigation measures interms of the property and assets lost to the project and CSR as an additional investment to improve the livelihood conditions of peoples of project affected areas.

The argument supporting the Benefit Sharing concept is that it eventually brings win-win solution to every stakeholder involved in the hydropower development. During the interviews, the major concern of the members from the project affected communities including the political representatives and the NGOs personnel has been the impact of the project on the surrounding environment which further pose serious threat to the human society thus making their living more difficult and vulnerable. From the comparison made from the respondent's view from the two commissioned hydropower projects, it is noted that the environmental and social impact such as drying up of springs, sinking of the lands, reduce in the agriculture production, limited access to natural resources (river water to perform rituals, quarrying etc), unsatisfactory compensation rate, handful of employment opportunity, unfulfilled promises to the locals during the public hearing overshadowed the benefits shared by the developers to the locals.

It is observed that respondents find difficulties in differentiating the measures adopted by the developers to mitigate the damages caused by the project during and after the

constructional work and the different Benefit Sharing mechanism intended for the overall welfare of the communities, ensuring to improve the livelihood better than the pre-project. Therefore, the study urges the concerned plans and policy makers to clearly frame the mechanism that qualifies as short and long term Benefit Sharing which must be distinct from the compensation and mitigation measures.

Identifying 'affected' and 'local' Population

Dams with the elongated head race tunnel running below the surface in the mountainous region along with other project infrastructure covers a wider area which goes beyond the dam-site (Upper-catchment) and the power-house site (lower catchment) of the projects is demarcated as a 'project affected area' as said by the project developers. Going by the said demarcation, all the population living on the either side of the river are the 'project affected peoples' who indirectly or directly bear the cost of the adverse impact caused by the project. It is the ethical responsibility of the project developers to share its short and long term benefits mainly the CSR fund to the local communities that spread throughout the project affected area. Problem arises when the hydropower developers are unable to address the problem as well as satisfy the demand of the larger number of population residing in the project affected areas which often leads to unequal distribution. From the field survey, cases have been found were benefits shared by the developers get diverted to the less affected area mainly in the area with influential leaders or active local NGOs thereby leaving the livelihood of the severely affected communities more vulnerable which is the major reason of conflicts. Few cases have been reported by the villagers that the company fund few infrastructural developments in the area which is far away from the project-site.

It is equally difficult for the project developers to manage the fund for the wider area especially when the demands are placed by the political representatives and the local authorities. As one of the project officials says that, 'as the project site falls in the three district of the state which means company has to be follow the order of three District Collector as well as demand placed by numbers of MLAs and Ministers of the project area'.

The other issues identified from the field investigation using the common phrase- preference to the 'locals' in case of preferential hiring and contractual work. The question that arises in my research is- Who is local? Does it involve only those people living in the vicinity of the project or the population of Sikkim as a whole? Majority of the respondents refer locals as the population of Sikkim as a whole rather than being specific to the project affected peoples. Though much of the preference is given to the landowners or the families affected due to the land acquisition process.

As a good practice, the developers should ensure that benefits provided should reach those families/areas whose livelihood has been directly or indirectly affected by the project. Lesson learnt from the other countries, the whole project affected families/areas are categorized as 'Severely affected', 'Moderately affected' and 'Less affected' so that programmes are implemented accordingly.

Post-Project Displacements remains unrecognized during the planning period

Infact, the identification of environmental and social impact of the hydropower projects is found to be more pronounced throughout the planning and the constructional phase whilst scant attention is paid to the impact (displacement) caused by the project during the operation phase. As reported by the residents of Aapdara and Jang village, grievances of locals living everyday in fear remains unheard by the

project developers and the state government. The respondent from the village lying above the dam and the head-race tunnel of the Teesta V HEP have no choice rather appeal the developers for the early acquisition of the land so that the compensatory amount can be further invested to relocate in better place.

As Huber (2013) from the study over the Teesta V HEP cited the physiographic features of the hilly areas as one of the reason which she states that most of the villages are at the higher mountainous region with less prone to submergence/ no settlements in the submerged area (ibid). From the fieldwork there was number of houses severely affected especially due to the force of water flowing in the tunnel. Many families were displaced, their houses were demolished and many more are likely to be displaced soon. The post- operation impacts of the project had not been foreseen by the EIA, inspite the village being located above the dam and head-race tunnel. As a result, post-project displacement is not accounted for the Rehabilitation and Resettlement policy except the compensation for the procurement of land or the damages they caused.

Corporate Social Responsibility provision insufficient for local area development

Significant contribution for the local area development which includes livelihood trainings, community services and infrastructural development forms a major initiative under the company's CSR activities. In Sikkim's Hydropower projects, CSR is the only mechanism through which company invest directly to the local communities. The study figures out some of the issues regarding the way CSR has been implemented by the three project developers. The CSR activities for the social development in the project affected areas funded from the project cost and benefit which is popular among the locals. The public sector companies are better than the private companies towards its societal responsibility. There is no estimated budget

allocated during the construction of the period that means, CSR activities totally depends on the companies interest and the demand by the locals. Few cases have been traced out from the interviews where CSR fund have been diverted to the communities outside the project affected areas. Majority of the respondent including the government officials and the local representatives are unacquainted with the process to avail the benefits.

Despite generating electricity by the Chujachen HEP since 2013, no CSR activities can be traced in the project affected area during the operation phase. The project developers sketch out several factors such as actual cost was double the estimated cost, energy production lesser than actual estimated production etc which hinders them to earn profit after years of operation.

When people from project affected areas were asked about the demands to the company, two things have been noted here. One, most of them demands contracts for the constructional work which is more individualistic in nature. As CSR programme are demand based so interest of the locals largely matters. As one local villager said:

> Many a times, infrastructural development scheme from the developers get cancelled as a result of conflicts between the landowners and the person who make a project.
>
> There were several numbers of peoples demanding the developmental activities or mitigation measures with a motive to work as a contractors and less as a societal work. *Local resident, Rakdong, (Teesta V HEP)*

Two, the companies are perceived as a major funding agency to finance programs such Tourism festivals, observing Independence day, Bhanu Jayanti, celebrating festivals, Gandhi Jyanti, etc.

> Every year more than lakhs has to be allocated separately for the purposing of donating in the several festivals and programmes observed

within and beyond the affected area. Denying those funding may cost heavy to the company so we have no other budget than using the CSR fund. *Project officials, (Rongnichu HEP)*

Since the provision of 2 percent fund for CSR is not applicable, the company is spending more than lakhs in donation for different programmes organized in the project area or any other part of the state that could have been used for the developmental activities which can result into long term benefits to the society. *Project officials, (Chujachen HEP*)

Based on the observation from the field investigation, few things need to be taken into consideration while planning for the local development:-

- The mechanism of Corporate Social Responsibility alone is insufficient especially:
    a. When the royalty shared by the developers gets saturated within the state government;
    b. There is no other provision that ensures direct funding to the local affected communities;
    c. The provision of CSR is not applicable in the case where developers are unable to generate profit;
- The local communities must be clearly notified about the provision of CSR scheme.
- Involvement of local communities from all the sections of the society for the implementation of CSR activities that would cater the need of the communities
- Importantly, the plans and policies of the project must be aligned with recent updated acts and polices of both federal and provincial government.

- ❖ The company needs to differentiate between the Company's Management Plan and the Corporate Social Responsibility. The programmes implemented during the constructional phase forms a part of Management Plan and CSR after the operation of the project.

This study claims that hydropower projects in Sikkim initiated CSR activities from the constructional phase especially in the private sector project. It is perceived as a Social tool for the proper functioning of the project without any societal disturbance rather than the local area development. This research suggests that provision for local development fund should be continued in the operation even if the project is unable to earn the net profit from the energy production. It is the rights of the local communities to receive a part from the income of the projects as benefits of local natural resources used. The concept of the 'Profit Sharing' during the commercial period should not be based on CSR.

Lack of Monitoring Mechanism

As mentioned in the previous chapter, the sustainable development of hydropower projects involves the imperative role of different institutions in monitoring and evaluating the social and environmental aspects of the project during the planning, constructional and operational phase of the project. The case study reveals that the involvement of different institutions in the hydropower development is more confined during the planning and the early phase of construction period. As a result, the numbers of promises made to the locals during the public hearing are still not fulfilled. The study identifies the lack of government intervention in cross-check the social initiatives of the project. Even the central and state monitoring committee formed to verify the environmental impacts of the project are found limited with the project site whereby concern of the locals seems to be less significance. The social

activities commonly performed under the CSR were found weak and not equally distributed over the project affected areas and in some cases, when the schemes were cross-checked, some of the programmes were only found documented in the project report.

The local authorities including the panchayats and the government officials feel powerless in their position versus the higher authorizes or the powerful parities who visualize the water as a major source to make the state self-reliant

Even the lack of systematic monitoring and evaluation mechanism even constraint to evaluate whether the adopted mechanisms have become benefits or threat to the society as a whole remained unanswerable. Therefore, there is a need of active participation of the different department which would equally involve the local communities in verifying the work of the project and also to plan the better mechanism that suits the local communities that result into the sustainable hydropower development.

Comparative Assessment

Based on the field study, the research indicates that benefits shared by the hydropower projects largely depend upon the ownership pattern. At present, the major hydropower projects are owned by the public and private enterprise with an installed capacity more than 25 MW. Other type institutional ownership has also emerged in the state i.e. Joint ownership by the private enterprise and the state government. But the hydropower projects selected for the case study to understand the Benefits Sharing is based on two type of ownership pattern.

Table 4.5: Summary of Benefit Sharing Practices based on the Ownership Pattern

Ownership Structure	Benefit Sharing practices
Public enterprise under the Government of India	One time compensation, strictly follow norms outlined in the policy- regular flow of fund to the state government and CSR activities to the local communities , permanent and temporary employment, contractual work.
Independent Power Producers	One time compensation, No budget for CSR activities after the completion of the project (Chujachen HEP), Regular flow of royalty to the state government but not the local communities, employment and contractual work. Some funds are MoU as a major tool

Source: Author's Self-Compilation

Although study takes into accounts the public and private sector projects and their way of sharing benefits with the locals which is based totally on the people's opinion. Majority of the respondent from the project affected area of both the public and private sector project are of the opinion that public sector has been better in dealing with the locals. The NHPC being the central government enterprise with more than 20 hydropower projects throughout the country has its own plans and polices such as Corporate Social Responsibility, Rehabilitation and Resettlement plan and the environmental management strategy aligned with the Acts, Policies notified by the central ministry. The public sector project is more reliable than the private projects. The Teesta V project was commissioned according the estimated time and cost (very slight variation), able to implement CSR activities. Whereas, both the hydropower under study is facing time and cost overrun. In the case of Chujachen HEP, the actual cost of the project is double the estimated cost whereas the Rongnichu HEP failed to operate in the expected date of commissioning (2015) and further extended to operate by December 2018.

In the public sector, the social developmental activities are conducted in consultation with local political representatives, local authorities (demand-based) and in collaboration with the local NGO (need-based) while the private developers perform social activities (demand and need based) mostly during the construction which is said as one way of social security.

The public sector project conduct stakeholder's meeting in project house which involves few selected government officials from different department, District Collector, political representatives, teachers and local authorities from the project affected area to disclose the booklet of CSR of last three consecutive years and to discuss the next CSR plan. As one of the teacher from the Lum School said;

> For the first time, our school was invited for the stakeholder's meeting by the NHPC on the CSR activities. Being the in-charge of the school, I attend the meeting and got an opportunity to place a demand for the school and the project officials assured me to fulfill in the next financial plan period.

Addressing Grievance

There is no grievance addressing mechanism developed to handle the public complaints. The minor complaints by the locals are dealt by the Sub-Divisional magistrate while in case of the major issues, the public lodge their grievance to the Direct Collector. Based on the views from majority of the respondent, District Collector is the most influential body authorized to investigate the matter and provide rights to the victims of the project. Some of the respondent finds District Collector being flexible to the project developers rather than supporting the local communities especially at the time of land acquisition process when the District Collector called the local landowner as 'tenants of the land' who pay the rent to the state government

for using the land. As the hydropower development is the government's interest to become self-reliant.

4.4 Conclusion

The varying Benefit Sharing adopted by the public sector and private developers is recollected from the opinion of project stakeholders which includes landowners, project affected communities, local authorities (panchayats, government officials), NGOs and project proponents. The research showed that the concept of Benefit Sharing from the hydropower projects to the local communities was entirely new in the Sikkim's Hydropower projects. When the people were asked about the benefits from the projects, the common answer was the cash received by the individual whether it may from the land they sold or may be earned from the employment and contractual rather than one talking about the development interms of infrastructural and other services provide to the community as a whole.

The research finds difference in the opinion to Benefit Sharing from the hydropower to the different group of stakeholder's, discussed in detailed below;

For the *Government*, Benefit Sharing is a tool for the sustainable development approaches to make the state self-reliant through the revenue shared by the developers and also to foster the local area development with an opening of new market economy through the creation of job vacancy to all section of the society (skilled, unskilled), local contractors, commercialization of local products (dairy, vegetables).

To the *project developers,* Benefit Sharing is a way of maintaining good relation with the local communities of the project affected areas so that locals may not obstruct the dam construction and operation as well as an opportunity for the local area development. From the interview with the project officials, the following views has

been identifies which includes, Compensation and mitigation measures, Rehabilitation and Resettlement, Royalty to the state government, CSR, job creation, contractual work.

The *local communities* are entangled between the positive and negative impact of the project to the environment and its people which make them difficult to understand what really qualifies 'Benefit-Sharing'. Benefit sharing to the locals simply means the opportunities assured by the developers during the planning period rather than those mentioned in the country's acts and policies. To the locals individual opportunities with the monetary value seems to be more importance than that of social development as a whole. Undoubtedly, the royalty system is put at central of all the benefits then followed by those facilities provided the landowners and few to the other local communities mainly through employment opportunities, contractual work and the change in the local economy.

Respondent among the public sector has been much better in delivering the benefits with the locals and even maintain a good terms with the government officials of the project affected area by involving them in the stakeholders meeting. Response to the projects and its benefit mechanism came from both the project supporters and the project opponents. The most important benefits to those supporting the project was for the continuous streaming of revenue to the state government, the budget used for the overall development of the state but agreed that certain amount of revenue should be given to the project affected areas as a cost of damages and livelihood lost by the people.

Findings of this study highlighted those opinions about the hydropower projects are divided into two groups; One, those favoring the projects as a government interest to

earn revenue as a medium to develop the state as a whole and also considering as an opportunity to the locals to become economically viable mainly during the constructional phase. Whereas on the other hand, people claim hydropower projects benefits to the certain pockets of the people, majority of them who were already financially strong and most of the negative impact have to be borne by the poor people.

The study indicates many of the issues related to the hydropower projects and the Benefit-Sharing mechanism which needs a better solution from the collaborative work of all the stakeholders involved in the hydropower development (direct and indirect). The study urges the different department to strictly monitor and evaluate the implementation of the social and environmental measures adopted by the developers. The locals falsify the notion, believing that developmental activities from the project developers are based on the demand placed by the locals during the Public hearing. Due to the lack of the information, they fail to grasp the benefits if they would have clearly demanded during the public hearing and demanding in the constructional and operational phase doesn't work.

What emerged from the finding the lack of knowledge among the locals for what they deserve as recognized by the country's acts and polices; second, the government being more flexible towards the developers as revenue from the project became the top most priority to make the state self-reliant; third, local authorities and panchayats finds themselves powerless and unauthorized to govern the project; lastly, monopoly of the developers mainly the private enterprise as there is no institution to monitor their work.

Chapter 5

CONCLUSION

In recent years, the concept of Benefit Sharing has been widely accepted in India's biological and mining resources with its clear legal and regulatory framework. Despite the international recognization of Benefit Sharing in the hydropower sector since the late 1990's, the country still lacks similar efforts of legally defining the concept of Benefit Sharing. But, it would be unjust to say that the absence of legislative framework in the hydropower fails to include the provision that ensure fair and equitable benefits to the local communities. Hence, it can be said that various mechanism has evolved over a period of time in the legislation that intend to support the local communities. But, the formal concept that clearly defines the Benefit Sharing in the hydropower sector is yet to emerge.

Inorder to understand the various implications of Benefit Sharing system in the hydropower sector of Sikkim, the whole study is divided into three steps: As a first step, the study looked into the several social and environmental norms that govern the dam-building process and precisely examine the mechanisms of Benefit Sharing in the post-colonial era. Second step, the study identifies the institutions (Central, State and local including the local communities) involved in the process of hydropower development most importantly sharing benefits to the local communities; Third step, the study focus to examine various Benefit Sharing mechanism accrued by the local communities living

near the project site of three HEP of Sikkim namely, Teesta V HEP, NHPC, Chujachen HEP, Gati Infrastructure Pvt.Ltd and Rongnichu HEP, MBPCL.

The leaders of decolonization era were inspired by the vision of 'Making New India', actively promoted Hydraulic mission through the construction of multi-purpose dams for the public purpose. The construction of large dams was considered as a need for the country's social and economic development. For long, both the country's fundamental and legislative rights only ensured cash compensation based on market value to the landowners. The damages caused to the environment and livelihood simply became the sacrifice for the nation-building process. It was much later in 1967, the enactment of T.N Singh formula adopted one job scheme to each family displaced which goes beyond one-time cash compensation. The most painful irony, in fact, was the inability of the acts and articles which fails to include those affected peoples without the entitlement of land as well as lacks the national agenda to protect and conserve the environment. Many a times cash compensation was found unproductive as most of the people invest in buying tangible goods that fails to restore the livelihood than the pre-project livelihood conditions.

The conscious for the environmental protection started grooming up after India became the part of United Nation Conference on Human Environment, Stockholm, resulted into inception of National Committee on Environment Planning and Coordination. This was a major landmark that led to the formation of several acts and policies which precisely deals with the environmental measures such as Water (Prevention and Control) Act of 1974, Environment (Protection) Act of 1986, National Forest policy of 1998 and Environment Impact Assessment. But what was missing in the legislation is the similar

effort institutionalizing the social norms in the developmental activities despite the growing awareness among the civil society. The only change witnessed was the provision of land to land compensation introduced in the final order of Narmada Water Dispute Tribunal Gazette.

Till the early 1990s, beneficiaries from the hydropower projects were considered to cover the Country's whole population rather than emphasizing on certain pockets of affected population. The study found four forms of mechanism entitled to the local communities by the legislation enacted since the late 90s: a) Involvement of locals in the decision-making process; b) Monetary benefits as Local Area Development Fund; c). Non-monetary benefits (investment in community service and infrastructure development) commonly known as CSR and d). Sharing project output (energy production). It can be said that country's legislation identifies locals as a project stakeholders ensuring to provide fair and equitable benefits from the project inreturn of the damages suffered as well as sacrificing their rights over the use of natural resources.

The adoption of liberalization policy in the energy sector triggered the rush for the hydropower development in the geopolitically strained and historically isolated region of the Eastern Himalaya, Sikkim. The objective to meet the country's energy demand and to generate huge amount of the revenue to the state government 'a mission of Hydro-Dollars' was the major driving force behind accepting large numbers of public and private developers within a short span of time. Out of the total 19 ongoing and proposed project in the state, the state government signed 15 MoUs from 2000 to 2008 and many numbers of projects were terminated as it fails to meet the criteria put forth by the state government.

It is observed that 12 percent of revenue paid by the developers dominates to be the major benefits to the state government with the constitutional rights over the water resources, just remain as an economic rent to make the state self-reliant. The study claim this revenue as 'economic rent' paid to the resource owner or the utilization of the resources. As such, there is no provision in the state that further allocates the revenue to the locals. The other direct benefits noted from the respondents were schemes under Companies CSR, employment opportunities and compensation and Rehabilitation and Resettlement mainly to the landowners, contractual works to few of the locals.

The local communities with ethical and legal rights over the resources avail much of the benefits during the constructional phase such as demand of large number of employment of both skilled and unskilled, contractors for the constructional work, other economic activities etc which get limited by the time its reaches the operation stage. Such cases were found more common in the private sector project.

Notwithstanding the environmental and social issues raised by the locals, the respondent finds public sector project better in delivering the benefits to the local communities than the private sector. The private developers are much profit-oriented whereby much of the social activities are conducted in the planning and early stage of construction which is basically referred as risk-reduction method rather than justifying the rights of the local communities.

Despite the variety of models and practices of Benefit Sharing evolved over the period of time in the country's legislation that ensure long-term Benefits to the local communities, the study finds no such efforts neither by the state authorities nor by the developers in any of the three HEP taken as case study. First, the state government (Energy and Power

department) is the sole owner of the 12 percent revenue paid by the developers with no further allocation. Second, public hearing perceived as a participatory decision-making process simply became a medium to get clearance from the landowners with several faulty promises made to the innocent people which remain unmet even after several years of operation.

Although the legal and regulatory framework are key factors affecting the Benefit Sharing arrangement but equally important is to have strong institutions at central, state and local level that guides the hydropower developers for the successful implementation of various Benefit Sharing programmes identified in various acts and policies. The study finds no institutions particularly working for monitoring the mechanism to the local communities. The institutions involved in the hydropower development were directly or indirectly involved to implement various measures of benefits to the local communities. The Benefit Sharing to the local communities largely depends on the developers and political will rather than negotiation between the developers and the locals. Most importantly the involvements of the local institutions were found to be more limited to the planning and construction phase. After commencement of the project, the interaction gets polarized between the developers and higher authorities. The local community does not find its way in the institutions governing the hydropower development and its Benefit Sharing regime.

Benefit Sharing mechanism in the Sikkim's Hydropower Projects evolves in three different time frames i.e. planning, construction and operation stage. The fact of hydropower development is that local communities avail much of the direct and indirect benefits from the project during the constructional stage. Some of the benefits as identified

by the respondent were: health, education, capacity building and infrastructural development.

In Rongnichu HEP, except the landowners all the local communities is kept away from the development activities and social activities were found minimal. Benefit Sharing mechanism to the local communities during the operation stage is directly proportional to the profit earned by the project that is implemented through the Companies CSR scheme.

The state lacks its own formal hydropower policy that clearly guides all the stakeholders involved in the hydropower development. Most of the social activities performed by the project developers are based on the MoU, EIA/EMP that fails to include the mechanism which goes beyond the compensation and mitigation measures. The other reason identified is the failure of the government to adopt the new mechanism of Benefit Sharing such as direct share with the local communities, provision of electricity under RGGVY in those projects approved before the enactment of polices that includes the measures of Benefit Sharing. It is important to clarify that the policy enacted should be applicable to both the proposed and ongoing projects.

This study finds the existing environmental and social norms as 'top-down' approach, enacted and implemented by the country's bureaucrats and politicians. The study suggests to follow 'bottom to top' approach that would be entirely based on the need and interest of the local communities. Some of the measures of Benefit Sharing are clearly enunciated in the country's acts and policies which move beyond compensation and mitigation. Now it's time to learn lesson from other nations/states that have successfully implemented Benefit Sharing in the hydropower sector and formally introduce the concept that would ensures the rights of the local affected communities.

Bibliography

Acosta et.al. *Benefit-Sharing Mechanism: An Introductory to planning and Implementation.* Lima, Peru: CONDESAN. 2014

Arora, Vibha. "Gandhigiri in Sikkim". *Economic and Political Weekly* 43(2008): 27-28

Arora, Vibha. "Unheard Voices of Protest in Sikkim". *Economic and Political Weekly* 42(2007): 3451-3454

Arora, Vibha. "There are All Set to Dam (n) Our Future: Contested Development through Hydel Power in Democratic Sikkim". *Sociological Bulletin, Indian Sociological Society* 58 (2009): 94-114.

Asian Development Bank. Safeguard Policy Statement. 2009 http://www.adb.org/sites/defaullt/filesinstitutional-document/32056/safeguard-policy-statement-june2009.pdf (Accessed on 28th July 2107)

Bandhyopadhyay, J. B, Mallik, M Mandal and S Perveen. "Dams and Development: Report on a Policy Dialogue." *Economic and Political Weekly* 37(2002): 4108-4112.

Balasubramanya, Soumya. Mark Giordano, Tashi Sherpa and Wichelns, Dennis. "Sharing Hydropower Revenues in Nepal, over time and across districts and regions" *Water Resources and Rural Development* 4(2014): 104-111. http://dx.doi.org/10.1016/j.wrr.2014.10.007 (Accessed on 19th March, 2017).

Biswas and Tortajata. "Development and Large Dams: A Global Perspective". *International Journal of Water Resources Development* 17(2001):9-21

Candy, Thomas. Rodney J. Keenan, R.John Peteram and Peter Shepherd. "Impacts of Hydropower Development on Rural Livelihood Sustainability in Sikkim, India: Community Perceptions." *Mountain Research and Development* 32 (2012): 117-125. http://dx.doi.org/10.1659/MRD-Journal-D-11-00103.1. (Accessed on 26th September, 2016)

Central Electricity Authority. *Status of Hydro Electric Potential Development*. 2012. http://www.cea.nic.in/reports/hydro/he_potentialstatus_region.pdf (Accessed on 20th August 2017)

Central Electricity Authority. Annual Report 2014-2015. 2016 http://www.cea.nic.in/reports/annual/annualreports/annual_report-2015.pdf (Accessed on 20th August 2017)

Centre for Science and Environment. *Sharing the Wealth of Minerals: Policies, Practices and Implication.* http://cseindia.org/content/sharing-wealth-minerals-policies-practices-and-implications (Accessed on 14th December 2017)

Central Water Commission. *Guidelines for Environmental Monitoring of Water Resources Projects*. Environment Management. New Delhi. 1998.

Choudhury, Nirmalya. "Development of Hydropower in India: Between Global Norms and Local Actions". M.Sc Dissertation. Deutsches Institut furEntwicklungspolitik (DIE), Berlin: 2013.

Creswell, John W. *Research Design Qualitative, Quantitative and Mixed Methods Approaches*. Fourth ed. Thousand Oaks. London, UK: Sage publication, 2014.

Cernea, Michael. "Financing for Development Benefit-Sharing Mechanisms in Population Resettlement" *Economic and Political Weekly* 24 (2007): 10361046. http://www.jstor.org/stale/4419387. (Accessed on 20th March, 2017).

Chapman, Sophie and Martijin Wilder. "Defining the legal elements of benefit sharing in the context of REDD+". *Carbon and Climate law* 8 (2014): 270-281. http://www.jstor.org/stable/2432244297 (Accessed on 16th October 2017)

Dharmadhikary, Shripad. "Mountain of Concrete: Dam building in the Himalayas". *International Rivers, Berkeley Way Berkeley,* California .2008.

Dutta, Soumik. "Rs 38,420 crore: Little Sikkim's Huge Growth Gamble" *India Spent.* 2015. http://www.indiaspend.com/cover-story/rs-38420-crore-little-sikkims-huge-growth-gamble-96374 (Accessed on 5th November 2017)

Energy and Power Department. *Energy and Power Sector Vision 2015*. Brochure. Government of Sikkim. 2010.

Egre, Dominique. *Benefit Sharing Issues*. Dams and Development Compendium on Relevant practices for improved Decision making. Second stage, revised final report-." Montreal, Canada: UNEP, 2007.
http://new.unep.org/…/Report_BS.pdf. (Accessed on 31st January 2017)

Gati Infrastructure Private Limited. *Six Monthly Compliance Report*. http://gatiinfra.com/wp-content/financials/CHEPP/April-1-2013%20to%20Sep-30-2013/SIX%20MONTHLY%20REPORT%20CHEPP,%20April-1-2013%20to%20Sep-30-2013.pdf (Accessed on 10th November 2017)

Gati Infrastructure Private Limited. *Six Monthly Compliance Report*. 2017. http://gatiinfra.com/wp-content/uploads/2017/09/SIX-MONTHLY-REPORT-CHEPP-Oct-1-16-to-March-31-2017.pdf

Government of Arunachal Pradesh. *Hydropower Policy 2008*. Department of Hydropower Development. 2008.
http://www.arunachalhydro.org.in/pdf/Monitoring/HydroPowerPolicy2008.pdf (Accessed on 30th July 2017)

Government of Arunachal Pradesh. *Hydro Electric Power Policy Arunachal Pradesh*. Department of Power. 2008.
http://www.arunachalhydro.org.in/pdf/State%20Mega%20Hydro.pdf (Accessed on 30th July 2017)

Government of Himachal Pradesh. *Power Potential at a Glance*. Department of MPP & Power". (n.d)
http://admis.hp.nic.in/doe/PPG.html (Accessed on 30th July 2017)

Government of India. *The Forest Conservation Act*. Ministry of Law and Company Affairs. New Delhi: 1980.
http://forestsclearance.nic.in/writereaddata/ACT/Forest%20(Conservation)%20Act,%201980%20Gazetted%20Notiofication.pdf (Accessed on 15th June 2017)

Government of India. *Electricity Act*. Ministry of Law and Justice. 2003.
http://www.cercind.gov.in/Act-with-amendment.pdf (Accessed 24th March 2017).

Government of India. *National Electricity Policy*. The Gazette of India. Part I. Ministry of Power. New Delhi; II, no, 23 (2005).
http://www.derc.gov.in/ActsPolicies/ActsPolicesfiles/National%20Electricity%20Policy.pdf. (Accessed on 24th March, 2017

Government of India. *Hydropower Policy*. Ministry of Power. 2008 http://ielrc.org/content/e0820.pdf (retrieved on 02nd September, 2016).

Government of Sikkim. *The Sikkim Land (Requisition and Acquisition) Act*. 1977. http://www.lawsofindia.org/pdf/sikkim/1977/1977SK1.pdf (Accessed on 21st November 2017).

Government of Sikkim. *Hydropower Policy*. Energy and Power Department. Gangtok: 2008.

Government of Sikkim. *Performance Review: Audit Report*. Energy and Power Department. Gangtok: 2009. http://www.siblac.org/CAG_sikkim_rep_2009_civil_chap1.pdf (Accessed on 20th October 2017)

Government of Uttarkhand. *Policy for Harnessing Renewable Energy Sources in Uttarakhand with Private Sector /Community Participation*. (n.d). http://www.ahec.org.in/wfw/web_ua_water_for_welfare/power/25_MW_Plus_Policy_of_Uttaranchal.pdf (Accessed on 11th November 2017).

Hass, Lawrence. "Improving Benefit Sharing around Large Dams." In *Sharing the Benefits of Large dams in West Africa*, by Skinner et al., 22-43. London, UK: International Institute for Environment and Development, 2009(a). http://pubs.iied.org/pdfs/12555IIED.pdf. (Accessed on 23rd July, 2016).

Hass, Lawrence. "Introducing Local Benefit Sharing around the large dams of West Africa: Drawing from the regional experiences." Draft final report, International Institute for Environment and Development. 2009 (b).

Huber, Amelie. "Contesting Dams and Democracy: State-Society Interactions over Hydropower Development in Sikkim, Northeast India." M.Sc thesis. Wageningen University, 2012.

Huber and Joshi. "Hydropower in Sikkim: Coercion and Emergent Socio-environmental Justice". In *Water Conflict in Northeast India: A Compendium of Case Studies*, by Partha J Das, Chandan Mahanta, K.J Joy, Suhas Paranjape and Shruti Vispute. Pune: Forum for policy Dialogue on Water Conflicts in India. 2013.

International Energy Agency. *Hydropower and the Environment: Present Context and Guidelines for Future Action*. IEA, 2(2000). https://www.google.co.in/url?Fwww.ieaWBRnYIbR8y-x8t6pDYhBNA. (Accessed on 22nd March, 2017).

Iyer, Ramaswamy. *Water Perspectives, Issues and Concerns*. Thousand Oaks. California: Sage Publication, 2003.

International Hydropower Association. *Sustainability Guidelines*. Andrew Scanlon. Sutton, UK. IHA, 2004.

Jones, Peris S. "Powering up the people? The politics of indigenous rights implementation: International Labour Organization Convention 169 and hydroelectric power in Nepal". *The International Journal of Human Rights*, Routledge. 16, no. 4 (2012): 624 –647.
http://dx.doi.org/10.1080/13642987.2011.627175. (Accessed on 31st January, 2017).

Joy, K.J. Chandan Mahanta, and Partha, J.Das. "Understanding Water Conflicts in Northeast India." In *Water Conflict in Northeast India: A Compendium of Case Studies*, by Partha J Das, Chandan Mahanta, K.J Joy, Suhas Paranjape and Shruti Vispute. Pune: Forum for policy Dialogue on Water Conflicts in India, 2013.

Jie, Fan. Zhenghai, Han. Kerong, Sheng and Sun, Wei. "Benefit Sharing Mechanism of Hydropower Development: Nujiang Prefecture in Yunnan." *Journal of Resources and Ecology* 4, no. 4(2013):361-368.
http://agris.fao.org/agris-search/search.do?recordID=US201600023391 (Accessed on 17th May, 2017).

Karambelkar, Surabhi. "Hydropower Development in India: The legal economic design to fuel Growth? *Natural Resources Journal* 57 (2017): 361-394.

Khagram, S. "Dams and Development: Transnational Struggles for Water and Power". New Delhi: Oxford University Press. 2004.

Khatun, Sophia and Cimato, Federica. "Benefit sharing practices in Himachal Pradesh: Observation from the field." *Centre for Inclusive Growth*. Nepal: 2013. http://larr.org.in/images/Benefit%20Sharing%20Report%20%20Himachal%20Pradesh.pdf. (Accessed on 21st November, 2016)

Khawas, Vimal. "Benefit Sharing in Hydropower Projects: The case of CSR in the Upper Tista Basin, Eastern Himalaya." Paper presented at International Workshop on Benefit Sharing in Hydropower: Examples from Nepal and implications for other countries in the Hindu Kush Himalaya. Kathmandu: ICIMOD, June 27-28, 2016.

Klingensmith, D. "*One Valley and Thousand Dams, Nation and Development".* New Delhi: Oxford University Press, 2007.

Kvale, Steinar and Brinkmann, Svend. "Interviews: learning the craft of qualitative research Interviewing." Second edition. Los Angeles: Sage Publications, 2009.

Lama. M.P. "Sikkim: Human Development Report-2001 Gangtok and Delhi: Government of Sikkim and Social Science Press". 2001.
http://hdr.undp.org/en.reports/national.asiathepacific/india/india_sikkim_2001_en.pdf (Accessed on 12th September 2017)

Lepcha, Tseten. "Hydropower Proejcts on the Teesta River: Movements against Mega dams in Sikkim." In *Water conflicts in Northeast India: A Compendium of case studies,* edited by Partha J Das, Chandan Mahanta, K.J Joy, Suhas Paranjape and Shruti Vispute. Pune: Forum for Policy Dialogue on Water Conflicts in India, 2013.

Mann, P. "Resettlement and Benefit-sharing practices in Vishnugagh Pipalkoti HEP, India". In *Resettlement, Rehabilitation and Benefit Sharing in Infrastructure Development,* edited by Nair. Journals of Management 44, no.1 (2014): 36-37.

MBPCL. "Clean Development Mechanism and Project Design Documents Form (CDM-PDD)" 2006.

McDonald, Mott. "Enhancing Development Benefits to Local communities from Hydropower Development." Washington, DC: The World Bank, 2009.

Men, Prachvuthy. Vathana Thun, Soriya Yin and Louis Lebel. "Benefit Sharing from Kamchay and Lower Sesan 2 hydropower watershed in Cambodia". *Elsevier* 4(2014): 40-53.
http://doi.org/10.1016/j.wrr.2014.10.004 Accessed on 10th November 2017.

Milewski, Joseph. Dominique Egre and Vincent Roquet. "Dams and Benefit Sharing: Social Impacts of large dams Equity and Distributional issues." Hydro-Quebec, Canada: Contributing paper to WCD report, 1999.
http://services.iriskf.org/data/articles/Document1362006580.2282373.pdf. (Accessed on 17th August, 2016).

Mokorosi, Palese and Zaag, Pieter. "Can local People also Benefit Sharing in Water Resources Development? Experience from the Orange- Senqu River Basins." Malawi; UNESCO-IHE Institute for Water Education, 2006.
url:http://rlarrc.org.in/images/Benefit%20Sharing%20in%20Water.pdf. (Accessed on 22nd November 2016)

MoEF. "The Environment (Protection) Act, 1986". Government of India, New Delhi: 1986.
http://www.envfor.nic.in/legis/env/eprotect_act_1986.pdf (Accessed on 2oth August 2017).

MoEF. "National Forest Policy". Government of India. New Delhi. 1988.
http://www.moef.gov.in/sites/default/files/introduction-nfp.pdf. (Accessed on 15th June 2017).

MoEF. "National Conservation Strategy and Policy Statement on Environment and Development". Government of India. New Delhi: 1992.

MoEF, "Enviroment Impact Assessment". Government of India. 2006. http://www.powerdepartmentsikkim.com/HEPDevelopmentTerms.aspx accessed on 14th July 2017.

MoRD. "National Rehabilitation and Resettlement Policy, 2007". Government of India. New Delhi: 2007.
http://www.dolr.nic.in/NRRP2007.pdf (Accessed on 10th June 2017)

Ministry of Law and Justice. "Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act,".2013.
http://indiacode.nic.in/acts-in-pdf/302013.pdf (Accessed on 12th June 2107)

MoCA. "Companies Act". Government of India. New Delhi: 2013.
http://www.mca.gov.in/Ministry/pdf/CompaniesAct2013.pdf (Accessed on 20th August 2017).

NHPC. *Six Monthly Progress Report on Environmental Aspects* 2017.
http://www.nhpcindia.com/six-monthly-progress-report.html (Accessed on 7th November 2017)

MBPCL. *Six Montlhy Compliance Status Report on Environment Clearance.* 2017
http://mbpcl.co.in/Compliances/Six%20month%20EC%20compliance%20report%20upto%20June%202017.pdf

Paiement, Jason and Thibault Martin. "Hydropower and affected communities: International Experience with Benefit Sharing". University du Quebec en Outraouasis. Benefit Sharing Synthesis Report, 2009.

Pant, Dhurba. Neena Rao, Surya Upadhyaya and Bhaskar Karkey. "Benefit Sharing Mechanism in Hydropower Projects: Lessons from Nepal and India". In *Research Insight on climate change and water in the Hindukush Himalayas*, edited by Vaidya, Ramesh & Sharma. Eklabya, 145-160. Kathmandu, Nepal: ICIMOD, 2014.

Rao, Neena. "Benefit Sharing Mechanism for Hydropower Projects-Pointers for North-East India*."* In *The Water, Energy, Food Security Nexus,* edited by Kumar, D et al. 57-59. Abingdon Oxon: Routledge, 2014.

Roquet, Vincent. Egre, Dominique and Durocher, Carine. "Benefit Sharing from Dam Project Phase 1: Desk study. Washington, DC: Final Report prepared for World Bank, 2002.

Sadoff, Claudia and David Grey. "Beyond the river: the Benefits of cooperation on International rivers*." Elsevier Science*, no. 3 (2002): 389-403. http://doi.org/10.1016/S1366-7017 (02)00035-1. (Retrieved on 20th December, 2016)

Schroeder, D. "Benefit Sharing: It's time for a definition". *Journal of Medical Ethics* 33(2007): 205-209

Sharma, Ghanashyam. Durga P Sharma and DR Dahal. "Water conflicts and benefits related to hydropower projects: A case study from Sikkim." *Abhilasha, Development Area,* 2014.

Sharma and Kuniyal. "Hydropower Development and Policies in India: A Case of Himachal Pradesh in the northwestern Himalaya". *Energy Sources'* 14 (2016): 377-384.

Shrestha, Padmendra. Austin Lord. Aditi Mukhrjee. Rashmi Sherstha, Lava Yadav and Nirjan Rai. "Benefit Sharing and sustainable Hydropower: Lessons from Nepal."Kathmandu, Nepal: ICIMOD, 2016.

Sinclair, John. "Assessing impacts of Micro-Hydro Development in the Kullu District, H.P. India". *Mountain Research and Development,* 23, no. 1 (2003): 11-13. http://dx.doi.org/10.1659/0276-4741 (2003)023[0011: ATIOMH] 2.0.c.o; 2.

Singh, Satyajit. "Evaluating Large Dams in India." *Economic and Political Weekly* 25 (1990): 561-574.

Singh, Satyajit. "*Taming the waters: The Political Economy of Large Dams in India".* New Delhi: Oxford University Press, 1997.

Singh, Anoop. "Power Sector Reform in India: Current Issues and Prospects". *Elsevier Science,* 34, no. 16 (2006): 2480-2490.
https://doi.org/10.1016/j.enpol.2004.08.013 (Accessed on 14th July 2017).

Singh, Laxuman. 'Emergence of Article 31 A, B, C and its validity'. 2013. http://www.legalservicesindia.com/article/article/emergence-of-article-31-a-b-and-c-and-its-validity (Accessed on 15th November 2017)

Skinner, Jamie. Niasse, Madiodio and Lawrence, Hass, eds. *Sharing the Benefits of Large Dams in West Africa*. London, UK: International Institute for Environment and Development, 2009.
http://pubs.iied.org/pdfs/12555IIED.pdf. (Accessed on 23rd July, 2016).

Skinner, Jamie. Bazin, Frederic and Koundouno, Jerome, eds. *Sharing the Water, Sharing the Benefits: Lessons from Six Large Dams of West Africa*. London, UK: International Institute For Environmental and Development, 2011.
http://cmsdata.iucn.org/downloads/gwi_dams_sharing_the_water__sharing_the_benefits.pdf. (Accessed on 21st November, 2016)

Skinner, Jamie. Judith, Krauss and Newborne, Peter. "Redistribution of Revenue from Hydropower Dams: Review of benefit-sharing and local control." London: UK. International Institute for Environment and Development, 2014.
http://pubs.iied.org/pdfs/G03770.pdf. (Accessed on 31st January, 2017).

Suhardiman, Diana. Wichelns, Dennis. Louis, Lebel. Sellamuttu, Sonali. "Benefit Sharing in Mekong Region hydropower: Whose benefits Count?" *Water Resources and Rural Development* 4(2014):3-11.
http://dx.doi.org/10.1016/j.wrr.2014.10.008008 (31st January, 2017).

Subba, Anita. "Impact of Hydropower Sector on the Economy of Sikkim".
M.Phil Dissertation. Sikkim University. 2015.

SWECO. *Benefit Sharing and Hydropower: Enhancing Development Benefits of Hydropower Investments through an Operational Framework*. The World Bank, 2011.

The United Nations Conference on Environment and Development (UNCED). "The Rio Declaration on Environment and Development". Rio de Janerio.1992.

Upadhyaya, Shyam K. "Addressing inequalities and injustices in Hydropower Development in Nepal, Lessons from Abroad." Working paper 8, Kathmandu: Nepal, Winrock International, 2006.

United Nations General Assembly. "International cooperation and the Peaceful users of Outer Space". 1471 (1959).
http://www.unoosa.org/oosa/en/spacelaw/gares/html/gares_34_0068html Accessed on 5Th March 2017.

World Commission on Dams. *Dams and Development: A new framework for decision-making*: *A Report of the World Commission on Dams.* London, UK: Earthscan, 2000. http://www.earthscan.co.uk. (Accessed on 31st July, 2016).

Wangchu, P. "Lepchas and Their Hydel Protest' *Bulletin of Tibetology* 43 (2007): 33-58.

Wang, Chaogang. *A Guide for local Benefit Sharing in Hydropower Projects*. World Bank Social development working paper No. 128 (2012).
http://documents.worldbank.org/curated/pt/pdf/708440NWPOBox300Hydropowerprojects.pdf. (Accessed on 27th September, 2016)

World Bank. *Directions in Hydropower.* Washington DC: World Bank
http://documents.worldbank.org/curated/en/164581468336679451

World Energy Council. "Charting the Upsurge in the Hydropower Development". London, UK: WEC, 2015.
http://www.worldenergy.org/wp-content/uploads/2015/05/World-Energy-Resources_Charting-the-Upsurge-in-Hydropower-Development_2015_Report2.pdf. (Accessed on 23rd July, 2016)

Yin, Robert K. "*Case study research: design and methods*." Third edition. Thousand Oaks: Sage Publications, 2003.

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Source: Project Report, 2016 Chujachen HEP

Plates 2: Bakery Machine donated to SHG under CSR (Chujachen HEP)

Photography: Field Survey, 10th September 20

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Source: Project Report 2016 Chujachen HEP

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Photography: Field Survey, 12th September, 2017

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Photography: Field Survey, 31st August 2017

Plates 6: Polughing Machine supplied by NHPC to the Farmers

Photography: Field Survey, 4th August 2017