ASSESSMENT OF RESETTLEMENT AND REHABILITATION ISSUES AND REDRESSAL MEASURES ASSOCIATED WITH LARGE HYDRO POWER PROJECTS IN UTTARAKHAND

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ABSTRACT

The development – displacement conflict over the years around the world has fractionalized societies either into pro or anti-establishment groups. Development is seen as an act where "larger good" is realized by the sacrifice of a "few". To realize the concept "development for all" it is extremely important to create an environment where all stakeholders work in harmony for the "larger good". A conducive healthy progressive environment addresses human suffering of the "few" or the project affected people on whose soil, engines of development are being built.

Development in the form of dams have fueled economies to greater prosperity. In contrast, the same dams that are seen as engines of growth have caused human suffering of mammoth proportions to the people displaced, creating roadblocks on future development of hydropower. The connect between the benefits of clean energy in the form of hydro power and the quality of life of the displaced is the comprehensive resettlement & rehabilitation (R&R) framework that is executed in the most transparent manner. The study is an attempt to assess resettlement and rehabilitation issues associated with large hydropower projects in Uttarakhand, a state in India having enormous hydro potential and at the same time home to some of the grave rehabilitation concerns. Further, it investigates the gaps and answers complexities that hover around the development – displacement debate associated with large hydro projects.

In this research, mixed method study has been used to assess the resettlement and rehabilitation issues associated with large hydropower projects in Uttarakhand. The study imbibes cross case synthesis from sites in Uttarakhand affected by displacement because of construction of large hydro project. The Tehri Hydro Electric Project at Tehri and Vishnugad Pipalkoti Hydro Electric Project in Chamoli constitute the area of research and form the two cases for the study. The former is the storage dam while the latter is the Run of River (RoR). The research utilizes both primary and secondary data where secondary data

collected during literature review was used to construct a 5-point Likert Scale primarily drawn from Michael Cernea's Impoverishment Risk and Reconstruction (IRR) Model. The risks identified in the model are Landlessness, Joblessness, Homelessness, Marginalization, Food Insecurity, Morbidity and Mortality, Loss of Access to Common Property, Social Disarticulation, and Education Loss. To the existing risk, "Women Issue" has also been added as it was seen from literature review that women suffer more in case of involuntary displacement across the world. The risk and issues are rated giving us an insight into the quantitative individual ranking of each risk related to human displacement.

The governments over the years have been working on improving rehabilitation policy to make it more human centric and stress on incorporating livelihood restoration mechanism to people displaced. On August 2013, a comprehensive policy that combined land acquisition with R&R, the Land Acquisition and Resettlement and Rehabilitation (LARR) Act was framed, as it was believed that R&R could not be framed in isolation. Despite a series of interventions by the government on policy formation, hydro projects are facing time and cost overruns because of protest and human unrest. The study also addresses the gaps between rehabilitation policy on paper and its implementation. Interview with different stakeholders using case study method fetch interesting facts on implementation bottlenecks. Some of the finding include lack of transparency, frequent transfers of government officials, weak political will, inadequate support from district administration and insufficient mechanism to monitor livelihood initiatives post displacement. Study concludes by giving suggestions and recommendations on creation of environment where all stakeholder benefit from hydro power development. A suggestive framework explores a holistic approach to overcome resettlement and rehabilitation hurdles related to large hydro projects in Uttarakhand.

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NOMENCLATURE

GW	Gigawatt
IDMC	Internal Displacement Monitoring Centre
IRBD	International Bank for Reconstruction and Development
IRR	Impoverishment Risk and Reconstruction
MU	Mega Unit
MW	Megawatt
NPRR	National Policy on Resettlement & Rehabilitation
PAP	Project Affected People
PAPs	Project Affected Persons
R&R	Resettlement and Rehabilitation
RoR	Run of River
THDC India Ltd.	Tehri Hydro Development Corporation India Limited
THEP	Tehri Hydro Electric Project
VPHEP	Vishnugad Pipalkoti Hydro Electric Project

CHAPTER 1

HYDRO POWER DEVELOPMENT AND HUMAN DISPLACEMENT

1.1 Introduction

India has been on a progressive trajectory since last few decades in terms of economic growth. The healthy macro variables indicate a renaissance of new India. It is one of the few nations that the world is eying to stimulate development and create opportunities for millions around the globe (International Monetary Fund, n.d.). Facilitation of growth requires reliable infrastructure. Nehru's "Temple of Modern India"(Hindu, 2015) was an initiative targeting and facilitating growth in India by installing mega multi-purpose hydro projects. Power and Irrigation are one of the most fundamental component of infrastructure and seen as rationale for developing mammoth "Temples of Modern India" (Hindu, 2015). Himalayas bestow land with perineal rivers that feed dams and in process help states achieve greater economic independence. Development has another facet – the human sacrifice. Involuntary displacement because of construction of mega projects have resulted in unprecedented issues. Though a perfect solution that is acceptable to all stakeholders is a challenge, there is a dire need to study and come up with solutions that facilitate hydro power and at the same time equip people affected by these projects with better living standards and opportunities (Vanclay, 2017).

1.2 Rationale for Hydro Power Generation

Dams around the world generate 16% of electricity and provide irrigation for food crops to 12-15% of the population. The primary purpose for building dams has been to generate hydropower. It accounts for 80 percent of the water they store (Bosshard, 2014).

Large hydro power plants have potential to generate quantum volumes of electricity thereby benefiting stakeholders with economies of scale. This is one of the reasons, dams to the scale of 22, 500 MW (Three Gorges Dam, China) (Singh, 2015) have been built. Hydropower is the cheapest option amongst electricity generation sources (CEA, 2014), since all it needs is running water. Hydropower is also the most efficient form of energy amongst the various generation technologies like Wind turbine, Photovoltaic cells, geothermal power plant, Biomass and biogas, etc. Figure 1 below summarizes the efficiency amongst various generation technologies. The hydropower is the most efficient with efficiency of 95% (Union of the Electricity Industry – EURELECTRIC and VGB, 2003).

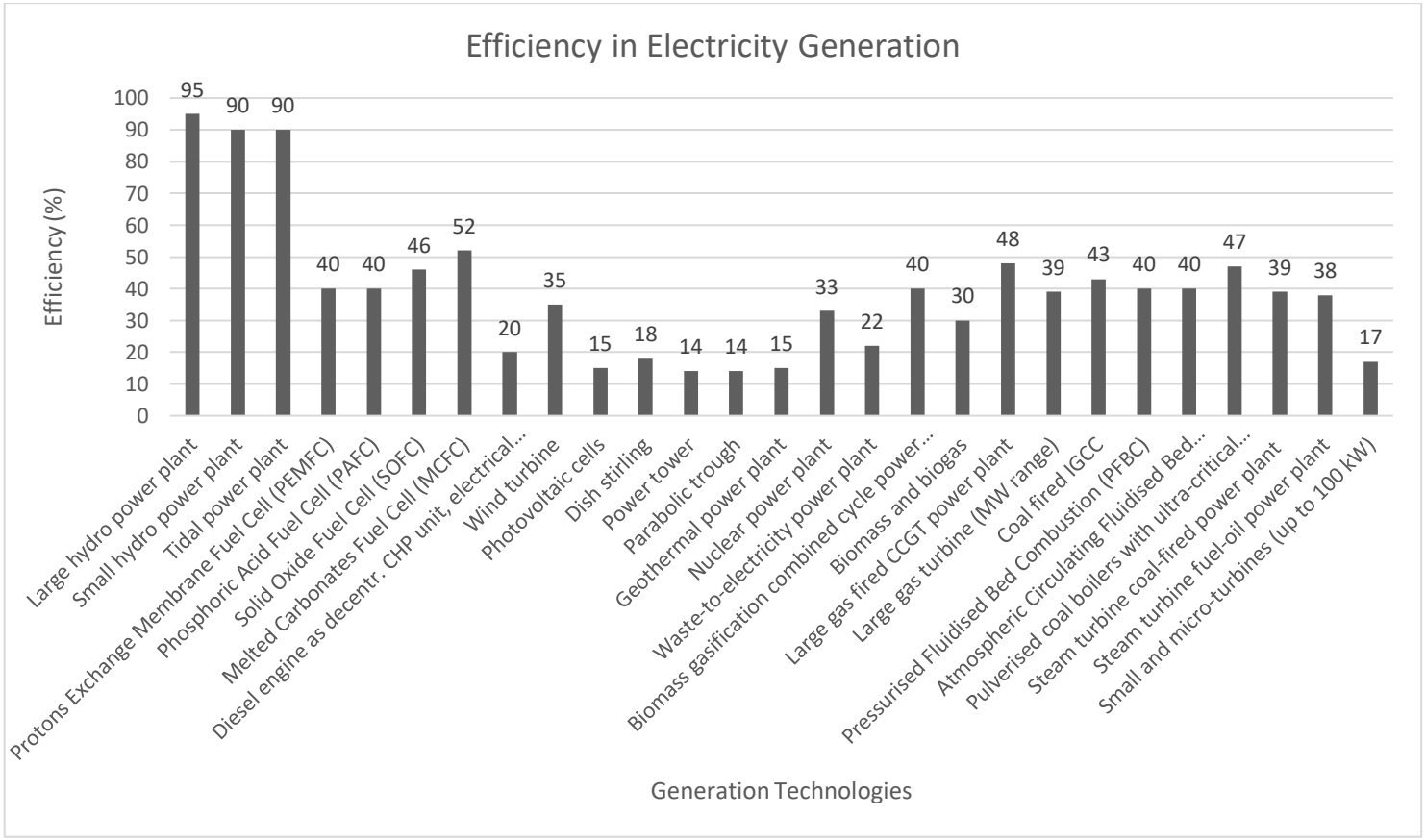

Figure 1: Efficiency in Electricity Generation (Union of the Electricity Industry – EURELECTRIC and VGB, 2003)

Following are some of the other benefits of hydropower electricity besides efficiency[1]:

- Hydropower is fueled by water, which makes it a cheap and clean source of fuel unlike thermal power or coal based plants.
- Hydropower creates reservoirs that have potential to boost tourism related activities and offer significant contribution to infrastructural development.
- Hydropower plants can generate power to the grid immediately, providing necessary back up during electricity outages and disruptions. Hydroelectricity increases the stability and reliability of electricity systems.
- Hydropower is useful in flood control, irrigation, and water supply.
- Hydroelectricity is a renewable source of energy.
- Hydroelectricity makes it feasible to utilize other renewable sources.
- Hydroelectricity promotes guaranteed energy and price stability.
- Hydroelectricity helps fight climate change.
- Hydroelectricity improves the air we breathe.

1.2.1 Potential of Hydro Power Development in India

Hydropower has gained its relevance over the years as dependency on thermal power plants have series of limitations. Concerns of fuel availability, environmental hazards and economic cost in terms of life of a project have made hydropower a reliable option in terms of electricity generation for future (Energy Effeciency & Renewable Energy, n.d.). The Energy-Elasticity in India is 0.8 %, which implies that in order to achieve a GDP growth rate of 8-9 %, the nation requires approximately 7 % growth in electricity supply. Further a target of 1800 kWh per capita consumption by 2034 would require another 450 GW

[1] (Energy Efficiency & Renewable Energy, n.d.)(“Hydropower,” n.d.)

of power supply (PwC, 2016). Hydropower with its potential of 148 GW in India can significantly contribute towards energy demands in future since it is reliable, sustainable, available and affordable (CEA, 2016).

Table 1 below presents the status of top five states having highest Hydroelectric potential in India.The statistics published by Central Electricity Authority (CEA) indicate an enormous potential of 1,48,701 MW in India. This potential has been significantly under-utilized. Out of the total capacity, only 36,482 MW has been developed and 12,738 MW is under construction. The remainder 96,100 MW which is approximately 66% of the potential capacity, is yet to be developed. In context of India, the top three states in terms of hydropower potential are Arunachal Pradesh, Himachal Pradesh and Uttarakhand with capacities of 18,175 MW, 18, 820 MW and 50,328 MW respectively.

Himachal Pradesh has developed 48.05 % of the total capacity and another 14.11 % is under construction. Arunachal Pradesh has 0.81 % as capacity utilized and 5.70 % is under construction. The low production is primarily because of law and order issues and unstable political environment in the region (PwC, 2017). Uttarakhand, which borders Himachal Pradesh, has developed 19.4% and another 9.11% is under construction. This leaves Uttarakhand with staggering 71.85 % as unutilized capacity against 37.84 % in Himachal Pradesh. The numbers strengthen the argument of harnessing hydro potential especially in the case of Uttarakhand, as it is political stable and located in close proximity to industrial centers of north India.

Table 1: State-Wise Status of Hydropower Potential (CEA, 2017)

Region/State	**Identified Capacity (MW)**		**Capacity Developed**		**Capacity under Construction**		**Capacity yet to be Developed**	
	Total	Above 25 MW	MW	%	MW	%	MW	%
Arunachal Pradesh	50328	50064	405	0.81	2854	5.7	46805	93.49
Himachal Pradesh	18820	18540	8908	48.05	2616	14.11	7016	37.84
Uttarakhand	18175	17998	3988	19.04	1640	9.11	12932	71.85
Jammu and Kashmir	14146	13543	2669	19.71	1630	12.04	9244	68.26
Karnataka	6602	6459	3585	55.51	0	0	2874	44.49
All India	**148701**	**145320**	**36481**	**25.1**	**12738**	**8.77**	**96100**	**66.13**

1.2.2 Potential of Hydropower in Uttarakhand

Uttarakhand, the 27th state of India was formed on 9 November 2000. It was carved out of Uttar Pradesh. Figure 2 below is a map of Uttarakhand. The state is located at the foothills of the Himalayas, sharing international boundaries with China in the north and Nepal in the east. Himachal Pradesh lies on the north west while it shares boundaries with Uttar Pradesh on the southern side (Forest Department Uttarakhand, 2015).

INDIA

UTTARAKHAND

Figure 2: Map of India and Uttarakhand (Rawat, 2006)

Uttarakhand ranks 3rd in India in terms of hydro power potential. The perennial rivers that originate from glaciers are excellent source for hydro power plants. The enormous potential of 18,175 MW indicated in Table 1 in previous section can drive Uttarakhand to greater economic independence. Tourism and Hydro are two inherent sectors that can generate considerable revenue (Mittal, Tripathi, & Sethi, 2008). Development of hydro projects complements tourism sector as well. The lake at Tehri has enormous potential to be developed as one such destination. Thus facilitation of hydro has complementary benefits (Energy Effeciency & Renewable Energy, n.d.).

Out of the total hydropower potential of 18, 175 MW in Uttarakhand, only 3,988 MW has been utilized and another 1640 MW is under construction. The energy requirement has been steadily growing because of urbanization. The Table 2 below lists the data for demand and supply of power in Uttarakhand for the last five years. As per this data, in the year 2015-16, the demand of energy was 12,889 MU while the state faced a shortage of 214 MU (Ministry of Power). In the subsequent year, the demand rose to 13, 574 MU while the deficit for year was 336 MU (UPCL). Statistics from Uttarakhand Power Corporation Limited (UPCL) reveal that the actual demand of power which used to be 32.71 MU as of May 01, now is 37 to 38 MU per day, though there is not enough improvement in the access of power (Markuna, 2013). In the initial years of statehood, the government of Uttarakhand was comfortable in meeting demand for electricity. However, in subsequent years the stunted supply of electricity made the state, energy deficient. Since 2010, the growth trajectory of hydro power projects has flattened owing to the pressures arising from environmental and human rights violations (Trivedi, 2017).

Table 2: Demand vs Supply of Power in Uttarakhand (UPCL, n.d.)

Year	***Availability of power (MU)***	***Demand of power (MU)***	***Surplus (+) / Shortage (-) of power (MU)***
2011-2012	8638	10460	-1822
2012-2013	9171	10571	-1400
2013-2014	8834	10987	-2153
2014-2015	12445	12072	-373
2015-2016	12889	12675	-214
2016-2017	13239	13574	-336

1.2.3 Growth of Hydropower in Uttarakhand

Various environmental and displacement issues have put question marks on the viability of large hydro projects. Large dams usually draw greater risk of displacement (Michael M. Cernea & McDowell, 2000b). Tehri Dam was one such example in the history of humankind where close to hundred thousand people were displaced (Terminski, 2013). The whole process of R&R took over 25 years to complete (Secretariat & IIT Roorkee, 2008). The magnitude of public outcry resulted in supreme court intervening and as a result a committee under the chairmanship of Shri Hanumantha Rao was constituted to find solutions to various issues raised by the developer and displaces (Secretariat & IIT Roorkee, 2008). Storage dams require large area, hence importance was given to the smaller Run of River (RoR) projects that place lesser stress on both environment and the people (Helston & Farris, 2017). As a result, various RoR projects were sanctioned and an alternative in the form of "Run of River" was thought to be a solution in the state of Uttarakhand.

The Table 3 below presents the installed capacity and the annual growth rate of hydropower generation since the year 2001. It can be seen from the data that 2010 and 2013 recorded the lowest growth rates. The growth of hydropower took a serious jolt in 2010 when Run of River (RoR) projects especially in the Bhagirathi valley were stalled because of environmental and religious concerns. The next big obstacle for hydro power development came in 2013, when the flash floods affected almost all of Uttarakhand (Choudhry, 2015).

The supreme court of India ordered Uttarakhand to restrain from giving any clearance to new hydropower projects and directed them to come up with an impact assessment study for 24 under construction projects (Choudhry, 2015). The National Green Tribunal (NGT) also became active observer and on a petition by NGO, ordered GVK, the developer of Srinagar project to pay INR 9.26 crore as compensation to the people affected by the damage and destruction caused by muck as a result of 2013 floods (Trivedi, 2017).

Table 3: Growth of Hydropower in Uttarakhand (UPCL, n.d.)

Year	**Installed capacity (MW)**	**Annual Growth (%)**
2001	1112.90	-
2002	1117.00	0.37
2003	1117.00	0.00
2004	1123.50	0.58
2005	1408.50	25.36
2006	1808.85	28.43
2007	2813.85	55.56
2008	3123.85	11.02

2009	3164.35	1.30
2010	3164.35	0.00
2011	3614.50	14.23
2012	3614.50	0.00
2013	3614.50	0.00
2014	3637.90	0.65
2015	3967.90	9.07
2016	3988.00	0.51

The environmentalist and people right activist have agreed to find a middle path where development, people and environment progress in harmony. Avdhesh Kaushal, who runs a prominent NGO, Rural Litigation of Entitlement Kendra (RLEK), agrees to the benefits of hydroelectric power in the state. Mr. Sundar lal Bahuguna, a noted environmentalist and social activist from the region also agrees that smaller projects do not carry demerits existing in large storage dams (Trivedi, 2017).

1.2.4 Barriers to Hydropower Development

The growth of hydropower has its share of obstacles restraining its development. Technical, environmental and socio economic barriers limit its potential.

Technical Barriers

Hydropower project are prone to hydrological constraints owing to its geographical locations. Further bulky equipment necessary for construction and

operation for dams are difficult to transport as most of the projects are located in hilly isolated regions (Sovacool, Dhakal, Gippner, & Bambawale, 2011)(Hossain et al., 2018)(Tang, Li, Qiang, Wang, & Lu, 2013). The technical barriers are more severe in underdeveloped countries, which in spite of enormous potential have deficiencies in the form of R&D facility and poor grid connection mechanism (Ghimire & Kim, 2018).

Environmental Barriers

Environmental issues have been one of the profound risk associated with construction of dams. Large quantity of steel, cement and machinery used in construction of large hydro projects trigger global warming and degenerates quality of water (Hossain et al., 2018). Other Environmental risk include loss in biodiversity, greenhouse emissions, nutrient deficient rivers and deforestation (Fearnside, 2016) (Thayer. Scudder, 2005) (Obour, Owusu, Agyeman, Ahenkan, & Madrid, 2016) (de Faria, Davis, Severnini, & Jaramillo, 2017) (Hossain et al., 2018).

Economic Barriers

Economic barriers include cost overruns, difficulty in attracting funding agencies, lack of interest from investors and disputes related to power purchase agreements (Sovacool & Bulan, 2011)(de Faria et al., 2017)(CEA, 2018)(Kelkar, 2016)(PwC, 2016)(Batool & Abbas, 2017)

Socio –Cultural Barriers.

The influx of workers in the construction sites raise tensions and increase the risk of transmitted disease. The struggle for jobs further dents the social cohesion (de Faria et al., 2017). Lot of local communities affected have dependence on river and forest for livelihood. Relocations distort their routines. Inadequate compensation results in financial and economic burden. The displacement results in wide scale social and cultural erosion (Hossain et al.,

2018) (Downing & Garcia-Downing, 2009)(Rana, Sati, Sundriyal, Doval, & Juyal, 2007)(Bisht, 2011)(Li, 1990). Michael Cernea mentions nine potential risk associated with involuntary displacement in his IRR model that socially and economically marginalized displaced people. The risk include landlessness, joblessness, homelessness, marginalisation, food insecurity, increased morbidity and mortality, loss of access to common property, social disarticulation, Education Loss (Michael Cernea, 2002) (Michael M. Cernea & McDowell, 2000a)(Fernandes, 2000)(Brown, Magee, & Xu, 2008)(Aiken & Leigh, 2015) (Parveen & Faisal, 2002).

1.3 Hydro Power and Development Induced Displacement

Human resettlements because of involuntary displacement have always remained a matter of great concern across the world. Mao's "The Great Leap Forward" in China was one such catastrophe in the history of humankind where 30 million people were reportedly killed in search for greater economic prosperity and the "larger good"(Tatlow, 2011). The statistics across the world especially in Asia and Africa have appalling number of people who have suffered as a result of displacement (Micheal M Cernea, 1997)(Price, 2009)(Kedanemariam & Mishra, 2013).

Amongst the development initiatives, large dams have been by far one of the main reasons for displacement. A study by the World Bank in 1994 indicated that every year 4 million people are displaced as a result construction of 300 large dams of height over 15 meters. In relation to displacement by hydropower projects, 6 million people were displaced as a result of urban development and transportation each year. The total reaching to overwhelming 10 million displaced each year. The table shows people displaced across continents by some of the major hydro projects (Cernea, 1997).

Table 4: Displacements caused by dams (Cernea, 1997)

Dam	**Country**	**Displaced**	**Completion Year**
Xinanjiang	China	306000	1959
Sanmenxia	China	319000	1960
Danjiangkou	China	383000	1973
Mangla	Pakistan	90000	1965
Aswan	Egypt	100000	1970
Sobradinho	Brazil	60000	1979
Itaparica	Brazil	50000	1988
Akosombo	Ghana	84000	1965
Kainji	Nigeria	50000	1968
Kariba	Zambia/Zimbabwe	56000	1959
Almati	India	140000	2005
Narmada	India	250000	2017
Three Gorges Dam	China	1100000	2003

As indicated in Table 4, displacement because of large dams have been a regular story in China. The Sanmenxia Dam in Henan province on Yellow River, Danjiangkou Dam in Hubie province on Han River and Xinanjiang (Qiandao) Dam, have all displaced approximately a million people in total (Micheal M Cernea, 1997). The hydro project that displaced the most number of people by far is the 22500 MW, Three Gorges Dam on Yangtze River in China. Over 1.2 million people had to be relocated (Jackson & Sleigh, 2000)(Wilmsen & van Hulten, 2017). South America also has a considerable share in involuntary

displacement because of large dams. The Itaparica Dam in Pernambuco and the Sobradinho Dam on Sobradinho on Sao Fransisco River in Brazil has displaced over 100000 thousand people (Richter et al., 2010). The African continent is also not far behind. The Aswan Dam built on Nile in Aswan, Egypt , Akosombo Dam on Volta river in Ghana and Karebi Dam on Zambezi river on the border of Zambia and Zimbabwe have together seen a displacement of over 200000 people. The Indian subcontinent in the past two decades is witness to one of the greatest displacement in history. The Mangal Dam on Jhelum River in Pakistan has seen over 90000 people displaced.

According to a report by Brookings Institute, India has the largest number of development projects in the world. It is also likely that with such a large number of developmental projects being built or under construction, it is home to the largest number of development-induced displaced persons in the world (Robinson, 2003). Of the **65 million people displaced in India** by various developmental initiatives between 1950 and 2005, **less than a fifth have been resettled** according to Geneva-based Internal Displacement Monitoring Centre (Robinson, 2003). In the 20th century, dams contributed to major share in the involuntary displacement of people. Studies by Indian Social Institute (ISI), Delhi demonstrate that the last five decades until 2005, development related displacement affected 50-55 million people. Dam construction alone was the reason for single largest involuntary displacement. The estimate by Indian Social Institute, Delhi shows that 76.99 % of total 21.3 million people displaced by development projects in India, was a result of construction of dams (Robinson, 2003)(Fernandes, 2000).

1.3.1 Challenges to Hydro Power Development in India

In spite of all the revised draft and stress on rehabilitation in recent years, unrest from project affected persons (PAPs) has made hydro business financially unviable in India (Singh, 1992) (The Hindu BusinessLine, 2017). The time and cost overruns as a result of delays has become a norm now (Mathur, 2013).

North East is witnessing unrest from locals. The construction of 2000 MW Subansiri Hydro Project on Assam-Arunachal border started in 2005. The proposed target date for completion was 2014. The cost of the project initially was INR 6,285.33 Crore. Because of protest from the PAPs, the project was delayed. The revised estimate now is INR 17,000 crore, almost three times the initial cost. The schedule date of operation now is 2018 (Singh, 2016) . In the neighbouring state of Sikkim, locals are objecting to construction of dams and have developed an antipathy towards it. (Huber & Joshi, 2015)

A similar story was seen in the 800 MW Kol Dam in Himachal Pradesh. The project that was to be operational in 2008-09 and was sanctioned in 2002, doubling the cost and duration (Kelkar, 2016)(SANDRP, 2015).

Minister of State (Independent Charge) for coal, Power, Renewable Energy, Mines and Steel, mentioned in Rajya Sabha that all 41 hydropower projects amounting to 11792.5 MW in the country are facing time and cost overruns. The total cost of the projects has almost doubled over a period. The range of time over run for the projects have been from 12 months to 17 years. The main reason being single out is land acquisition and opposition from project-affected people. The 400 MW Maheshwar Hydropower Project, country's first large private hydropower project is facing similar issues (The Hindu BusinessLine, 2017). Another project that faced serious time and cost overruns because of construction of series of dams on Narmada River is Sardar Sarovar Project. It gave birth to organisations like Narmada Bachao Andolan (NBA) that fought for the rights of the locals for decades over rehabilitation issues. Over two lakh people from 192 villages have rehabilitation issues when the water level in the reservoir rises (Ashlin, 2017). The picture below shows PAPs along with Narmada Bachao Andolan Activist doing "jalsatyagarha" at Chota Barda, Madhya Pradesh, against the lack of rehabilitation measures by the government in 2017(Ashlin, 2017).

Figure 3: Narmada Dam Protest (Ashlin, 2017)

1.3.1.1. Resettlement & Rehabilitation Policy in Hydropower Projects – National Perspective

Land acquisition has been carried on a mass scale over decades in India without giving much attention to relevant framework related to rehabilitation. The land acquisition act of 1884 has been the basis for acquiring land. Since there was absence of laws and mechanism that addressed R&R, public outcry and civic unrest pushed the government to come up with measures that dealt with resettlement and rehabilitation (Asif, 1999). A national policy on resettlement and rehabilitation was brought by the government in 2003, it was replaced by another one in 2007. The National Policy on Resettlement & Rehabilitation 2007 (NPRR-07) in India is a marked improvement in terms of addressing R & R issues. On August 2013, a comprehensive policy that combined land acquisition with R&R, the Land Acquisition and Resettlement and Rehabilitation (LARR) Act was framed as it was believed that R&R could not be framed in isolation (Goswami, 2016). Many a times, issues related to R&R stemmed from land acquisition alone. The legislation had provisions for better livelihood opportunities for both the landless and the tenants. Some of the basic features are being highlighted.

- The act empowers people by "prior consent" to negotiate at arm's length with private corporations for best compensation along with their choices for relocations.
- LARR is a huge step in enhancing the compensation rates to four times the market value in rural area and twice the market value in urban area. Further, the affected family is also eligible to receive a solatium to the value of one time the market value, allowance for transportation to relocated site and a monthly cash food allowance for one year.
- To gauge the adversity caused by project a Social Impact Assessment (SIA) will be carried out. The SIA will incorporate "Resettlement and Rehabilitation Plan" for all families displaced or affected.

- Landless labourers who work on the land being acquired will be compensated adequately. The tribal people and the schedule caste would also be protected under better legal framework and are subject to specific entitlements. Further the documents and information would be made available in affected peoples own language.
- The act incorporates basic human rights norms in terms of allocation of houses in resettled sites. The land ownership would vest on both husband and wife. Widows, unmarried adults with or without spouse, children or adults will be treated as separate family and eligible for all entitlements.
- The process of displacement and resettlement will be monitored. (Michael Cernea, 2013)

1.3.1.2. Resettlement & Rehabilitation in Hydro Power– Uttarakhand Perspective

The construction of Tehri Dam, completed in 2006, led to the involuntary relocation of about 100,000 people (Terminski, 2013)(Secretariat & IIT Roorkee, 2008)(Newton, 2008). In spite of detailed provisions for rehabilitation and customizations that follow because of uniqueness of projects, there seems a substantial conflict between the policy implementing bodies and the project affected persons on grounds of implementation (Bisht, 2009; Diduck, Sinclair, Pratap, & Hostetler, 2007; Newton, 2008; Sharma, 2018)(Sharma, 2018). The resettlement of PAPs from Tehri Hydro Project in Tehri, Uttarakhand has been a challenging journey for government over the years. The project had to go through protests and public outcry over the issue of safety, environment and rehabilitation. This resulted in incredible delays, so and so that the Tehri Dam was commissioned more than 25 years after R&R was initiated. This is one of the reasons why the cost of power from Tehri Dam is whooping INR 5.87 per unit (CEA, 2016). The overall R & R until 2008 was INR 1484 Crore, which is roughly 18 percent of the total cost of the project (Secretariat & IIT Roorkee, 2008).

Rehabilitation at Tehri, Uttarakhand was infamous for the outrage from the public. The THDC India Ltd, rehabilitation policy 1998, though amended over the years still carries issues related to compensation, gender biasness and livelihood option for PAPs (Asthana, 2012)(Bisht, 2009). The major highlight of the policy was the recommendations of Shri Hanumantha Rao Committee constituted by the Supreme court of India that were incorporated in rehabilitation policy 1998 for people displaced due to Tehri Dam (THDC, 1998). The Hanumantha Rao Committee made certain landmark changes concerning ownership rights and empowering women for receiving compensation. Interviews with PAPs and experts during the course of the study revealed that policies framed were not disseminated properly leaving people marginalized.

Another hydro project that has captured the attention in Uttarakhand because of R&R issues is the 444 MW Vishnugad Pipalkoti Hydro Electric Project (VPHEP) developed by THDC India Ltd. on Alaknanda river in Chamoli district of Uttarakhand. According to the World Bank, the financer for the project, 806 families are eligible for the R&R assistance out of which 729 have received their allotted share. THDC has so far paid 83.6 million rupees towards R&R assistance (IBRD, 2017)(World Bank, n.d.). The basic draft for the R&R is adopted from National Policy on Resettlement and Rehabilitation 2007 and further customized to fit the guidelines laid down by the World Bank on resettlement and rehabilitation. Though THDC has rehabilitated large number of families, the project is facing delays because of unrest from locals on the ground of implementation. Other hydro projects in Uttarakhand having issues related to rehabilitation and facing cost and time overruns are 171 MW Lata Tapovan**,** 120 MW Vyasi and 1000 MW Tehri PSS (CEA, 2018).

1.4 Justification of Research Work

The discussion in this chapter highlights the importance of hydropower development and human displacement associated with it. The chapter starts with discussing rational, potential and growth of hydropower both in India and in Uttarakhand. In spite of all the benefits of hydropower, its development specifically in the case of Uttarakhand is not promising. The stunted growth over the years has done little justice to the enormous potential of hydropower in the state of Uttarakhand.

The chapter further discusses the challenges to hydropower development. Hydropower projects around the world are cause of massive involuntary displacement. Discussion on resettlement and rehabilitation issues associated with large hydropower projects in both India and Uttarakhand indicate fall of socio-economic status of project-affected people (PAPs). This results in public discontent, which adversely affects the development of hydropower. The unrest further becomes a reason for time and cost overruns for the developer. Assessment and Redressal of Rehabilitation and Resettlement issues thus becomes one of the critical factor to hydropower development in Uttarakhand.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Post World War II, nations across the world had big surge towards building mega developmental projects. Dams constituted a major component amongst the constructional activities. It was time when massive displacement of people took place. The 60's and the 70's saw scholars mainly anthropologist writing on issues related to people being displaced. The impact and assessment of displacement was carried on number of projects especially in Africa (Chambers, 1969). Chamber's three-stage model was an outcome of exhaustive study on land settlement in the African continent. The constituent of the three-stage model was recruitment, transition and development. The model generalized the experiences of people who were voluntarily displaced. During these time John Rawls in 1971 came with his explanation on development-induced displacement. He called it "General Conception of Justice". The essence of his study was the importance given to social values such as liberty, distribution of wealth and self-respect which was to be distributed equally (Rawls, 1971).

Scudder and Colson further improvised the three-stage model by formulating a theoretical model based on four stages rather than three. The fourth and the final stage of "Incorporation" was added to the earlier three stages of recruitment, transition and development. The models and frameworks that were developed in this era had one serious drawback. The studies were based on voluntary displacement or displacement that were successful. Brenchin, West, and Associates (1991) advocated the necessity for a comprehensive model. They stressed on the importance on anticipating events and outcomes as a result of involuntary displacement.(Brenchin, S. R, West, 1991).

Until now, most of the studies in the area of displacement missed on the issue of "risk" associated with displacement. Michael M Cernea addressed this issue of becoming "impoverished" and constructed a comprehensive model that had the predictive as well as explanatory capacity. The model which is called the **Impoverishment Risk and Reconstruction (IRR)** was the outcome of his numerous works on world bank projects (Micheal M Cernea, 1997). The Human ordeal as a result of displacement has been extremely painful on the displaced in most cases. This human suffering coupled with long term risk of socio-economic degradation makes people vulnerable (Michael M. Cernea, 2008; Michael M. Cernea & McDowell, 2000b; Michael M Cernea, 2004; Micheal M Cernea, 1997).

Cernea's IRR model is based on nine interlinked potential risks associated with displacement. As mentioned by Cernea, these potential risks can turn into possible disasters if proper proactive action is not taken in time. The risks identified are **landlessness, joblessness, homelessness, marginalisation, food insecurity, increased morbidity and mortality, loss of access to common property, social disarticulation, Education Loss**. The IRR model has been constructed and established during the 1990s, in a series of studies (Michael M Cernea, 2004; Micheal M Cernea, 1997)(Micheal M Cernea, 1997). Initially it was applied on almost 200 projects carried out by the World Bank in 1993-1994 (Micheal M Cernea, 1997)

The model definitely helps students in conducting research in the field of resettlement studies. It helps in organizing enquiry, build and test hypothesis and frame conclusions based on findings. The fundamental concepts that form the ethos of the model are "risk", "poverty" and "reconstruction". According to Cernea, prevention of impoverishment should be the central issue in development-induced population displacement and relocations.

The literature review is presented in sections below:

2.2 Theme based Literature Review

The Literature reviewed has been broadly classified into themes related to displacement. The categorization of literature review has helped construct business problem, research problem, research gaps, research questions and finally formulating research objectives. The themes classified are:

Theme 1: Theoretical Models and Resettlement Policies on Displacement;
Theme 2: R & R Issues in India;
Theme 3: Socio-Economic Impact Assessment; and
Theme 4: R & R Issues in Uttarakhand,

The details of literature reviewed along with gist of their findings and contributions to the literature in displacement related issues are listed under the mentioned categories.

2.2.1 Theme 1: Theoretical Models and Policies of Displacement

In this section, theoretical models of displacement and rehabilitation policies have been discussed. The study of models over the years has helped construct a theoretical premise for the research. Scholars over the years have worked tirelessly building framework to tackle displacement issues. It is seen that their findings have always been an improvement over their predecessors. Some of the prominent names whose work has been researched in the study are Scudder, Chambers, Rawls, Colson, West and finally Michael Cernea. The models framed by scholars over the years have been discussed in the introduction of this chapter. The work that has gone into framing these models has helped The World Bank, formulate policies and regulations for its projects across the world. The institution in its source book provides a wide scope of resettlement guidelines. The eligibility criteria for compensation and income restoration, units of entitlement and classification of vulnerable population have been underlined. Further, the document mentions the technical aspect in terms of planning and process such as income enhancement and budgeting of

resettlement process. The source book features information on guidelines for survey, monitoring, supervision and implementation of resettlement plans. The National Rehabilitation and Resettlement Policy of 2007 and The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act of 2013 are initiatives from the government to make R&R process transparent and efficient. Inclusion of Social Impact Assessment and Grievance Mechanism Cell for displaced people are one of the hallmarks of NRRP, 2007. The creation of administrative post for implementation purpose along with the roles and responsibilities imbibed in the policy shows a way forward. Though NRRP 2007 is a step forward, it does not provide times frames for resettlement of displaced and inclusion for monitoring authority that put checks and balances. The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement act of 2013 is an improvement over the previous policy. It states the rules and criteria for deciding compensation for land acquired both in rural and urban areas. The policy though lacks in empowering landless labours in terms of compensation. Table 5 highlights the research carried on models and policies on displacement related issues.

Table 5: Theme 1-Theoretical Models and Policies on Displacement

S. No	Author	Findings
1.	(Brokensha & Scudder, 1968)	Impoverishing effects of projects that necessitate resettlement
2.	(Chambers, 1969)	Chamber's three-stage model was an outcome of exhaustive study on land settlement in the African continent. The constituent of the three-stage model was recruitment, transition and development. The model generalized the experiences of people who were voluntarily displaced.
3.	(Rawls, 1971)	Model of general conception of justice. The essence of his study was the importance given to social values such as liberty, distribution of wealth and self-respect.
4.	(T Scudder & Colson, 1982)	The three-stage model was further taken forwarded by Scudder and Colson who formulated a theoretical model based on four stages rather than three. The fourth and the final stage of "Incorporation" was added to the earlier three stages of recruitment, transition and development. The models and frameworks that were developed in this era had one serious drawback. The studies were based on voluntary displacement or displacement that were successful.
5.	(Thayer Scudder, 1985)	Research on human ecology of large projects.
6.	(Brenchin, S. R, West, 1991)	The necessity for a comprehensive model was strongly urged. They stressed on the importance on anticipating events and outcomes as a result of involuntary displacement.

7.	(Micheal M Cernea, 1997)	Addressed the issue of becoming "impoverished" and constructed a comprehensive model that had the predictive as well as explanatory capacity. The model, which is called the Impoverishment Risk and Reconstruction (IRR), was the outcome of his numerous works on world bank projects. The Human ordeal as a result of displacement has been extremely painful on the displaced in most cases. This human suffering coupled with long-term risk of socio-economic degradation makes people vulnerable. Cernea's IRR model is based on nine interlinked potential risks associated with displacement.
8.	(THDC, 1998)	The policy has detailed on land acquisition, compensation, allocation of residential and agricultural land, right of displaces, redressal measures and jurisdiction of various agencies related to R&R. Incorporated Hanumantha Rao Committee recommendations.
9.	(Mahapatra, 1999)	Application of IRR model on India's hydro projects.
10.	(WCD, 2000)	Studies framework for decision making because of large hydro projects.
11.	(Michael Cernea, 2002)	"Education Loss" added to the eight potential risk of the Impoverishment risk and Reconstruction model (IRR)
12.	(World Bank, 2004)	A comprehensive source book detailing world bank's guidelines for involuntary resettlement.
13.	(Thayer. Scudder, 2005)	Studies the future of large dams and its implications on social, environmental, institutional and political costs

14.	(The National Rehabilitation And Resettlement Policy, 2007)	A marked improvement in the field of resettlement and rehabilitation in India. The resettlement policy of THDC is based on NPRR- 2007. Highlights livelihood restoration initiatives. Addition of Social Impact Assessment and Grievance Mechanism.
15.	(Downing & Garcia-Downing, 2009)	Developed a theory on psycho-socio-cultural disruption. Findings conclude that social life becomes chaotic as routine culture turns into dissonant culture.
16.	(The Right To Fair Compensation And Transparency In Land Acquisition, Rehabilitation And Resettlementact, 2013)	The act defines the rates for compensation in rural and urban areas. Limitations in acquiring multi crop and irrigated agricultural land.
17.	(Smyth & Vanclay, 2017)	Explains stages in resettlement from the eyes of a consultants – "Scoping and initial planning - Profiling and baseline data collection - Development of the Resettlement Action Plan (RAP) - Implementation & handover - Livelihood restoration and enhancement, Monitoring and evaluation"
18.	(Vanclay, 2017)	Modelled and conceptionalized social impacts related to hydro power displacement

2.2.2 Theme 2: R & R Issues in India

Under this category, R & R issues in India have been discussed. As seen, India is home to one of the gravest rehabilitation issues. The issues discussed in this category highlights the magnitude of problems and possible gaps in the field of displacement across India. Of the 65 million people displaced in India by various developmental initiatives between 1950 and 2005, less than a fifth have been resettled according to Geneva-based Internal Displacement Monitoring Centre (Robinson, 2003). Displacement as a result of dams like Sardar Sarovar, Tungabhadra, Hirakund, and Tehri along with other large hydro projects have been analysed and reviewed by scholars. The details of the literature reviewed along with a gist of each of their findings and contributions to the literature of the displacement related issues are listed in the Table 6 below.

Table 6: Theme 2-R & R Issues in India

S. No	Author	Findings
1.	(Paranjpye, 1988)	Evaluated displacement of Tehri Dam. A study on cost benefit analysis.
2.	(Singh, 1992)	A study on displacement as a result of construction of Dams on Narmada River. Results showed lack of regular employment for project affected people.
3.	(Parasuraman, 1993)	The study explores issues related to women when confronted with displacement in India.
4.	(Mathur, 1995)	R& R issues as a result of displacement across India.
5.	(Goyal, 1996)	R & R issues affecting the cost of hydro projects. People have become poorer as a result of displacement. Recommends a case for National policy on R&R.
6.	(A. B. Ota, 1996)	The study is based on the displaces of Maharashtra Composite Irrigation Project and the Rengali Dam. The findings include acute landlessness for people displaced.
7.	(Pandey, 1998)	The finding show lesser job opportunities for people displaced as a result of construction of Upper Krishna Project (UKP). Displacement resulted in mass unemployment.

8.	(Mahapatra, 1999)	Empirical research on the application of IRR model on various projects across India
9.	(Fernandes, 2000)	A socio-economic study on displacement. Landmark study that highlights the magnitude of displacement in India.
10.	(Fernandes, 2000)	The study shows how benefits accrued from hydro projects can benefit project affected people.
11.	(Bandyopadhyay, 2002)	A critical look at the report of the World Commission on Dams in context of the debate on large Dams on Himalayan rivers.
12.	(Mathur, 2006)	Critical analysis of land acquisition process of R&R policy laid by government of Orissa.
13.	(Newton, 2008)	The author looks into various challenges faced by women as a result of displacement at Tehri, India.
14.	(Secretariat & IIT Roorkee, 2008)	Socio- economic impacts of Tehri Dam on project affected people. Highlights initiatives by THDC India Ltd.
15.	(Bisht, 2009)	The study confirms various risk associated amongst women as a result of displacement.

16.	(Everard & Kataria, 2010)	Potential risk involved as a result of construction of the proposed Pancheswar Dam at India-Nepal border.
17.	(Somayaji & Talwar, 2011)	Compensation should be lifestyle based rather than land based. Need to restore natural resources surrounding. Compensation does not include loses not measured in monetary terms.
18.	(Bisht, 2011)	This is an ethnographic study highlights socio-economic degradation of women in Tehri, India
19.	(Terminski, 2013)	Discusses development-induced displacement. Looks into the resettlement challenges across continents.
20.	(Thukral, 2013)	Analysis of gender issues as a result of displacement.
21.	(Mariotti, 2015)	Studies why compensation is not enough to make resettlement a development opportunity.
22.	(Reddy, 2016)	The study looks into the socio economic changes as a result of displacement of people relocated by the construction of Tehri Dam.

2.2.3 Theme 3: Socio-Economic Impact Assessment

Under this theme Socio-Economic, impact of displacement because of construction of large dams is discussed. From literature, it is seen that involuntary displacement has adversely effected on socio-economic well-being of people. Numerous studies carried on projects in Africa, South America and Asia have shown degeneration of societies. Communities living around rivers are heavily depended on them for livelihood. Adaptation to new lifestyle is a challenge. Scholars over decades have revealed in their research off people being marginalized. Their studies helped governments and organizations like the World Bank formulate resettlement procedures. The details of the literature reviewed along with a gist of each of their findings and contributions to the literature of the displacement related issues are listed in the Table 7 below.

Table 7: Theme 3-Socio-Economic Impact Assessment

S. No	Author	Findings
1.	(Paranjpye, 1988)	Socio-Benefit analysis, that recommends the cost of R&R to be taken as explicitly.
2.	(Paranjpye, 1988)	Evaluating social cost benefit of Tehri Dam, India. One of the first studies on displacement concerns of Tehri Dam.
3.	(Baboo, 1992)	Studies the social transformation in case of the Hirakund Multipurpose Dam in Odisha.
4.	(Singh, 1992)	Displacement affects socio-economic conditions of people displaced.
5.	(Thayer, 1994)	Study is in backdrop of development initiatives in rivers basins in tropics of Africa and Asia. Examines resettlement problems.
6.	(Pandey, 1998)	Social disintegration has been a major impoverishment risk in all projects studied. Dismantles social networks, kinships and relationships.
7.	(Pandey, 1998)	Focuses on the already underprivileged people and their disarticulation as a result of displacement.
8.	(Pearce, 1999)	Methodological issues in economic analysis for involuntary resettlement operations.
9.	(Michael M. Cernea & McDowell, 2000a)	Study on the distress on project affected people as a result of displacement in Africa.
10.	(Fernandes, 2000)	Study highlights the process and mechanism where benefits accrued from projects can mitigate risk of being marginalization.

11.	(Sen, 2000)	Focuses on the social exclusion and critically assesses the concept and its relevance.
12.	(Sinha & Pokhriyal, 2001)	One of the initial studies on the rehabilitation of Tehri Dam, India. Critically examines the socio-economic distress.
13.	(Srinivasan, 2001)	Studies the balancing loss and benefits on gender as a result of large dam.
14.	(Ponzetti, 2003)	A visual methodology for studying place attachment. Explains the social cost of displacement.
15.	(Thayer. Scudder, 2005)	The book discusses the prospects of large dams and its consequences of dealing with social, environmental, institutional and political costs.
16.	(Thayer, 2005)	A study on social, political, institutional and environmental cost of large dams.
17.	(Mathur, 2006)	Failure to implement guidelines on time results in socio economic degradation. Mentions policy implementation issues.
18.	(Iyer, 2007)	The study is a critical analysis of current policy on rehabilitation and presses the need for more human approach.
19.	(Michael M. Cernea, 2008)	Compensation principle has lot of inherent drawbacks. Resource for additional compensation and financing not available.
20.	(Somayaji, 2009)	The research is on the environmental concerns and sustainable socio aspect in India
21.	(Maldonado, 2012)	A research on the impact of displacement on tribal communities in United States of America.

22.	(Terminski, 2013)	A broad study on various challenges related to displacement across the world.
23.	(Momtaz & Kabir, 2013)	A social impact assessment study in developing countries.
24.	(Garada, 2015)	The study is in the backdrop of construction of hydro projects in Orissa. Study finds policy implementation a major hurdle.
25.	(CEA, 2018)(CEA, 2017)(CEA, 2016)	Report on the statistics and key issues of power sector. Finding include land acquisition and local unrest as major reason for cost and time overruns for hydropower projects in India.
26.	(Wilmsen & van Hulten, 2017)	Longitudinal study on resettlement at the Three Gorges Dam, China. Study on the short and long-term effect on PAPs.
27.	(Smyth & Vanclay, 2017)	The study brings the potential benefits if resettlement done efficiently

2.2.4 Theme 4: R & R Issues in Uttarakhand

Under this theme, R&R issues in Uttarakhand have been discussed. Uttarakhand has been home to severe public unrest as a result of construction of Tehri Dam. Litigations and policy intervention by Supreme Court were all part of the rehabilitation journey which took over 25 years to complete. It displaced more that hundred thousand people. Studies by Bisht, Newton, Diduk, Rana, Everard and Asthana have brought concerns that involuntary displacement brings from the region. Issues specially related to women have been significant. Some of the positive initiatives from the government were the rectifications in the R&R policy that empowered PAPs especially women in terms of ownership rights. Tehri Dam is a storage facility that requires large area. The environmental and Socio-Economics constraints are severe. An alternative, Run of River hydropower projects that have lesser impact on displacement of people was thought to be the answer. The progress of RoR projects was arrested in 2010 and 2013 after series of environmental and rehabilitation concerns. Many hydro projects in the state are facing time and cost overruns because of rehabilitation issues. Implementation of rehabilitation policy is becoming a concern in the state. At VPHEP site in Chamoli, Resettlement Action Plan (RAP) framed by the developer did not adequately assess issues of displaced at village Hatsari, Chamoli (IBRD, 2017).

The details of the literature reviewed along with a gist of each of their findings and contributions to the literature of the displacement related issues are listed in the Table 8 below.

Table 8: Theme 4-R & R Issues in Uttarakhand

S. No	Author	Findings
1.	(Paranjpye, 1988)	Evaluated social cost benefit of Tehri Dam, India. One of the first studies on displacement concerns of Tehri Dam displaces.
2.	(Diduck et al., 2007)	Study on the impact assessment of various hydro projects from Chamoli District, Uttarakhand, India, Impact Assessment and Project Appraisal
3.	(Rana et al., 2007)	The study looks into the socio-economic and environmental implications of the hydroelectric projects in Uttarakhand
4.	(Newton, 2008)	Study draws out various concerns of people affected and resettled by the construction of Tehri Dam.
5.	(Kedia, 2008)	The study is in the backdrop of changing food production strategies among people displaced by Tehri Dam, Uttarakhand. Studies food insecurity and morbidity amongst the displaced.
6.	(Secretariat & IIT Roorkee, 2008)	Impact of Tehri Dam on the peopled displaced. Studies the R&R issues as a result of Tehri Dam and the changes in the living standards.

7.	(Bisht, 2009)	An ethnographic study finds women major suffers as a result of displacement from Tehri, India.
8.	(Everard & Kataria, 2010)	The study looks into the resettlement process. Finds lack of engagement of local people, and published information. The paper discusses the proposed Pancheshwar Dam to be constructed at Indo-Nepal Border.
9.	(Bisht, 2011)	Findings include inadequate compensation and prevalence of gender issues.
10.	(Asthana, 2012)	The study is a gender analysis in case of people displaced by Tehri Dam, Uttarakhand. Women worse off as a result of displacement. Policies are not gender sensitive.
11.	(Terminski, 2013)	Displacement related issues of hydro projects across world. Discusses socio-economic fall of people displaced.
12.	(Reddy, 2016)	The study highlights benefits accrued to people rehabilitated.
13.	(IBRD, 2017)	Progress report on the initiatives taken by THDC on R&R front at Vshnugad Pipalkoti Hydro Electric Project (VPHEP) in Chamoli , Uttarakhand.
14.	(THDC, n.d.-a)	The present report comprises the findings of the social impact assessment (SIA) and presents a Rehabilitation Action Plan (RAP) for the affected and displaced population.

2.3 Impoverishment Risk and Reconstruction (IRR) model and its Relevancy on Involuntary Displacement

The model has been empirically tested in major projects across the world (Micheal M Cernea, 1997). Further, it has been regularly used in studies in the field of resettlement research. Displacement has caused millions socially and economically impoverished (IDMC, n.d.). An elaborate review of the existence and relevancy of IRR model interlinked risk have been drawn. The following nine risks have been evidenced by drawing examples from cases around the world over the years because of displacement caused by construction of large hydropower projects:

1) Landlessness

"Landlessness is a risk that directly effects the bases on which livelihoods are built" (Michael M. Cernea, 2008)(Micheal M Cernea, 1997). The following evidences around the globe highlights the loss of land because of displacement. Improper expenditure of compensation received in cash compelled people to sell their lands thus leading to landlessness (Terminski, 2013).

In a recent report in august, 2017, the PAPs of Narmada Dam, India were allotted too little area to accommodate large number of livestock they owned. The agrarian population who depended on livestock for living ridiculed the plot size of 90 feet by 60 feet area (Timesofindia.com, 2017). In a case at Tehri, India, high construction cost left Project Affected Persons (PAPs) with little saving compelling them to sell their land for self-sustenance (Bisht, 2009). The landless people who either worked as workers or depended on the produce sharing basis have suffered the most. As a result of displacement, they lost both livelihood options and compensation (Diduck et al., 2007). In another case of Tehri, India, the government failed to provide irrigation facilities to newly allocated site, forcing people to sell their land (Asthana, 2012)

In a case of Pong Dam in Himachal Pradesh, India, the displaced population was allotted resettlement sites outside the state boundaries. People encountered various bureaucratic hurdles. Even the most basic amenities were not accessible. As a result, they were forced to move back and resettle in remote and far flung areas of their home state (The Times of India, 2017).

In a case of Kaptai Dam in Bangladesh the government failed to keep its promise to compensate PAPs for arable land (Parveen & Faisal, 2002). In another case of Bangladesh, the rural to urban migrants are seen to have more intensified risk of landlessness than rural to rural or urban to urban migrants (Kaida & Miah, 2015). In a case of Bakunhydro Electric Dam, Borneo, the resettled communities were deprived of all four categories of land – farmland, land for game hunting and gathering, cultivable land and reserve forest (Sovacool & Bulan, 2011).

At the Three Gorges Dam in China, a designated resettlement community was allotted land, which in the Kaixian locality could only support 1524 settlers instead of proposed 2000 people. This risk that only 60% of farmers would get land for land and the rest 40% were likely to lose their jobs was highlighted in 2000 (Jackson & Sleigh, 2000). In Nu River Project, China, a survey at Xiaoshaba, it was found that the designated size and cost of resettlement was in a direct conflict with national policy on R&R. The government had no provisions to allocate land to new displaced farmers whose land was inundated (Brown, M, & Xu, 2008). At Huadian Hydroelectric Project, China, during a site visit it was established that in Xiashaba, people were at great risk of losing their land because of inundation. Despite this inevitable threat, no provisions were in place. Further, study finds gross violation of norms related to resettlement(Brown & Xu, 2010) (Brown et al., 2008).

Cash compensation that is calculated at a value which is less than asset replacement cost can easily be spent to repay debts and the replacement land may never be available for purchase (Jayewardene, 2008). At Bui Dam Project, Ghana, each of

the household was allotted equal proportion of area irrespective of the land held originally. This caused a general decline in the average farmland. People felt that this would reduce their capacity to start bigger farms (Obour et al., 2016). At Babagon Dam, Malaysia, families displaced were promised 4.45 ha of land but received only 3.64 ha. Even 25 years later, they were deprived of ownership titles in the relocated sites. At Sungai Asap another resettlement site in Malaysia, families asked for 4.04 ha of land, were promised 2.83 ha, were eventually granted 1.21 ha. This too was not conducive for crops other than palm (Aiken & Leigh, 2015).

2) Joblessness

In case of Tehri Dam, India, the PAPs especially artisan, mason and people engaged in traditional skill sets were not able to seek employment in the new sites as the resources used were different from what they were accustomed to (Bisht, 2009). A study at Tehri, India, highlighted the lack of sustainable livelihood options for re-settlers. One-time compensation was not considered sufficient (Diduck et al., 2007). This was further represented by Newton, who underlined the fact that though some displaces were given large arable land, the government failed to equip people with necessary skills required to till (Newton, 2008). At Narmada, India, Turaga points out at indigenous people turning into daily wage labourers on the very land on which the dam was built after four decades of resettlement (Turaga, 2000).

In one of the longitudinal studies on the project-affected people of Three Gorges Dam, China, it was found that despite improvements in infrastructure the income levels declined, disrupting their livelihood options. Further, it was also seen that permanent employment was replaced by temporary employment, in a survey conducted within 5 years of relocation. However, eight years after the initial survey, income disparity improved (Wilmsen & van Hulten, 2017).

In another case of the Three Gorges Dam, China, poorly educated pheasants were found to have difficulty in getting jobs when compared to their urban counterpart. Also making things worse was the available uninhabited land around Three Gorges Dam that was steep. It would take time and new techniques to reap benefits from the hostile land available (Jackson & Sleigh, 2000)

At Huadian Hydroelectric Project, China, the local government was seen pushing people to be relocated, get into non-agricultural businesses. This was indicated by the storefronts provided at each new house. The small market and the large number of already competing storefronts would pose threat to people whose livelihood earlier depended on farming. Further, the future did not look promising either as dearth of skill development initiatives were seen as a risk to the long term livelihood options for displaced (Brown & Xu, 2010). At Bui Hydroelectric Project in Ghana, fishermen faced reduced volumes of fish catch. The reason was the distance of the new resettlement from the fishing sites. The average land holding in the area declined after relocation. As a result, they were not able to grow economically viable trees like teak and cashew (Obour et al., 2016).

At Nam Mang 3 Project in Laos, after losing access to land (paddy, forest and grazing) led some villagers get into illegitimate business. It was also seen in the same region that farming community had hard time finding alternate livelihood options (Sayatham & Suhardiman, 2015). At Bakun resettlement site in Borneo, since 1998, more than 3000 people have relocated in urban areas in search for better economic prospects (Sovacool & Bulan, 2011). The new cash based economy created after the construction of Dam made the indigenous people impoverished wage labours.

In a pilot case study in lower Zambezi, Mozambique, the income level of farmers declined because of reduced riverbank available after relocation. Further reduced fishing, harvesting of reeds and other wetland resources marginalized incomes

significantly (Scodanibbio & Mañez, 2005). In Vietnam, the resettlement household witnessed an average farm output decline by 65%. The study measured farm output for the resettled and the host. The results showed reduction in income levels as compared to the host population (Bui, Schreinemachers, & Berger, 2013).

3) Homelessness

In case of Tehri Dam, India, people fell into debt trap after displacement, indicating high construction cost (Bisht, 2009). At Vishnugad-Pipalkoti, Chamoli, India, PAPs are raising concerns over blasting which is causing risk to structures (IBRD, 2017). The rural to urban migration as a result of involuntary resettlement possess a greater risk of homelessness for displaced (Kaida & Miah, 2015).Susan Price points out on risk of miscalculation of compensation amount that can easily be spent to pay debts leaving inadequate fund for PAPs to purchase land (Price, 2009). At the Batang Ai resettlement site in Malaysia, is was seen that families went on a spending splurge, having nothing in the end (Aiken & Leigh, 2015). In Babagon, Malaysia, another resettle site people claimed that new accommodations were too small and clustered, unable to accommodate bigger families. The villagers at Sungai Asap also complained of substandard construction (Kua 2001).

4) Marginalization

In Malaysia, failure to provide compensation either through land for land or by replacement cost rather than market price is one of the main reasons for making displaced marginalized (Aiken & Leigh, 2015)(Swainson & Mcgregor, 2008).

In a classic case of Tehri, India, the whole town was submerged and the new settlement was constructed on the higher ridges called New Tehri Town. Frequent landslides, longer distances to commute and dire need for transportation facilities made them marginalized in terms of infrastructure. The colder weather of the new town restricted people to hold usual evening debates and meeting considered to be

an important fabric in the community life leading to social marginalization (Newton, 2008). In Bakun Hydroelectric Dam in Borneo, the paddy fields in Sibu, were at risk of drought as it lacked irrigated water. Further the silt deposit caused low fertility thereby marginalizing agriculture output (Sovacool & Bulan, 2011).

5) Social Disarticulation

Downing and Garcia-downing (2009) have developed a theory about psycho-socio-cultural disruption. Their findings conclude that social life becomes chaotic as routine culture turns into dissonant culture (Downing & Garcia-Downing, 2009).

The acquisition act do no define social losses and social disarticulation (Price, 2009). Many indigenous tribes and rural communities barter and neighbourhood ties play an important role. Indigenous people face the main brunt of displacement in all corners. The PAPs displaced from 19 villages because of Narmada Dam in Gujarat, India, were settled into no less than 175 different sites. The resettled faced social and physical abuse and disintegrated the inter community bond (Roy, 1999).

In Kohadiya, India, it was observed that there was a sharp rise in broken marriages amongst resettled. The reason behind marriage breakdown was unemployment, insecurity and poverty because of displacement (Thukral, 2013). In Uttarakhand, India, households displaced by development of hydro projects have issues related to increased consumption of alcohol, compensation money misspent and allegation/threats by government officials to people who stood against it. Another notion that wealthy were receiving more benefits have created divisions in communities (Diduck et al., 2007). In a case of Tehri, India, many PAP's had to deal with corruption as the compensation given to them had to be authenticated and appraised by different government departments that encouraged bribery (Newton, 2008). People displaced from Tehri had issues related to practicing rituals. Since the old city was located on the banks of one of the most sacred river for Hindus, the

"Ganges", it allowed them to conduct centuries old rituals. The relocated site deprived them of holding these rituals because of access to the riverbank (Newton, 2008). In Sikkim, India, several instances of bribery by developers intended to win goodwill of locals were reported. The notion that dams will disrupt local economies, the Bhutia community adopted hostile stance against visitors approaching them with hydroelectric projects (Huber & Joshi, 2015).

In WSHP, Nepal, the potential PAPs expressed fear of community disintegration. Further ethnically different "Tharu" tribe are settled in the proposed site for relocation. Their culture, language and traditions are quite different from that of potential PAPs (Koirala, Hill, & Morgan, 2017). In Bakun resettlement site in Malaysia, limited employment opportunities led to increased idleness, alcoholism, indebtedness amongst other social evils (Aiken & Leigh, 2015). In Bui, Ghana, people celebrated community festivals, which also included communal fishing. The catch was distributed amongst communities. Since the construction of dam, the fishing sites are no longer accessible (Obour et al., 2016).

6) Loss of Access to Common Property

In case of Tehri, India, non-availability of free access to water, timber, roof slate, stones and sand left the PAPs disappointed. Natural environment provided an important livelihood support. Biomass played a critical role in addressing daily survival needs, which later became redundant (Asthana, 2012). A similar case was seen in by displaces of Sungai Selangor Dam in Malaysia. The loss of access to common forest land which provided people with subsisting needs like hunting, gathering and shifting cultivation with no cost has made them impoverished (Aiken & Leigh, 2015).

In Nepal, prospective PAPs were concerned about their increased living expenses as they were likely to be deprived of the common property resources easily

accessible in nature, which is available at no cost. Further proposed land allotted borders and is prone to disputes (Koirala et al., 2017). At Polavaram resettlement, India, a survey in eight villages confirmed loss of forest as the main reason for emotional and financial stress (Mariotti, 2015).

7) Morbidity

Cernea (2004) has found movement of construction workers (Boomtown effects) to distant local communities causing health problems, particularly the spread of sexually transmitted diseases such as HIV/AIDS. Malaria stems out to be a deadly threat to human habitat living around hydro project sites. In Africa close to 15 million people, live in close proximity to reservoir, exposing them to Anopheles mosquitoes that cause malaria. In short, one out of thirteen people living in these sites suffer from malaria year after year (Kibret, Wilson, Ryder, Tekie, & Petros, 2017)

At Cahora Bassa Dam in Mozambique, reduced food security has affected the well-being of PAPs. Health issues have been reported as a result of less varied diet, loss of protein and reduced vegetable intake (Scodanibbio & Mañez, 2005). At the Parveta resettlement site, India, around 38 children died after relocation (Roy, 1999). At Tehri, India, people relocated had health concerns because of water borne diseases (Asthana, 2012).

8) Food Insecurity

At Cahora Bassa Dam in Mozambique, reduced food security has affected health of displaced population because of less varied diet, loss of protein source and reduced vegetable intake (Scodanibbio & Mañez, 2005).

Resettlement of communities in new territories has risk of giving rise to competition for food with host population. This completion has potential to turn

into major conflict in future (Terminski, 2013). For people affected by Tehri Dam, India, is was seen that relocation at new sites compelled people to change their food choices affecting their health (Kedia, 2008).

9) Women Issue

In Malaysia' Bakun resettlement area, the involuntary resettlement was extremely hard on women as among other things, it reduced their access to land and resources, thereby eroding their role in food production and income generation. It increased their dependency on men for material support thereby waning their decision making powers, status and respect. The women were seen as caretakers of elderly and children (Kua 2001; Yong 2003).

Sanitation is a big issue specific to the women displaced as a result of involuntary resettlement. The women in Singrauli and Kohadiya, India, one of the relocated sites of Sardar Sarovar Dam, used forest for defecation. Without alternate sanitation in new relocated sites, women faced embarrassing situations. It also made them vulnerable to physical and sexual harassment (Thukral, 2013).

In Tehri, India, women were used to the biomass-based economy that was generally non-monetised. Water, fodder, fuel, building material and even food were all accessed freely from surrounding environment (Newton, 2008). Production and processing of biomass agriculture and village craft were biggest sources of employment. All got disruptive as a result of relocation to semi urban centres (Asthana, 2012). In a study by T. C Bisht in 2009, women working as agriculture labour were looked down upon in the new location as it was considered a sign of lower social status. Further the author highlights on the social restrictions and lack of decision making for women as they are now restricted inside the boundaries of the four walls. Inability to assimilate in a different culture is the reasons for this

social dislocation. Women are also severely affected as the low level of education proves to be a constraint in getting jobs in new places (Newton, 2008).

2.4 Success stories of R & R implementation on Hydropower Development Induced Displacement

Success stories in the domain of R&R inject hope. They show how rehabilitation policy if executed properly can actually contribute to socio economic welfare of people displaced. Pre and post survey on the PAPs of Belo Monte Dam in Brazil revealed encouraging results for settlers. The wealth increased for majority of households and had a positive impact on the socio economic inequality. This was achieved as the poorer household's experienced superior conditions in property ownership, housing and other assets (Randell, 2016).

In case of Bui Dam project in Ghana household were resettled in finished blockhouses, roofed with zinc aluminium sheets. The household were provided with one extra room than they had before. In a survey, 81% PAPs reported that they were satisfied with new housing. The rehabilitation policy was equipped with proactive measures in terms of anticipation of future household needs of the displaced. (Obour et al., 2016).

In another example of Three Gorges Dam, China, an initial survey done within five years of displacement revealed an income decline. Further loss of livelihood and nature of employment from permanent to temporary was also reported. However, eight years from the original survey the indicators were quite impressive. Their income grew indicating increased employability. The rehabilitation plan was well executed (Wilmsen & Wang, 2015)(Wilmsen & van Hulten, 2017).

In Gilgel Gibe III Hydro Electric project in Ethiopia, survey revealed creation of employment opportunities that was scarce previously. The host community mentioned creation of market, accommodation facilities for migrants as a result of

influx, supplemented income and opportunities for host population. The development enhanced demand and supply for commodities and improved health especially for women as electricity replaced traditional sources of energy (Kedanemariam & Mishra, 2013). Similar accounts have also been observed at Nam Ngiep II Project in Lao (Dong, Chun, & Shi, n.d.).

In long-term consequences of resettlement of Ikawa Dam, Japan, interviews with PAPs indicated high satisfaction level with resettlement. The main reason for their satisfaction was the successful upbringing of their children because of better education facility at relocated sites. They also appreciated land for land compensation and appreciated the new improved infrastructure provided by the developer (Takesada, 2009).

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

From literature review, it is quite evident that hydropower has huge potential in Uttarakhand. The blaring unutilized potential is a gap that needs to be addressed in a manner where opinions of all stakeholders are respected. Human displacement because of dams has caused lot of distress to people. In most cases as seen in the literature inadequate rehabilitation measures is seen as the reason for the distress, which leads to time and cost overruns. The developer finds his business venture unviable, PAPs become marginalized, and financers face the risk of defaults and the nation as a whole falls one-step backward in terms of socio-economic development. The business problem identified after reviewing the literature is as follows:

"Need to redress socio-economic degradation of people displaced by hydropower projects in Uttarakhand through R&R initiatives".

The research problem for the study is:

"How to Address Resettlement and Rehabilitation Issues to Harness Hydro Potential in Uttarakhand".

This chapter presents methodology undertaken for the research. Research problem identified, is followed by exploring research gaps, framing research questions and finally identifying research objectives.

3.2 Research Gaps

The IRR model framed by Michael Cernea has been widely applied in displacement related studies all over the world. Its application has also been analysed on involuntary displacement caused by construction of dams in India. In Uttarakhand scholars have used the risk model to study rehabilitation issues at Tehri (Bisht, 2009)(Secretariat & IIT Roorkee, 2008). After the rehabilitation debacle of Tehri, an alternate emerged in the form of Run of River (RoR) hydro projects. The smaller dams require much less area therefore reducing displacement numbers and the risks associated with it (Helston & Farris, 2017). In the initial years of statehood, number of hydro projects were sanctioned in Uttarakhand. NTPC, THDC and UJVNL along with other firms were given the charge of developing hydro projects. The suffering and ordeal that people went through at Tehri was lesson to learn for future Run of River projects in the state.

The three gaps identified are as follows:

1. Limited study on the relevance of factors of Cernea's IRR model to Uttarakhand conditions
2. Discrepancy in the R&R policy on paper and its implementation
3. Ineffective R&R policy that often leads to social conflict and time and cost overruns

Unfortunately, the state is again home to rehabilitation issues as the risk mentioned in the IRR model have not been addressed adequately. The second and the third gap relate to the effective implementation of R&R policy and sighting R&R as reason for social conflicts respectively.

Research Questions

After identifying the research gaps, following research questions are constructed:

1. Which factors need to be addressed through an effective R&R initiative for large hydropower projects in Uttarakhand?
2. Why there are gaps between R & R policy and its implementation?
3. How can we strengthen the current R & R policy and make it more effective?

Research Objectives

The research questions form the basis for generating research objectives for the study. The research objectives of the study are as follows:

1. To identify the parameters of an effective R & R initiative related to large hydropower projects in Uttarakhand.
2. To assess and address the gaps between the R & R policy and its implementation.
3. To develop a suggestive R & R framework.

The objectives of the study form the platform for arriving at conclusions through appropriate methodology. A complete process from research gaps to research objectives is shown in Figure 4.

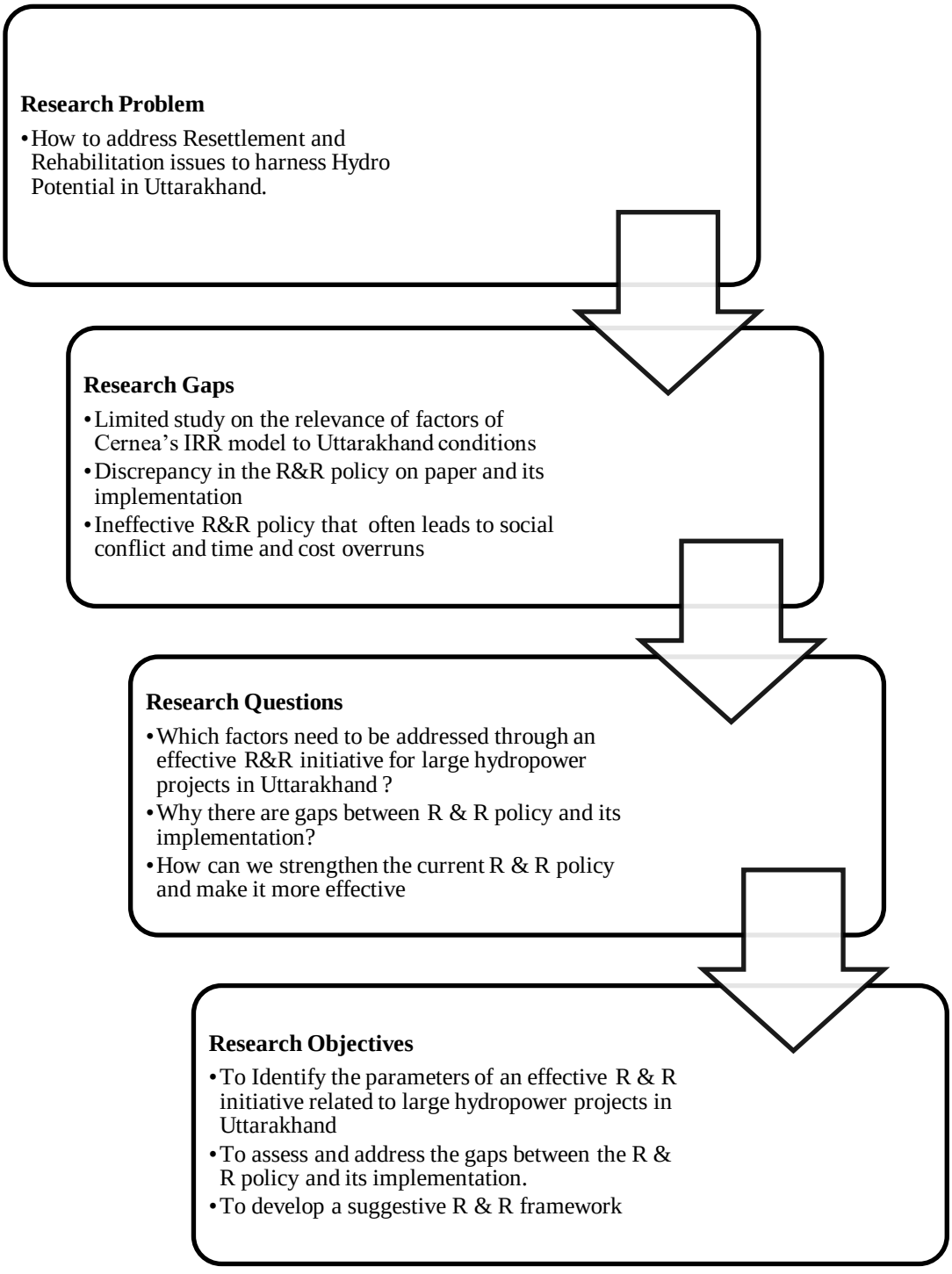

Figure 4: Research Approach

3.3 Conceptual lens

Conceptual lens of a researcher is a collection of experiences and beliefs through which a set of data is observed (Vygotsky, 1981) The conceptual lens for the study has been developed after comprehensive review of R&R Policies, research papers, news articles and other data repositories. The conceptual lens used in the study is presented in Figure 5.

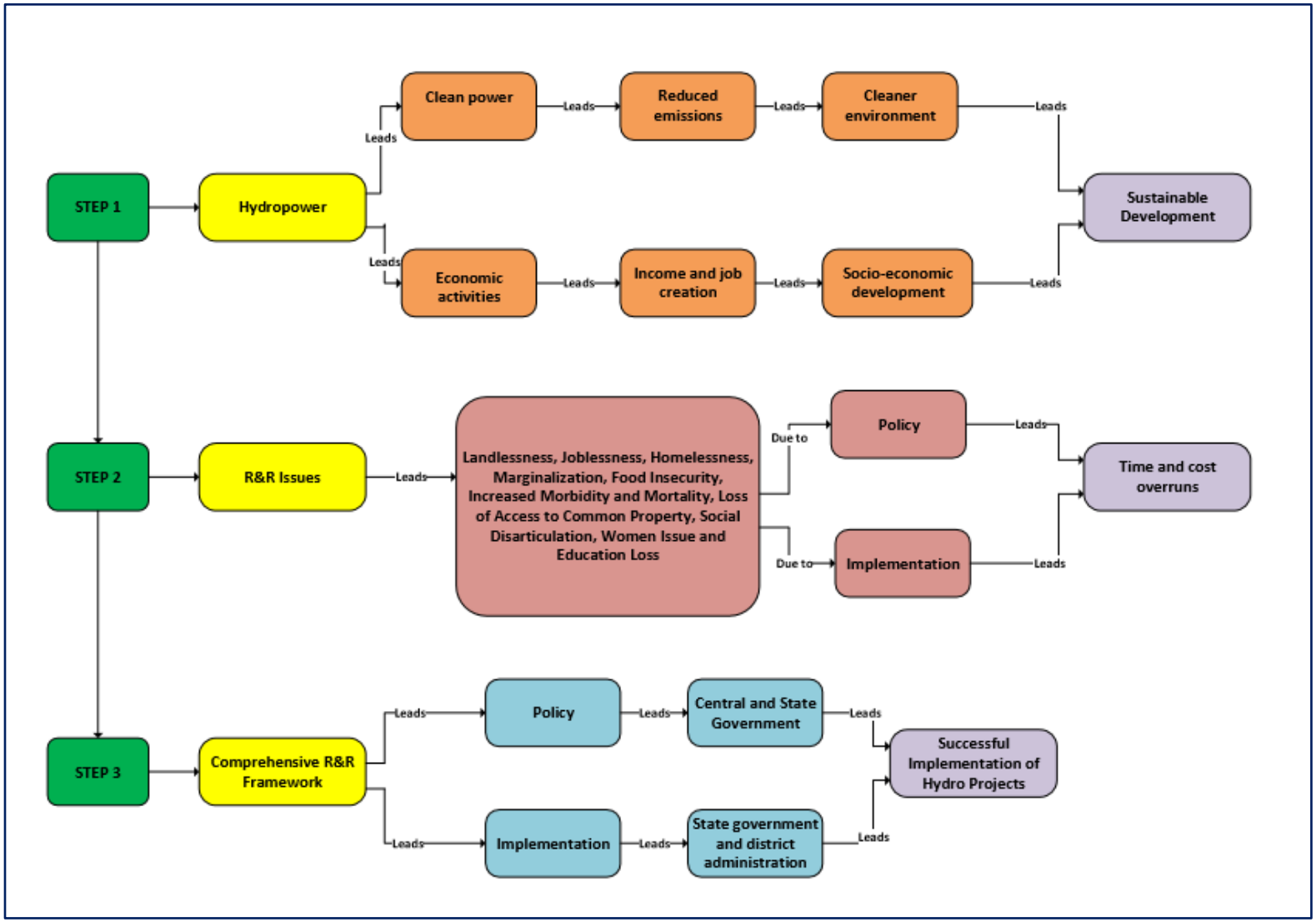

Figure 5: Conceptual Lens

3.4 Research Objectives

3.4.1 Research Objective 1

Research Question 1 (RQ1): Which factors need to be addressed through an effective R&R initiative for large hydropower projects in Uttarakhand?

Research Objective (RO1): To identify the parameters of an effective R & R initiative related to large hydropower projects in Uttarakhand

In this research, mixed method study has been used with the results of a survey being utilized to do in-depth analysis through multiple case studies. Based on literature review, **nine (9) risk factors drawn from Impoverishment Risk and Reconstruction (IRR)** IRR model framed by Michael Cernea have been applied to see its relevance in Uttarakhand. The risk/issues are **Landlessness, Joblessness, Homelessness, Marginalisation, Food Insecurity, Increased Morbidity and Mortality, Loss of Access to Common Property, Social Disarticulation and Education Loss** (Micheal M Cernea, 1997)(Michael M Cernea, 2004)(Michael Cernea, 2002)**.** In addition, after exhaustive literature review "**Women Issue**" has been added. It has been observed that women in particular suffer more across the world as a result of displacement (Turaga, 2000)(Bisht, 2009)(Newton, 2008)(Asthana, 2012)(Roy, 1999)(Bisht, 2011). The risk factors from Michael Cernea's IRR model is used to construct a 5-Point Likert Scale. A pilot study was conducted. The respondents were asked to give rating/rank on a 5 point Likert Scale. Subsequently PAPs relocated because of the construction of Tehri Hydro Electric Project in Tehri, Uttarakhand and Vishnugad-Pipalkoti Hydro Electric Project in Chamoli, Uttarakhand were surveyed. The risk are ranked/rated as very low, low, moderate, high and very high. Its corresponding numeric values/rating points are 1,2,3,4 and 5 respectively. On the basis of results the mean scores are ranked indicating the severity of risk (Zhang, Shen, & Chan, 2012a)(Mbachu & Nkado, 2006)(Tang et al., 2013).

Sample Size

For Survey, 100 Project Affected People (determined using Yamane's Formula for more than 1,00,000 population, ± 10% Precision Level and 95% Confidence Level).

Area of Study

Two cases – one storage dam Tehri Hydro Electric Project (THEP) in Tehri and one Run of River Vishnugad Pipalkoti Hydro Electric Project (VPHEP) in Chamoli, Uttarakhand form the area of study. From literature review, discussion with stakeholders and experts it is seen that THEP had severe R&R issues (Bisht, 2011)(Bisht, 2009)(Asthana, 2012)(Newton, 2008). The second area of study, VPHEP in Chamoli is a Run of River (RoR). RoR projects are an alternate to large storage dams that cause greater displacement and ecological damage (Helston & Farris, 2017). Rehabilitation issues have also gripped VPHEP thought to be an alternative to large storage dams. Local unrest is causing time and cost overruns (CEA, 2018)(IBRD, 2017). Further from the pilot survey, the results have shown that addressing R&R issues in the two cases can make a road forward for hydropower development in Uttarakhand and at the same time equip PAPs with better rehabilitation options.

Schedule of Survey

Table 9 states the timelines, location and stakeholders surveyed during the course of the study.

Table 9: Schedule of Data Collection

Dates	**Location**	**Respondents**
20th December 2016 to 5th January 2017 (Pilot Study)	Tehri, Rishikesh, Chamoli	• 15 PAPs; • 1 District Administrative officials; and • 1 THDC official.

28th May to 6th June 2017	Tehri, Rishikesh	• 40 PAPs
10th June to 18th June 2017	Chamoli, Tehri	• 20 PAPs from Tehri; • 10 PAPs from Chamoli; and • 2 THDC officials
14th October to 22nd October 2017	Chamoli	• 10 PAPs from Chamoli
22nd December 2017 to 2nd January 2018	Rishikesh, Chamoli	• Gram Pradhan of Haat, Chamoli, • 10 PAPs in Chamoli; and • 10 PAPs from Rishikesh.

3.4.2 Research Objective 2 and 3

Research Question 2 (RQ2): Why there are gaps between the R & R policy and its implementation?

Research Objective 2 (RO2): To assess and address the gaps between R & R policy and the implementation.

Research Question 3 (RQ3): How can we strengthen the current R & R policy and make it more effective?

Research Objective 3 (RO3): To develop a suggestive R & R framework

A 'Case Study Method' has been used as Case Study is conducted to answer "how" or "why" some social phenomenon works with in-depth analysis (Yin, 2014)

Four tests for Trustworthiness, Credibility, Confirmability and Data Dependability have been commonly used to establish the quality of any empirical social research. Because case study research is part of this larger body, the four tests also are relevant to case study research. The case study tactics used in the study for confirming these four tests are:

1. Construct validity: Identifying correct operational measures for the concepts being studied (Using multiple sources of evidence – documents, archives, interviews; Establishing chain of evidence; Having key informants review draft case study report)

2. Internal validity: Seeking to establish a causal relationship whereby certain conditions are believed to lead to other conditions (Using explanation building and cross-case synthesis)

3. External validity: Defining the domain to which a study's findings can be generalized (Domain of Risks Assessment and Mitigation for Development of Hydro Projects)

4. Reliability: Demonstrating that the operations of a study such as the data collection procedures can be repeated with the same results (Using case study protocol and developing a database).

Data Collection

For case studies, secondary data was collected from documents and archival records from sources such as THDC India Ltd., NTPC, UJVNL, L&T, District Administration, NGO, Experts and Community Members. Primary data was collected through Interviews from stakeholders of THEP and VPHEP.

Sample Size

For multiple-case study, number of cases required to reach saturation, that is, data collection until no significant new findings are revealed, determines sample size. Within each case study, in-depth interviews of relevant stakeholder are carried. Four officials from the developer, four from state administration, one

expert from academic institution, one NGO and four PAPs were interviewed. Further four documents related to R&R are analyzed to ascertain **triangulation and saturation of data. A process of triangulation enables analysis of both qualitative as well as quantitative data to understand the research problems. For data collection methods of questionnaire, interview, direct observation, document review and case study are applied** (Zhang, Shen, & Chan, 2012b)(Mbachu & Nkado, 2006)(Tang et al., 2013)**.**

Techniques Used for Data Analysis

The techniques used for data analysis were 'mean scores of risk factors' (For survey data) (Zhang et al., 2012b)(Mbachu & Nkado, 2006) (Tang et al., 2013) and 'Explanation Building and Cross-Case Synthesis' (For case study data) (Yin, 2014).

3.5 Case Studies

Two cases – one storage dam (Tehri Hydro Electric Project) in Tehri and one Run of River (Vishnugad Pipalkoti Hydro Electric Project) in Chamoli, Uttarakhand form the area of study. These case studies are discussed in details in sections 3.5.1 and 3.5.2 respectively. Table 10 below provides a comparative statistics of these two cases.

Table 10: Comparative Statistics of the Cases (CEA, 2018)(THDC, n.d.-c)

Parameters	**Case Study 1**	**Case Study 2**		
Name of project	Vishnugad-Pipalkoti Hydroelectric Project	Tehri PSP (THDC) Uttarakhand	Tehri Dam & HPP	Koteshwar Hydro Electric Project
Site address	Chamoli, Uttarakhand	Tehri, Uttarakhand		
Capacity	444 MW	1000 MW	1000 MW	400 MW
Project cost	3789.61 Cr	4401.90 Cr	8392.45 Cr	2386.41 Cr
Type	Run-of-the-river	Run-of-the-river	Storage	Storage
Client (Developer)	THDC India Ltd.	THDC India Ltd.	THDC India Ltd.	THDC India Ltd.
Contractors	M/s HCC Ltd , M/s BHEL	Consortium of M/S Alstom Hydro France and Hindustan Construction Company with M/s Alstom Hydro, France as lead partner		
Current Status	Project delayed	Project delayed	Operational Since- 2012	Operational Since- 2012
Families Rehabilitated	1477	9239		
Types of Compensation	Cash Compensation	Land for land & Cash Compensation	Land for land & Cash Compensation	Land for land & Cash Compensation
Time overrun	102 months	130 months	Operational	Operational
Cost overrun	1298.03 Cr	2281.51 Cr	Completed	Completed
Major reasons for time and cost overruns	-Delayed forest clearance -Frequent disruption of works by local people. -Cash flow crisis with M/s. HCC.	- Cash flow problem with contractor. -Litigation by bidders -Local Agitation	-Resettlement & Rehabilitation -Local Agitation -Litigations	-Resettlement & Rehabilitation -Local Agitation -Litigations

3.5.1 Case Study 1 – Vishnugad-Pipalkoti Hydroelectric Project (VPHEP), Chamoli, India

Tehri Hydro Development Corporation India Limited (THDC) is developing the 444 MW Vishnugad Pipalkoti Hydro Electric Project (VPHEP) on Alaknanda river in district Chamoli, Uttarakhand (THDC, n.d.-a). THDC India Ltd. is not only involved in the construction and operation of the project, it will also be responsible for the capacity building and institutional reinforcement initiatives. The World Bank is financing the project. The 444 MW, Run-of-River is expected in a year to generate estimated 1,665 GW-hours of electricity(THDC India Ltd., n.d.). The electricity generated would supplement India's northern grid, which often faces power shortages during months of high consumption. In comparison to the thermal plant of the similar capacity, VHEP will help in reducing national greenhouse gas emissions by 1.6 million tons a year. The clean carbon free renewable energy is economically, socially and environmentally sustainable to all stakeholders (IBRD, 2017). The project would include a 65-meter dam, a 13.4-km headrace tunnel, a 3 km tailrace tunnel, and an underground powerhouse. The water diverted from the river will re-join approximately 18 km after the place of diversion. The river flows through an uninhabited gorge at the project site, therefore it does not submerge agricultural fields and village dwellings (World Bank, 2017).

The construction of hydro project involves acquisition of public and private land from titleholders located in 19 villages around the construction site. In total 1223 household (1477 families with 5159 persons) are designated to be affected because of project implementation. The total area to be acquired is 141.53 Ha. The area includes private, government forest/ grazing, van panchayat (forest managed by village community) and public works department land (IBRD, 2017).

The picture in figure 6 is of Haat, Chamoli one of the sites where people built houses out of the cash compensation.

Figure 6: Village Haat, Chamoli (World Bank, n.d.)

The project has been subject to substantial cost and time overrun, first because of delays in awarding contracts followed by flooding in 2013. The initial closing date of the project was 31st December, 2017 which was extended until 30th June, 2019 (World Bank, 2017)(World Bank, n.d.).

Resettlement & Rehabilitation Policy for VPHEP

THDC according to terms and conditions with the World Bank has to constitute a Resettlement Action Plan (RAP), which would be implemented through its own staff with the help of a contracted Non-Governmental Agency (NGO). The basic objective of the RAP is to ensure living standards of all project affected persons (PAPs) improve or at a minimum reclaim the status they initially had before the implementation of the project (International Bank for Reconstruction and Development/The World Bank, 2016). The major objectives[2] of the RAP are:

- Identification of PAPs by the nature of loss and magnitude of damage.
- Categorization of people in line with the eligibility criteria of the R&R policy of THDC.
- Calculate entitlements for each PAPs.
- To ensure that all designated PAPs are aware of their entitlements under the policy and participate actively in the project.
- Identifying the preferences of the PAPs in choosing their new locations.
- Developing institutional support for implementation of the R&R process.
- Evolve a suitable mechanism for monitoring the R&R process
- Phasing of implementation of the RAP in coordination with construction activities to make the acquired land available when needed.

[2] (World Bank, 2017)(THDC India Ltd., n.d.)

Challenges in Resettlement & Rehabilitation

As a financer, World Bank on a regular basis have published progress reports. This puts checks, balances on the developer, and ensure that operational policy on involuntary resettlement of the World Bank is followed.

PAPs have raised their concerns over loss of water sources. The panel ensured alternative water sources in case the existing source is lost. There is considerable amount of risk relating to Structures, Landslides and Earthquakes. The Panel noted initiatives towards usage of Tunnel Boring Machine (TBM) to reduce destruction of structures. The panel noted management taking sufficient measures to ensure relevant studies are conducted by THDC during project design, appraisal and implementation stages to mitigate risks raised in the request.

PAPs had issues with Resettlement and Livelihood Restoration. Almost half of the project-affected families had received their R&R assistance. However, with respect to Hatsari (home to seventeen project affected families) the panel found that the Resettlement Action Plan (RAP) did not adequately assess issues of PAPs hence was not compliant with Bank Policy on Involuntary Resettlement. The Panel found that initiatives were being taken to restore the livelihoods of displaced people and infrastructural and public services are being provided in resettlement sites. The Panel also noted the need for clarification on the benefit sharing with PAPs and the usage of royalty payment to the state. The panel was satisfied with the operations of grievance mechanism cell.

The panel found developer agreeing to the demands of PAPs by increasing minimum environmental flow (e-flow) into the project to mitigate cultural, religious and biodiversity impacts. The panel found that issues of women security have not been properly addressed. As a faith building measure, it was suggested to monitor camps.

3.5.2 Case Study 2 – Tehri Hydro Electric Project (THEP), Tehri, India)

The Tehri Hydro Electric Dam with a height of 260.5- meter on Bhagirathi river in Tehri district, Uttarakhand, is the highest dam in India. The rock fill structure is being developed by THDC India Ltd. The 2400 MW Tehri Hydro Power Complex, have the following components[3]:

- 1000 MW Tehri Dam & Hydro Power Plant (Completed)
- 400 MW, Koteshwar Hydro Electric Project (Completed)
- 1000 MW Tehri Pumped Storage Plant (In Progress)

The first component, the Tehri Dam & Hydro Power Plant is operational. The other two components were approved in the year 2000 and 2006 respectively (Secretariat & IIT Roorkee, 2008). The project will generate 6532 MU of annual energy thereby strengthening the industrial and agricultural sector in northern India. The dam is estimated to irrigate 2.7 Lakh Ha of new area besides proving stability to existing irrigated 6.0 Lakh Ha. Further, it would provide water supply to Delhi and U.P to the amount of 300 cusecs and 200 cusecs respectively. Storage facility of this magnitude is a great measure for flood control by storing excess water during monsoon months. It also has a tremendous potential for tourism development (Secretariat & IIT Roorkee, 2008).

R&R in case of Tehri Dam over the years has seen a number of changes and has been shifting hands in terms of its implementation. In 1999, R&R was transferred to the U.P state government from THDC India Ltd. under the supervision of the Commissioner of Garhwal. The role of THDC India Ltd. was to provide funds for

[3] (THDC, n.d.-b)

rehabilitation. With the formation of Uttarakhand R&R implementation is handled by the state government (Secretariat & IIT Roorkee, 2008).

Resettlement & Rehabilitation policy at THEP

The rehabilitation plan at Tehri has been largely categorized as rural and urban rehabilitation. The rural rehabilitation is further broken down into fully affected or partially affected families. The families whose 50% or more land is being acquired are treated as fully affected (THDC, n.d.-c). The total number of families fully and partially affected under rural rehabilitation are 5429 and 3810 respectively. Partially affected rural families would be paid cash compensation for their submerged land[4].

Main Features of Rehabilitation Plan

The basic principles that guide the formation of the Rehabilitation Policy are:

- PAPs under rural rehabilitation be compensated either through allotment of agricultural land or cash in lieu.
- PAPs under rural rehabilitation should be settled in large blocks to intact the social fabric.
- All displaced people be involved to the extent possible in selecting the rehabilitation locations.
- Emphasis on delivering Community developmental facilities be provided at all rehabilitation locations.

The R&R at Tehri has had a long history of public unrest and protest. A mass movement gathered momentum in 90's, as a result government of India in 1996

[4] (Secretariat & IIT Roorkee, 2008).

constituted Hanumantha Rao Committee to look into the demands of the PAPs. The major recommendations of the committee, approved by Government and incorporated in the Rehabilitation Policy 1998 in regards to rehabilitation of the displaced include:

- Definition of family incorporated so as to make all major sons and major daughters who attained the age of 21 years on 19.07.1990 and dependent parent (Mother/Father) of the fully affected entitled land owner eligible for ex-gratia payment of INR 33,000/-, i.e. 750 days' minimum agricultural wage each.
- The HRC recommended that new rehabilitation policy in 1998 included 'wife' as a beneficiary of the rehabilitation package. All compensation was now to be jointly awarded to both husband and wife.
- Although THDC gives preference to PAPs, it is also not possible for the developer to give employment to all affected people.
  (THDC, n.d.-b)

Challenges in Resettlement & Rehabilitation

R&R was to be carried out, side by side, with the construction of the hydro project. The delay in construction thus had a negative impact on R&R, which later became a vicious circle. Rehabilitation of Tehri started in the year 1976 (Reddy, 2016). The first roadblock was the change in design of the project followed by the paucity of funds from the state government. THDC India Ltd. was created as a joint venture between the Government of India and State Government for project execution (Secretariat & IIT Roorkee, 2008). After prolong changes in hand holding the project finally got clearance in 1994. The 90's witnessed agitations by environmentalist, social activist and general public. This was followed by ban on blasting, closure of major tunnel, court cases, protest and litigations. The whole process took over 25 years to settle (Secretariat & IIT Roorkee, 2008). Until date,

many cases concerning rehabilitations are unresolved. THDC India Ltd. was also not in a position to give employment opportunities to all family members of displaced. The Hanumantha Rao committee constituted by Supreme Court did come to their rescue as it stated that it is beyond the gambit of THDC India Ltd. to generate such high number of opportunities within the organisation, though preference should be given in application for workmen and supervisors (Reddy, 2016). The PAPs were relocated at different timelines. Land initially was readily available. Over the years, the prices of land increased drastically. The state government of Uttarakhand and government of India had to convert forest and agriculture land to develop resettlement colonies. This further had its own problems as the new PAPs had tough time getting finance from banks against property as conversion from agricultural to residential took enormous time.

Figure 7 contains the picture of New Tehri overlooking the lake that submerged the old Tehri. The new town located in the higher ridges was designed to accommodate PAPs and government offices that were located earlier in the submerged old town.

Figure 7: New Tehri Town (UTDB, n.d.)

CHAPTER 4

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

As discussed the study uses a mixed method approach. The research incorporates two cases, exhaustively explored to answers the set research objectives. During the course of the research, stakeholders were interviewed and inference was drawn after a comprehensive methodical practice explained in the previous chapter. The stakeholders included officials from THDC India Ltd., UJVNL, NGO, District Administration, Gram Pradhan of affected villages, subject experts and finally the project affected people.

Along with interviews, a survey was conducted from the displaced, measuring the severity of risk. For the first objective, 100 project-affected people were surveyed. The results of which was used to identify and rank parameters that are essential for an effective R&R initiative. Number of field visits were conducted at resettlement sites. Further questionnaire prepared was validated by experts after carefully examining the relevance of each question. The villages surveyed for the case study of Vishnugad Pipalkoti Hydro Electric Project at Chamoli, Uttarakhand were Haat, Hatsari, Daswana, Eldana, Mayapur and Agthala. For the case study of Tehri Hydro Electric Project, survey along with interviews were conducted at New Tehri Town, Bhagirathipuram, Dehradun and Rishikesh.

4.2 Data Analysis for Research Objective 1

RQ1: Which factors need to be addressed through an effective R&R initiative for large hydropower projects in Uttarakhand?

RO1: To identify the parameters of an effective R & R initiative related to large hydropower projects in Uttarakhand

The techniques used for data analysis for survey is 'mean scores of risk factors' (Zhang et al., 2012b) (Mbachu & Nkado, 2006) (Tang et al., 2013) and 'Explanation Building and Cross-Case Synthesis for case study data (Yin, 2014).

The sample pilot survey was first carried on project affected people settled in the districts of Tehri, Rishikesh and Chamoli from 20th December 2016 to 05th January, 2017. The locations were New Tehri Town, Rishikesh and the village of Haat in Chamoli. The total number of people surveyed as part of the pilot study were 15 (5 each from three districts). In the same duration discussions on the research topic was carried with two senior officials from THDC in Rishikesh, the developers for both Tehri Hydro Electric Project and Vishnugad Pipalkoti Hydro Electric Project. In addition, feedback was also gathered from two district administrative officials from state government involved in rehabilitation. The results from the Likert Survey substantiated IRR model and opened the door for further investigation.

Numerous field trips were conducted in the towns of Rishikesh, Tehri and Chamoli where majority of the people affected by hydro projects were relocated. People affected by Tehri Dam are mostly located in New Tehri Town and Rishikesh. People displaced because of Vishnugad Pipalkoti Hydro Electric Project are located in Chamoli districts.

The data was collected in four stages. The first stage was from 28th May, 2017 to 06th June, 2017. The locations were in Tehri and Rishikesh. In total 40 PAPs affected because of construction of Tehri Dam were surveyed. In addition, two THDC officials, one rehabilitation officer from department of Irrigation designated as rehabilitation officer and one administrative officer from local administration were interviewed.

The second stage of data collection was from 10th June, 2017 to 18th June, 2017. The districts covered were Tehri and Chamoli. In Chamoli districts Haat, Hatsari, Daswana, and Mayapur were covered. Two officials from THDC dealing with R&R at VPHEP along with 20 PAPs each from Tehri and 10 from Chamoli districts were interviewed and surveyed.

The third field visit was conducted from 14th October, 2017 to 22nd October, 2017 in Chamoli districts. In all 10 PAPs were interviewed.

The last stage from 22nd December 2017 to 02nd January 2018 was spent in Chamoli and Rishikesh. In this stage the Gram Pradhan from Haat in Chamoli, was interviewed. Discussions with gathering of PAPs and interviews with local district administration were conducted. In total feedbacks from 10 PAPs from Chamoli and 10 from Rishikesh were taken surveyed in this stage.

In total 100 PAPs took part in the survey. The data was analyzed to obtain the mean scores and ranks for the risk parameters. Cronbach's Alpha value of 0.862 has been obtained that reflects reliability of the scale used in the study (George, D. and Mallery, 2003).

Figure 8 presents a snapshot of the data collected and analysed.

	Risk Model									
	Category of respondent – PAP									
Respondent	Landlessness	Joblessness	Homelessness	Marginalization	Food Insecurity	Morbidity	Loss of Common property	Social Disarticulation	Women Issue	Education Loss
73	4	4	2	5	2	2	3	5	3	4
74	4	4	2	5	2	2	5	5	3	1
75	5	5	2	5	5	5	5	5	3	1
76	5	5	2	5	5	5	5	2	3	1
77	5	5	4	5	2	2	5	5	2	1
78	4	4	4	5	2	2	4	5	3	1
79	4	4	2	3	2	5	5	5	3	2
80	3	3	4	5	5	1	4	5	4	1
81	5	5	4	5	2	3	5	5	4	1
82	5	5	5	1	2	5	5	5	4	1
83	4	4	2	5	2	1	5	4	3	1
84	4	4	2	5	2	3	5	5	3	2
85	5	5	2	5	1	5	5	5	3	1
86	3	3	2	5	1	1	5	5	3	3
87	4	4	4	4	1	2	3	5	3	4
88	3	3	5	4	2	2	5	1	3	5
89	3	5	5	5	1	1	4	5	4	1
90	5	3	5	4	1	4	5	5	3	1
91	4	3	3	5	5	2	5	5	3	1
92	4	5	3	5	5	5	5	5	5	1
93	2	4	5	5	3	1	4	2	3	1
94	2	2	4	5	3	4	5	2	5	1
95	4	4	4	5	3	2	5	5	3	1
96	5	5	5	5	3	1	5	3	4	3
97	5	5	5	1	2	4	2	5	3	1
98	5	5	4	5	2	1	5	4	3	1
99	1	3	4	5	2	5	5	5	3	1
100	1	3	5	5	1	1	5	4	3	1
total count of 1	8	0	0	5	19	35	2	3	0	81
total count of 2	6	3	29	0	28	25	4	9	4	5
total count of 3	15	24	12	2	16	11	6	4	69	7
total count of 4	31	30	27	11	14	12	10	14	14	5
total count of 5	40	43	32	82	23	17	78	70	13	2
sum	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
weighted sum for 1	0.08	0	0	0.05	0.19	0.35	0.02	0.03	0	0.81
weighted sum for 2	0.12	0.06	0.58	0	0.56	0.5	0.08	0.18	0.08	0.1
weighted sum for 3	0.45	0.72	0.36	0.06	0.48	0.33	0.18	0.12	2.07	0.21
weighted sum for 4	1.24	1.2	1.08	0.44	0.56	0.48	0.4	0.56	0.56	0.2
weighted sum for 5	2	2.15	1.6	4.1	1.15	0.85	3.9	3.5	0.65	0.1
Weighted Mean	**3.89**	**4.13**	**3.62**	**4.65**	**2.94**	**2.51**	**4.58**	**4.39**	**3.36**	**1.42**

Figure 8: Snapshot of Data Analysis

Following illustration explains the process for calculating the mean score for a given risk, **landlessness,** gathered from sample of 100 respondents.

Let,

P_i be the rating points ranging from 1 to 5;

R be the number of responses received against each of the rating points;

R_i. be the Fractional Responses.

Rating points along with respective responses are shown in the table below:

Table 11: Method to Calculate Mean Score

Rating Point (P_i)	**No. of Responses against each rating point (R)**	**Fractional Response R_i (R_i=R/100)**	**Mean Score** $\sum_{i}^{j}(P_i R_i)$
1	8	0.08	0.08
2	6	0.06	0.12
3	15	0.15	0.45
4	31	0.31	1.24
5	40	0.4	2
Total	**100**	**1**	**3.89**

The corresponding fractional response R_i is calculated by using:

$$R_i = {}^{R}/_{100} \quad \text{(Eqn. 1)}$$

In the next step, weighted sum for each rating point is calculated using the equation:

$$\text{Mean score} = \sum_{i}^{j}(P_i R_i) \quad \text{(Eqn. 2)}$$

Where mean score is the sum of the product of P_i and the corresponding (R_i). (Tang et al., 2013)(Zhang et al., 2012). In a similar way, mean scores of each risk parameters is calculated and ranked accordingly. The Table 12 below shows the

mean scores against each of these risks. Figure 9 presents graphical representation of these risks.

Table 12: Mean Scores for Risks from PAP Survey

Risk	**Mean Score**
Landlessness	3.89
Joblessness	4.13
Homelessness	3.62
Marginalization	4.65
Food Insecurity	2.94
Morbidity	2.51
Loss of Common property	4.58
Social Disarticulation	4.39
Women Issue	3.36
Education Loss	1.42

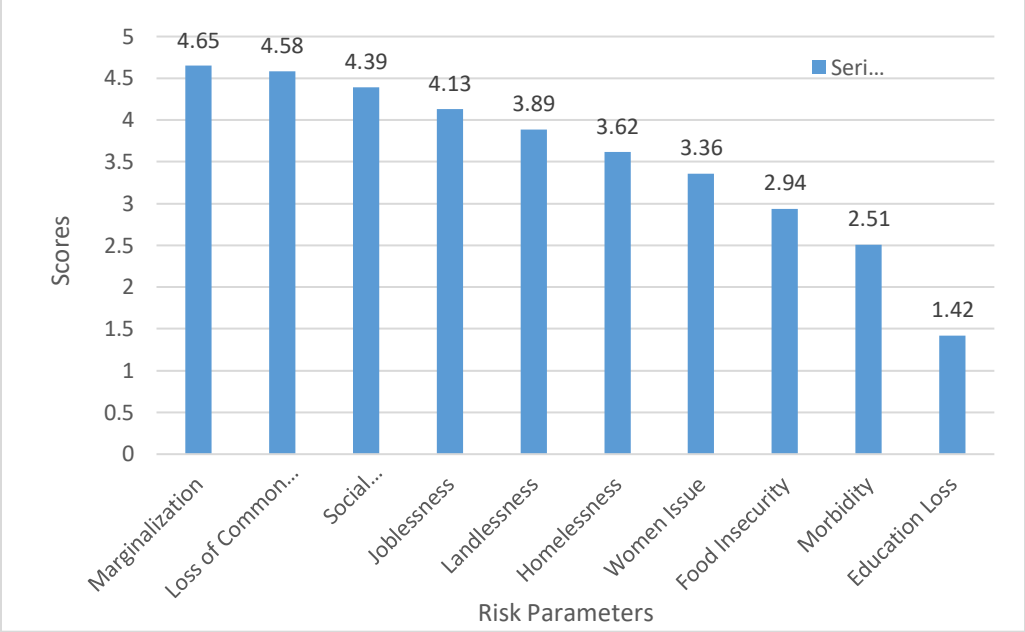

Figure 9: Mean Scores for Risks from PAP Survey

Analysis Result

The top seven risk in terms of ranking are Marginalization, Loss of Access to Common Property, Social Disarticulation, Joblessness, Landlessness, Homelessness and Women Issues. Food Insecurity and Morbidity fall in 8th and 9th place, whereas Education Loss ranks lowest. The findings validate IRR model in context of Uttarakhand.

4.3 Data Analysis for Research Objective 2

Research Question (RQ) 2: Why there are gaps between R & R policy and its implementation?

Research Objective (RO) 2: To assess and address the gaps between R & R policy and the implementation.

A 'Case study method' has been used to address answers to "how" or "why" some social phenomenon works with in-depth analysis (Yin, 2014). During the case studies, information was collected from multiple sources including documents and interviews with regards to the history of the two major hydropower projects in Uttarakhand. Further information on the current status of R&R issues in Uttarakhand, experiences of stakeholders, their understanding regarding issues of R&R, suggestions for the development of a conducive framework for effective R&R initiatives that will strengthen hydropower projects in Uttarakhand were gathered. The case study protocol used in the study contains the following:

1. Overview of the case study: The overview covers the background information of the issues covered in the study and reading of relevant literature. In context of this study, extensive research is carried on historical and existing Rehabilitation and Resettlement issues because of construction of hydro projects.

2. Data collection procedures: The case study differs from a typical laboratory experiments that is controlled. Scholar is required to integrate real world events. Some of the important task for data collection procedures include gaining access to designated organizations and interviewees, adequate resources, developing system for calling guidance, adhering to timeline and keeping provision for unexpected events. In the study, local language was used as medium of communication to PAPs of VPHEP.

3. Data collections questions: The study is carried in an uncontrolled environment. The questions need to be substantive in nature that reflects actual line of enquiry.

4. Information for the case study report: Clarity in terms of presentation style, intended audience, format of the data and reference styles

4.4 Comparative Analyses – Cross Case Synthesis

The two cases, storage facility at Tehri and Run of River at Vishnugad-Pipalkoti has brought interesting outcomes related to resettlement issues. The two projects although 180 Km apart have lot of commonality as well as certain amount of uniqueness. The similarity and the exclusivity in terms of the R&R challenges encountered over the years have made the two a laboratory for assessment of resettlement and rehabilitation issues.

Construction of Tehri Dam started almost four decades back. The hill folks from the region had not seen project of this mammoth proportion. The scale had been something never dreamt before. The developers had torrid time arranging for finances in the initial years. The Russians assisted with technological knowhow. The 260.5-meter-high dam had more displacement and ecological challenges than technical difficulties (Newton, 2008). Initial re-settlement was smooth. The unrest gained momentum in the nineties giving rise to activism. The preparedness of the government was questioned. The risk associated with involuntary resettlement were not proactively considered and as a result rehabilitation took over 25 years to complete (Secretariat & IIT Roorkee, 2008). As Michael Cernea noted, "if potential risks are not addressed on time they are the recipe for potential disasters". This is exactly what happened at Tehri.

Visnhugad Pipalkoti Hydro Electric Project (VPHEP) is one of the large Run of River (RoR) Hydro Project in Uttarakhand that was thought to be the answer for Tehri debacle as RoR is has lesser impact on human displacement and ecology, utilizing free flowing water to generate clean energy. The developer THDC India Ltd had done lot of ground work towards making a robust R&R policy for VPHEP (THDC, n.d.-a). Even with all the homework, VPHEP is facing time and cost overruns. The project was supposed to be operational on 31st December 2017. The

date has been extended until 30th June, 2019 (World Bank, 2017)(World Bank, n.d.).

The risk and issues brought by Cernea in his IRR model has been empirically validated in two hydro projects of Uttarakhand. Further, in depth case studies carried to understand the issues related to involuntary displacement. The PAPs of Tehri as well as Chamoli complained of inadequate compensation. It is also seen that the reasons for landlessness, homelessness, joblessness, marginalization, food insecurity, loss of common property; morbidity, social disarticulation, women issues and education loss differ because of certain localized factors.

Following table highlights the major risk and cause at THEP and VPHEP.

Table 13: Risk and Reasons at THEP and VPHEP

Risk	**Reasons**	
	Tehri Hydro Electric Project **Tehri, Uttarakhand**	**Vishnugad Hydro Electric Project** **Chamoli, Uttarakhand**
Landlessness	• Inadequate compensation • Lack of transparency & corruption • High living cost at relocated sites • Lack of comprehensive R&R policy • Submergence of land	• Inadequate compensation • Lack of transparency & corruption • Cash to cash compensation • Loss due to blasting
Joblessness	• Lack of skill development Initiatives • Lack of market access in relocated site • Loss of Livestock • Submergence of land • Unavailability of bank loans against property	• Blasting affecting agriculture • Lack of skill development Initiatives • Loss of spring/ground water
Homelessness	• Inadequate compensation • High cost of construction material • Inefficient funds dispensation mechanism • Loss of freely available construction material • Lack of comprehensive policy • Submergence of land • Nonavailability of bank loans against property	• Inadequate compensation • Lack of transparency & corruption • Cash to cash compensation • Loss due to blasting
Marginalization	• Inadequate compensation	• Inadequate compensation

	• Loss of livestock • Lack of comprehensive R & R policy	• Lack of comprehensive R & R policy • Loss due to blasting
Loss of Common Property	• Loss of grazing ground • Loss of fodder • Loss of cremation ground • Loss of freely available forest products • Loss of van panchayat land	• Loss of spring water • Loss of grazing ground • Loss of fodder • Loss of cremation ground • Loss of freely available forest products • Loss of van panchayat land
Social Disarticulation	• Loss of culture • Loss of religious places • Loss of community living	• Loss of culture • Loss of religious places • Loss of community living • Varied compensation by contractors for similar roles. • Ineffective communication
Women Issue	• Unsecured urban environment • Loss of decision making • Loss of freedom • Safety & Security concerns	• Safety issues as a result of migration of large number of workers in construction site
Food Insecurity	• Loss of freshly available food • Loss of livestock	• Loss of spring water
Morbidity	• Unhealthy lifestyle at resettlement sites	

At Vishnugad-Pipalkoti, impact of blasting was a major concern. PAPs relocated near construction site, become vulnerable to adversities caused by blasting. The usage of Tunnel Boring Machine (TBM) is an alternative to reduce destruction of structures. One constraint though with that is the transportation of these machines to remote places. Inadequate infrastructure now restricts the usage of best technologies to get into distant hydro project sites. The use of dynamite has potential to cause damage to natural springs that feed water to fields and cater to drinking needs. Blasting is one concern that is affecting the PAPs in terms of Landlessness, Joblessness, Homelessness, Marginalization, Loss of Common property and Food Insecurity.

At Tehri, PAPs were settled in places, which were in a considerable distance from the project site therefore the blasting was not a concern.

Women issue also bring interesting facts. It has been seen from literature that women have suffered more (Asthana, 2012)(Bisht, 2009)(Roy, 1999)(Turaga, 2000). In case of Vishnugad-Pipalkoti, large number of labours had settled in villages for construction activities. This proximity made women susceptible to conflicts. On field trips to the villages in Chamoli, women in particular raised their concerns of mass movement of culturally different migrant workers. The district administration here needs to step up and provide security and assurance to locals. One-step to build assurance is setting up of a police post in the vicinity.

The PAPs from Tehri were settled in culturally, geographically and demographically distant towns. Women lost their freedom and marginalized their social status. The issues of women displaced by Tehri Dam were based on the challenges that an urban town brings. Initiatives to empower women financially by introducing skill enhancement & development schemes will help elevate their place in society.

At Vishnugad-Pipakoti, PAPs were given cash compensation for house construction. Land for land like in the case of Tehri was not an option here. People had multiple land holding in the area. They agreed to shift at their convenience and choice to new locations. PAPs settled for cash compensation, to be used for house construction at new sites. It was seen that cash compensation, which was intended for construction of house, was misspent leaving, PAPs with no funds for construction. In interviews, the developer mentioned the repercussions of not constructing the house on time by PAPs. The developer was unable to initiate project work, as PAPs who misspent their compensation had no house to move in. The delay is causing cost and time overruns for developer.

Another peculiar problem of PAPs from Tehri was inability to get financial assistants from banks against their properties. Resettlement sites in the later stages were acquired with lot of difficulties. Land became scarce. Non reidential land was allocated to some of the PAPs in the later stages of resettlement. It took a while for people to get ownership and titles because of administrative constraints.

In both cases, PAPs complained of inadequate compensation. The PAPs of VPHEP, were sanctioned 10 Lakhs for house construction. The funds were dispersed in three stages. The cost of building material and the inflation is causing distress. Similarly, the PAPs from THEP had concerns of high cost of living in relocated sites. Further, inadequate compensation for common property like usage of forestland and other naturally freely available resources is adding pressure on them. The government and developers here need to consider inflation and rising cost in dispensation of compensation.

Providing livelihood options is a cornerstone for any R&R policy. The PAPs of Tehri were settled in places, which had industrial townships around them. The developers are not in a position to recruit all people displaced. The government in this case could have incentivise local business units that employee people

displaced. State Industrial and Development Corporation of Uttarakhand Ltd. (SIDCUL) in Haridwar is one example that can target PAPs resettled in the district for employment. Corporates can also adopt sites for rehabilitation and capacity building initiatives as a part of their CSR. The proximity of industrial township is absent in the case of Vishnugad-Pipalkoti. Though the number of people displaced are much less, varied remuneration to PAPs by contractors of the project is creating a unique social disarticulation and community rifts. The developers and the government should encourage contractors to have consistency in terms of remuneration for the similar roles.

The stories of rehabilitation at Tehri has travelled places. Most of the PAPs from VPHEP are aware of the packages that were offered to people relocated earlier at THEP. People were relocated in districts of Dehradun, Haridwar and Tehri. Times have changed since Tehri resettlement. The land that was affordable decades back is scarce and thus it becomes difficult for government to provide a similar nature of land-to-land compensation. Following are the measures to bridge gaps between policy and its implementation, drawn from analysing historical and current status of the two cases and data retrieved from different stakeholders on various field trips through series of interviews and discussion.

1. **Transparency and fairness in the dispensation system related to compensation.**

   It has been observed from interviews that compensation lacked transparency and amount of justice in dispensation. Certain PAP enjoyed greater benefit than others did which led to their exponential economic rise. This creates inequality, which results in loss of faith on implementing agencies. Delays in compensation causes great stress. Further, both in THEP and VPHEP, PAPs had concerns with respect to inflation eroding

their compensation. One window clearance can ease the issue of delayed payments.

2. **Provide better infrastructure facility at new locations.**

   The Resettlement & Rehabilitation policy of THDC India Ltd. states that PAPs shall be equipped with better living opportunities at new locations. On ground, delays in creating infrastructure like schools and religious places were observed. In an example of VPHEP, Chamoli, there is conflict between developer and PAPs over construction of school. The developer has agreed to build school on the land owned by the PAPs to which the latter is objecting. People are requesting THDC India Ltd to purchase land instead of using their own. In another example, the PAPs asked the developer to build a replica of centuries old temple that came within the gambit of project site. The temple is part of their cultural identity and religious beliefs. Non-participation and delays in activities as such by government is creating unrest and wider implementation constraints.

3. **Strong political will and lack of support from local administration to the developer**

   The developers are finding it tough to execute plans, as they are not getting support from local administration. There are times when delays occur because of unjustifiable demand. The developer in one instant had to wait for months just to get clearance for construction of small stretch of road connecting project site from the district administration. The reason being the unused cowshed that came in the way, even though all the demands of the owner were accepted. Support from district and state administration is critical for proper implantation of R&R policy.

4. **Frequent Transfer of officials dealing with R & R**

   The R&R process at THEP had enormous challenges. It took years to build trust with PAPs and required great convincing power and effort. In an

example of Tehri, officials from developers spent months to convince locals, build communication channels and addressed their concerns. They were the face of the organisation and locals could trust them because of the genuine efforts put by them over the years. Frequent transfers break human bond resulting in delays in execution.

5. **Livelihood measures to be linked with markets**

   The basic principle behind rehabilitation is to make life of the displaced better. Livelihood options and creation of opportunities help PAPs achieve greater socio-economic independence. THDC India Ltd. is putting efforts towards creation of new avenues. Although it has tied with local Industrial Training Institutes to recruit and train PAPs, THDC India Ltd., should also work towards finding market access for business initiatives started by PAPs.

4.5 Data Analysis for Research Objective 3

RQ3: How can we strengthen the current R & R policy and make it more effective?

RO3: To develop a suggestive R & R framework.

4.5.1 Suggestive R&R Framework

1) **R&R policy**
   a) A comprehensive R&R policy framework developed after consulting all stakeholders that is clear and easy to understand, implement, and not open to further negotiations.
   b) Provision of one-time consolidated monetary compensation for all losses of PAP including loss of land, home, water source, grazing ground and fodder, playground, health, religious places, community life, culture, etc.
   c) Provision to ensure a share of monetary compensation to unmarried adult women and widows of PAP family.

d) For estimating monetary compensation, land and property prices must be market linked instead of circle rates.

e) R&R policy must have provision for implementation through single window system with time bound services.

2) Central Government

a) To engage all stakeholders to facilitate development of a comprehensive R&R policy framework that is clear and easy to understand & implement and not open to further negotiations.

b) To engage all stakeholders to develop a transparent and fair monetary compensation for all losses of PAP including loss of land, home, water source, grazing ground and fodder, playground, health, religious places, community life, culture, etc.

c) To ensure consistent R&R policy environment throughout the country.

d) To engage with state governments to ensure political and bureaucratic support to hydropower projects in the states and to ensure R&R implementation through single window system with time bound services through district administration.

3) State Government

a) To ensure timely payment of one-time consolidated, transparent and fair monetary compensation for all losses of PAP including loss of land, home, water source, grazing ground and fodder, playground, health, religious places, community life, culture, etc.

b) To ensure consistent R&R policy throughout the state.

c) To engage with local district administration to ensure political and bureaucratic support to hydropower projects in the states and to ensure R&R implementation through single window system with time bound services.

d) To incentivize and encourage local business to recruit project affected people.

e) To integrate tourism with hydropower development.

4) District Administration

a) To spread awareness among PAP regarding R&R policy and its implementation.

b) To ensure R&R implementation through single window system with time bound services.

c) To ensure timely payment of one-time consolidated, transparent and fair monetary compensation for all losses of PAP including loss of land, home, water source, grazing ground and fodder, playground, health, religious places, community life, culture, etc.

d) To support developers.

5) Developer

a) To engage with district administration to spread awareness amongst PAPs regarding R&R policy and its implementation.

b) To follow R&R policy and ensure timely disbursal of funds to state government or district administration to ensure timely payment of one-time consolidated, transparent and fair monetary compensation for all losses of PAP including loss of land, home, water source, grazing ground and fodder, playground, health, religious places, community life, culture, etc.

6) PAP

a) To engage with district administration to become aware about R&R policy and its compensation mechanisms.

b) To engage with district administration to facilitate land acquisition through its single window system.

7) Gram Pradhan

a) To engage PAP and district administration to make PAP aware about R&R policy and its compensation mechanisms.

b) To engage with PAP and district administration to facilitate land acquisition through its single window system.

c) To facilitate timely payment of compensation to PAP.

8) NGO

a) To engage PAP, district administration and gram pradhan to make PAP aware about R&R policy and its compensation mechanisms.

b) To engage with PAP, district administration and gram pradhan to facilitate land acquisition through its single window system.

c) To facilitate timely payment of compensation to PAP.

d) Help developer and district administration in negotiations with PAPs.

e) Take part in livelihood restoration mechanism and monitor initiatives from developer.

CHAPTER 5

CONCLUSIONS AND RECOMENDATIONS

5.1 Conclusions

R&R issues related to large hydro projects have been analysed. Along with the issues, redressal and suggestive measures have been discussed. Dams have contributed in an important way to human development and their benefits have been significant. However, the eco-socio and ecological impacts have eroded the progressive effects. As seen in the study, enormous benefits that come with hydropower can only be realized until decision-making process incorporates all stakeholders on proactive basis right from inception. The after effects associated with involuntary displacement, around the globe have given us insights into what needs to be done in order to protect the interest of displaced. The recommendations are penned down after exhaustive literature review covering studies on displacements across the world and analysing primary and secondary data from resettlement sites through case study analysis. An effective R&R framework incorporates mechanism, which address concerns of all stakeholders. It has been observed that different stakeholders have raised concerns when questioned on R&R issues. Suggestions from developers give an insight into some of the operational challenges faced by developer during rehabilitation process especially with officials dealing with R&R being transferred frequently. In an example of Tehri, it took a couple of years for THDC India Ltd. officials to convince, build a rapport and trust with local community. A transfer wipes out this build up. Further developers as well as district administration officials at Vishnugad-Pipalkoti raised concerns of inapt spending splurge by PAPs compensated by cash. The funds dispensed in order to make new residence were reported to have unwisely spent.

Lack of political will towards hydropower development has also resulted in many disputes unresolved. State government support is paramount to any development initiative. Developers are facing problems in getting clearances from local administration resulting in unprecedented delays.

From the perspective of PAPs, it was observed that they had not been adequately compensated especially for common property (compensation for loss of water, grazing ground, fodder etc.). Inadequate compensation leads to landlessness, joblessness, homelessness and marginalisation. Further a single department dealing with R&R, located at a close proximity to resettled sites and one window clearance system will make the process of rehabilitation efficient. There have been extreme delays in equipping people with land titles; as a result, PAPs were not in a position to avail credit facility against property, pushing them towards impoverishment. Ensuring preservation of cultural identity and community integration at relocated sites is essential.

The developers are not in a position to recruit all people displaced despite livelihood opportunities being extremely important for any rehabilitation plan. The government in this case can incentivise local business units that employee people displaced. SIDCUL in Haridwar is one example that can target PAPs from Tehri for employment. Further most hydro project site have potential to be developed as a tourism destination. The lake formed at Tehri can be used for various tourism related initiatives, which can benefit locals in terms of gaining employment.

People across world are now more conscious of the adversities involuntary displacement can bring. The scale at which number of indigenous people are displaced and the uncertainty with their livelihood in the new environment are concerns unanswered until date. This is one reason why rural to urban settlement have not been successful as people who live around nature are not able to adapt to the complexities that urban centre offers. Sardar Sarovar Dam on Narmada river

and Tehri Hydro Projects stand out as causing massive public outcry over the years (Indiatimes, 2017)(Turaga, 2000)(Roy, 1999)(Baboo, 1992). As a result, “Dams” considered to be instruments for economic development got criticized for the collateral socio-economic damage of the displaced (Paranjpye, 1988). The larger the project, greater is the damage perceived.

Few years back it was believed that after the rehabilitation debacle of Tehri, Uttarakhand, the future of storage dam looked bleak in Uttarakhand. Land, which was relatively easily available three decades back, is scarce. The administrative complexities further dent the idea of building mammoth storage structures. Uttarakhand has a large forest cover to the extent of 71 % which further complicates land acquisition (Forest Department Uttarakhand, 2015). This rational was recently challenged after India - Nepal agreed to build one of the tallest dam in the world, surpassing the one at Tehri on Mahakali River in Pithoragargh district of Uttarakhand. In preliminary phase, the proposed 315-meter structure known as Pancheshwar Dam will be a component of the Pancheshwar Multipurpose Project (PMP). Another 97-meter-high dam, 27 km downstream at Rupaligad is proposed and would be part of Pancheshwar Multipurpose Project (PMP) (Thakkar, n.d.).

The hydropower project is expected to generate 5,040 MW of power. The reservoir with a capacity of 11.35 billion cubic meters and an area of 11,600 hectares would be largest in the Himalayas (Thakkar, n.d.). The dam is expected to displace over 31,000 people in three hill districts of Pithoragarh, Almora and Champawat in Uttarakhand. The concerned minister also admitted of challenges in rehabilitating people because of scarcity of land in the state. A proposed vertical township is being proposed as an alternative (Joshi, 2018). After a decade since two component of THEP became operational, Uttarakhand is again faced with potential challenge of mass rehabilitation. The government will have to retrospect and learn lessons from the past.

Moving on, the Three Gorges Dam in China, which displaced 1.26 million people, brings hope. Longitudinal studies have reflected PAPs being economically better at some locations. The elevation in the living standards was seen as a result of government initiatives in job creation. The studies showed increment in food security, wellbeing and reduction in income inequality. The people who suffered more were the PAPs who moved from rural to urban settings. The other encouraging finding was the employment of women in the area of resettlement site, which strengthened the socio – economic fabric otherwise fragmented in other parts of the world (Wilmsen & van Hulten, 2017). The progress thus made over the years for displaced in China was the result of infrastructural creation initiatives made by the state. The Gilgel Gibe III Hydroelectric Project in Ethiopia and Bui Dam in Ghana recorded better employment opportunities and improved housing facilities respectively (Kedanemariam & Mishra, 2013). In a case of Ikawa Dam in Japan, PAPs were extremely satisfied settling in new locations because of better education facility for their children (Takesada, 2009).

The connect between the benefits of clean energy in the form of hydropower and the quality of life of the displaced is the comprehensive R&R policy that is formed after consultation of all stakeholder and implemented efficiently in the most transparent manner.

5.2 Limitations of the Study and Recommendations for Further Work

The resettlement sites for people affected by construction of Tehri Dam were located in districts of Tehri, Dehradun and Haridwar. The plain districts of Dehradun and Haridwar are geographically, demographically and culturally very different from that of New Tehri Town located at an elevation of over 1750 meter in Garhwal region. The issues and challenges faced by people from the plain and hill districts are diverse. For the first objective that is to identify parameters of an effective R & R initiative related to large hydropower projects in Uttarakhand

composite ranks derived indicate severity of issues at all places combined rather than individual scores from three locations.

The study advocates adequate compensation to PAPs for loss of access to common property. It has been seen from literature review, field survey and interviews that people affected by hydro projects had issues adjusting to the new way of life. Hydro projects are usually constructed in places where PAPs livelihood are socio-economically influenced on resources naturally available to them. Food, fodder, water, pastures, natural springs, wood and many other are available at no cost. The resettlement sites especially in our study were deficient in providing people with environment that PAPs enjoyed before relocations. Loss of "Van Panchayat" land is a concern for PAPs. Van Panchayats are patches of forest that are owned, managed and administered by the village community. Communities over centuries evolved their daily chores around natural resources that came from nature. The concept of sustainable rehabilitation evolves equipping people with choices that they prefer. Future research can attempt to develop a mechanism to estimate compensation to PAP for loss of access to common property.

CHAPTER 6

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Appendix A – Development of Initial Codes and Initial Code Categories

Document : Main Report - VPHEP	
Relevant phrases	Loss of tree; loss of structure; loss of land; loss of van panchayat/grazing land; loss of income; loss of fodder; loss of fuel wood; women issue; women safety; lack of information; change of name of project; impact of blasting; loss of natural spring (*sroth*); loss of health (noise and dust pollution); loss of cremation ground; loss of access to river side material; demand for better market value; lack of community development activities; loss of bridge; loss of income; compensation for forest land; relocation of village at one place; lack of communication; demand for Tehri R&R policy at VPHEP; employment opportunities; lack of livelihood training; demand for labour room; landside threat; contracts to local contractors; prior information before any work; better land rates; hiring vehicles from local community; capacity building measures; Losses to home; Loss of agriculture land; and Loss of waterbodies, etc. due to blasting; Loss of cremation ground; Loss of health and hygiene; Loss of livelihood; Loss of Van Panchayat Land; Loss of water for drinking; Lack of water for farming.
Initial codes	Loss of personal property; Loss of agriculture; Loss of common property; Loss of common property; Health risk; Loss of job; loss of culture; Loss of common property; loss of health; loss of home; community disarticulation; lack of livelihood training; loss of health; loss of communication; community disarticulation; Loss of common property; Loss of agriculture

Initial category of codes	Homelessness; Landlessness; Food insecurity; Loss of common property; Loss of common property; Morbidity; Joblessness; Loss of common property; Loss of common property; Food insecurity; Morbidity; Social disarticulation.
World Bank Report	
Relevant phrases	Loss of culture; loss of water bodies; risk to structures; risk of landslides and earthquakes; women security; restoration of livelihood; infrastructure and public services in relocated sites; lack of negotiation from developer on compensation to PAPs; issue of slurry disposal; insufficient attention to women security; livelihood restoration. Loss of Livelihood; Loss of Water; Women Security.
Initial codes	Loss of job; Loss of common property; Women Security
Initial category of codes	Joblessness; Loss of common property; Women Issue
Rehabilitation and Resettlement in Tehri Hydro Power Project – A Amarender Reddy (Based on Administrative Staff College of India, Hyderabad , India)	
Relevant phrases	Loss of allotted houses in the tin shed should be transferred to the people; Employment opportunities to be increased by encouraging local based small scale industries; The cost of living has been increased; Tax incentives to be given; Long compensation allotment; Business opportunities low; Shops are provided in unstable Locality/Place; livestock has come down; lack of employment opportunities; Poor grievance redressal system; land that is suitable from cultivation.

Initial codes	Loss of personal property; Loss of livestock; Loss of common property; Loss of Business opportunity; Lack of employment; Loss of common property; Loss of job; Loss of common property; Loss of common property; Loss of livestock; Loss of Agriculture.
Initial category of codes	Homelessness; Landlessness; Food insecurity; Loss of common property; Joblessness; Loss of common property; Loss of common property; Homelessness; Food insecurity; Social Disarticulation; Marginalization; Food Insecurity
Development-Induced Displacement and Women: The Case of the Tehri Dam, India	
Relevant phrases	Local people had free access to resources; Women enjoyed sense of security; Loss of Livelihood; High cost of house construction; Artisans have lost jobs; Agricultural jobs have been lost; New form of internal marginalization has emerged; increasing obesity, lack of physical stamina, indigestion; people have depended on the market for food; PAPs cannot apply for bank loans; Village panchayat no longer exist; women's marginalization and disempowerment is more significant; Displacement affecting division of labor.
Initial codes	Loss of common property; Women Security; Lack of employment; lack of Job; Loss of Personal Property; Health Risk
Initial category of codes	Loss of Common Property; Joblessness; Loss of common property; Women Issue; Marginalization, Food Insecurity, Landlessness; Homelessness; Social Disarticulation; Marginalization

Appendix B – Responses of Validators against Initial Protocol

Q.No.	Questions	Respondent 1	Respondent 2
Introductory			
1.	What is your opinion about Hydropower Projects?	As an introductory question, this is fine.	This question seems good to engage the respondent.
2.	Have you ever been a stakeholder in the development of Hydropower Projects in India?	As the study is about R&R issues, purely technical or financial engagements as a stakeholder with no exposure to R&R issues of the project may not help the study. Thus, this question may be deleted.	Engagements as a stakeholder with zero exposure to R&R issues of the project may not help the study. Thus, this question can be deleted.
3.	Have you ever been involved in Hydropower Projects in Uttarakhand? If yes, kindly share your mode of involvement.	Question No. 3 and 4 can be clubbed as they intend to record the response of stakeholders relevant to the study.	As the study intends to record the response of stakeholders with experiences relevant to the study, Question no. 3 and 4 can be clubbed.

4.	Have you ever been affected by Hydropower Projects in Uttarakhand? If yes, kindly share how the project affected you.	Question no. 3 and 4 can be clubbed as they intend to record the response of stakeholders relevant to the study.	As the study intends to record the response of stakeholders with experiences relevant to the study, Question no. 3 and 4 can be clubbed.
5.	What are the advantages and disadvantages of Hydropower Projects?	This question is necessary as it allows the respondents to think about both the pros and cons of Hydropower Projects in Uttarakhand and allows the respondents to provide a balanced view.	It is a good question as it makes the respondents to engage in a balanced way.
Current R&R Issues			
6.	What is your take on R&R issues associated with Hydropower Projects in Uttarakhand?	This is an effective way to take the discussion towards R&R issues associated with Hydropower Projects in Uttarakhand.	This question is necessary.
7.	How does R&R issues impact the viability of Hydropower Projects in Uttarakhand?	This is an apt question.	This question may be used to affirm the negative impact of R&R issues on the development of Hydropower Projects in Uttarakhand.

8.	What are the parameters involved in current R&R framework?	This question can be dropped as question number 9 covers the same subject in a more detailed manner.	The question can be deleted as question number 9 covers the experiences of the stakeholders in a more detailed manner. Moreover, it is quite possible that a few stakeholders may not be aware about the parameters involved in current R&R framework.
9.	Based on your experience, share the impact of Hydropower Projects on the following aspects of PAP: Land; Job/Livelihood; Home; Food security; Health; Common property; Community life; Women security; Education; Any other issue	This question is necessary.	An apt question.
10.	Is the current R&R policy effective enough to address R&R issues of Hydropower projects in	This question is necessary as it captures the lacunas if any in the current R&R policy.	A relevant question.

	Uttarakhand? If no, comment on the lacunas of the policy.		
Implementation Issues			
11.	Share your experiences regarding the implementation of R&R initiatives for PAP of Hydropower Projects in Uttarakhand.	This question is good as it captures the implementation issues and can help accomplish RO2.	This question is related to RO2 and thus must be there.
12.	Which agencies are involved in the implementation of R&R initiatives for PAP of Hydropower Projects in Uttarakhand and what are your experiences with them?	This question is a repeat of question number 11 and thus can be deleted.	After question number 11, this question is irrelevant.
13.	Is there any gap between current R&R policy and its implementation	Quite necessary to understand the implementation issues.	This question is necessary and is directly related to RO2.

	for Hydropower Projects in Uttarakhand? If yes, share your experiences.		
Remedial Measures			
14.	Based on your experiences, suggest improvements (if any) in R&R policy associated with Hydropower Projects in Uttarakhand to make it more effective.	This question is related to RO3 and thus necessary.	This question is directly related to RO3 and thus must be there.
15.	Suggest measures to address implementation issues and minimize gaps between R&R policy and implementation	This question is related to RO3 and thus necessary.	This question is relevant to address RO3 and thus necessary.

Appendix C – Questions Validated Against Modified Protocol

Q.No.	Questions
	Introductory
1	What is your opinion about Hydropower Projects?
2	Have you ever been involved in and/or affected by Hydropower Projects in Uttarakhand? If yes, kindly share your overall experience.
3	What are the advantages and disadvantages of Hydropower Projects?
	Current R&R Issues
4	What is your take on R&R issues associated with Hydropower Projects in Uttarakhand?
5	How does R&R issues impact the viability of Hydropower Projects in Uttarakhand?
6	Based on your experience, share the impact of Hydropower Projects on the following aspects of PAP:

	Land; Job/Livelihood; Home; Food security; Health; Common property; Community life; Women security; Education; Any other issue.
7	Is the current R&R policy effective enough to address R&R issues of Hydropower projects in Uttarakhand? If no, comment on the lacunas of the policy.
	Implementation Issues
8	Share your experiences regarding the implementation of R&R initiatives for PAP of Hydropower Projects in Uttarakhand.
9	Is there any gap between current R&R policy and its implementation for Hydropower Projects in Uttarakhand? If yes, share your experiences.
	Remedial Measures
10	Based on your experiences, suggest improvements (if any) in R&R policy associated with Hydropower Projects in Uttarakhand to make it more effective.
11	Suggest measures to address implementation issues and minimize gaps between R&R policy and implementation

Appendix D – Interview Transcripts for VPHEP

Q1: What is your opinion about Hydropower Projects?
Respondent 1 (Local administration 1 – VPHEP): Hydropower projects are beneficial to the society but often lead to social conflicts. Codes: Hydropower projects; beneficial; society; social conflicts Number of Codes: 4 New Codes: 4
Respondent 2 (Local administration 2 – VPHEP): Hydropower projects promotes socio-economic development but involve R&R issues that often lead to social conflicts, protests and litigation. Codes: Hydropower projects; socio-economic development; R&R issues; social conflicts; protests; litigation Number of Codes: 6 New Codes: 4
Respondent 3 (Gram Pradhan – Haat): Hydropower projects are beneficial to the local area as they create jobs and income generation activities. However, due to R&R issues, these often lead to social unrest and protests. Codes: Hydropower projects; beneficial; local area; jobs; income generation activities; R&R issues; social unrest; protests Number of codes: 8 New codes: 4

Respondent 4 (Developer 1 - VPHEP): Hydropower projects are beneficial to the society as they generate clean, sustainable and cheap power. Codes: Hydropower projects; beneficial; society; clean; sustainable; cheap; power Number of Codes: 7 New Codes: 4
Respondent 5 (Developer 2 - VPHEP): Hydropower projects are beneficial to the society as they generate clean, sustainable and cheap power and also lead to socio-economic development of local area. However, due to R&R issues, project delay and cost overrun is quite common. Codes: Hydropower projects; beneficial; society; clean; sustainable; cheap; socio-economic development; local area; R&R issues; project delay; cost overrun Number of Codes: 11 New Codes: 2
Respondent 6 (NGO – VPHEP): Hydropower projects are beneficial but they often lead to displacement of local population. The developers often offer inadequate compensation making the project-affected people suffer. Codes: Hydropower projects; beneficial; displacement; local population; developers; inadequate compensation; project affected people; suffer. Number of Codes: 8 New Codes: 6

Respondent 7 (PAP 1 – VPHEP): Hydropower projects lead to displacement and the project-affected people often suffer due to inadequate compensation. Codes: Hydropower projects; displacement; project affected people; suffer; inadequate compensation Number of Codes: 5 New Codes: 0
Respondent 8 (PAP 2 – VPHEP): Hydropower projects lead to displacement of local population and they often get inadequate compensation. Codes: Hydropower projects; displacement; local population; inadequate compensation Number of Codes: 4 New Codes: 0
Q2: Have you ever been involved in and/or affected by Hydropower Projects in Uttarakhand? If yes, kindly share your overall experience.
Respondent 1 (Local administration 1 – VPHEP): Involved with VPHEP as a part of local administration. R&R issues created lot of social conflicts and protests. Codes: VPHEP; local administration; R&R issues; social conflicts; protests Number of Codes: 5 New Codes: 5

Respondent 2 (Local administration 2 – VPHEP): Was a stakeholder in VPHEP as a part of local administration. Displacement and subsequent R&R issues lead to social conflicts, protests and litigation. Codes: stakeholder; VPHEP; local administration; displacement; R&R issues; social conflicts; protests; litigation Number of Codes: 8 New Codes: 3
Respondent 3 (Gram Pradhan – Haat): As a Gram Pradhan, I was a stakeholder in VPHEP. Displacement due to blasting and submergence created lot of R&R issues that resulted in social conflicts, protests and litigation. Codes: Gram Pradhan; stakeholder; VPHEP; displacement; blasting; submergence; R&R issues; social conflicts; protests; litigation Number of codes: 10 New codes: 3
Respondent 4 (Developer 1 - VPHEP): From developer side, I was engaged in VPHEP. Displacement due to blasting and submergence created lot of R&R issues resulted in social conflicts, protests and litigation causing project delays and cost overruns. Codes: Developer; VPHEP; displacement; blasting; submergence; R&R issues; social conflicts; protests; litigation; project delays; cost overruns Number of Codes: 11 New Codes: 2

Respondent 5 (Developer 2 - VPHEP): As a developer, I worked in VPHEP. Blasting and submergence created lot of R&R issues resulted in social conflicts, protests and litigation causing project delays and cost overruns. Codes: Developer; VPHEP; blasting; submergence; R&R issues; social conflicts; protests; litigation; project delays; cost overruns Number of Codes: 10 New Codes: 0
Respondent 6 (NGO – VPHEP): As a member of NGO, I have been representing the PAP as they lost land, home, livelihood, community life. Displacement and inadequate compensation resulted in social conflicts, protests and litigation. Codes: NGO; PAP; lost; land; home; livelihood; community life; displacement; inadequate compensation; social conflicts; protests; litigation Number of Codes: 12 New Codes: 8
Respondent 7 (PAP 1 – VPHEP): I was a PAP in VPHEP. Blasting and submergence lead to displacement, lost my land, home, livelihood, community life and got inadequate compensation. Codes: PAP; VPHEP; blasting, submergence; displacement; lost; land; home; livelihood; community life; inadequate compensation Number of Codes: 11 New Codes: 0

Respondent 8 (PAP 2 – VPHEP): As a PAP in VPHEP, I lost land, home, community life and livelihood due to blasting and submergence and got inadequate compensation. Codes: PAP; VPHEP; lost; land; home; community life; livelihood; blasting; submergence; inadequate compensation Number of Codes: 10 New Codes: 0
Q3: What are the advantages and disadvantages of Hydropower Projects?
Respondent 1 (Local administration 1 – VPHEP): Advantages: Socio-economic development with creation of jobs and income generation activities. Disadvantages: R&R issues Codes: Socio-economic development; creation; job; income generation activities; R&R issues Number of Codes: 5 New Codes: 5
Respondent 2 (Local administration 2 – VPHEP): Advantages: Socio-economic development with creation of jobs and income generation activities. Disadvantages: R&R issues, social conflicts, protests Codes: Socio-economic development; creation; jobs; income generation activities; R&R issues; social conflicts; protests Number of Codes: 7 New Codes: 2

Respondent 3 (Gram Pradhan – Haat): Advantages: Socio-economic development with creation of jobs and income generation activities. Disadvantages: Displacement; Inadequate compensation; R&R issues, social conflicts, protests, Codes: Socio-economic development; creation; jobs; income generation activities; displacement; inadequate compensation; R&R issues; social conflicts; protests Number of codes: 9 New codes: 2
Respondent 4 (Developer 1 - VPHEP): Advantages: Cheap and clean power along with socio-economic development with creation of jobs and income generation activities. Disadvantages: R&R issues, social conflicts, protests Codes: Cheap; clean; power; socio-economic development; creation; jobs; income generation activities; R&R issues, social conflicts, protests Number of Codes: 10 New Codes: 2
Respondent 5 (Developer 2 - VPHEP): Advantages: Cheap, clean and sustainable power along with socio-economic development with creation of jobs and income generation activities. Disadvantages: R&R issues, social conflicts, protests Codes: Cheap; clean; sustainable; power; socio-economic development; creation; jobs; income generation activities; R&R issues, social conflicts, protests

Number of Codes: 11 New Codes: 1
Respondent 6 (NGO – VPHEP): Advantages: Socio-economic development with creation of jobs and income generation activities. Disadvantages: Displacement due to blasting and submergence leading to loss of livelihood, home, land, community life. Inadequate compensation results in social conflicts, protests and litigation Codes: Socio-economic development, creation, jobs, income generation activities, displacement, blasting, submergence, loss, livelihood, home, land, community life, inadequate compensation, social conflicts, protests, litigation Number of Codes: 16 New Codes: 8
Respondent 7 (PAP 1 – VPHEP): Advantages: Socio-economic development with creation of jobs and income generation activities. Disadvantages: Blasting and submergence leading to displacement, loss of livelihood, home, land, community life. Inadequate compensation results in social conflicts, protests and litigation Codes: Socio-economic development, creation, jobs, income generation activities, blasting, submergence, displacement, loss, livelihood, home, land, community life, inadequate compensation, social conflicts, litigation Number of Codes: 15 New Codes: 0

Respondent 8 (PAP 2 – VPHEP): Advantages: Socio-economic development with creation of jobs. Disadvantages: Blasting and submergence leading to displacement, loss of livelihood, home, land, community life. Inadequate compensation results in social conflicts, protests and litigation Codes: Socio-economic development, creation, jobs, blasting, submergence, displacement, loss, livelihood, home, land, community life, inadequate compensation, social conflicts, litigation Number of Codes: 14 New Codes: 0\
Q4: What is your take on R&R issues associated with Hydropower Projects in Uttarakhand?
Respondent 1 (Local administration 1 – VPHEP): R&R issues need to be addressed comprehensively to ensure timely completion of hydropower projects. With my experience regarding VPHEP, I can tell you that there is lack of comprehensive planning and lack of political will that makes it very difficult for the local administration to address R&R issues and consequent conflicts. Codes: R&R issues; timely completion; hydropower projects; VPHEP; lack of comprehensive planning; lack of political will; difficult; local administration; conflicts. Number of Codes: 9 New Codes: 9

Respondent 2 (Local administration 2 – VPHEP): With my experiences regarding VPHEP, I can tell you that lack of comprehensive planning, lack of political will and frequent changes in policy make it quite difficult for the local administration to address R&R issues. Codes: VPHEP; lack of comprehensive planning; lack of political will; frequent changes in policy; difficult; local administration; R&R issues. Number of Codes: 7 New Codes: 1
Respondent 3 (Gram Pradhan – Haat): Current R&R policy is inadequate as it leads to inadequate compensation. Implementation of the R&R initiatives also suffer due to bureaucratic and administrative mismanagement by local administration. There is poor coordination and communication between representatives of local administration implementing R&R initiatives. As a result, the PAP often suffer as they are asked to run from one office to another spread over long distances in the hills of Uttarakhand. Codes: Current; R&R policy; inadequate; inadequate compensation; implementation; R&R initiatives; bureaucratic and administrative mismanagement; local administration; poor coordination and communication; PAP; suffer; run from one office to another; spread over long distances; hills of Uttarakhand Number of codes: 14 New codes: 13

Respondent 4 (Developer 1 - VPHEP): With my experiences regarding VPHEP, it is clear that lack of political will and frequent changes in policy make it quite difficult to address R&R issues. Bureaucratic and administrative mismanagement by local administration and poor coordination and communication between representatives of local administration escalate R&R issues and hinder the development of hydropower projects in Uttarakhand. Codes: VPHEP; lack of political will; frequent changes in policy; difficult; R&R issues; bureaucratic and administrative mismanagement; local administration; poor coordination and communication; hinder; development; hydropower projects; Uttarakhand Number of Codes: 13 New Codes: 3
Respondent 5 (Developer 2 - VPHEP): From my experiences in VPHEP, it is clear that lack of political will and frequent changes in policy make it quite difficult to address R&R issues. Loss of land and home due to blasting and submergence happens but these are compensated as per R&R policy. Bureaucratic and administrative mismanagement by local administration and poor coordination and communication between representatives of local administration escalate R&R issues and hinder the development of hydropower projects in Uttarakhand. Codes: VPHEP; lack of political will; frequent changes in policy; difficult; R&R issues; loss; land; home; blasting; submergence; compensated; R&R policy; bureaucratic and administrative mismanagement; local administration; poor coordination and communication; hinder; development; hydropower projects; Uttarakhand Number of Codes: 19 New Codes: 6

Respondent 6 (NGO – VPHEP): Current R&R policy is inadequate as it leads to inadequate compensation. Implementation of the R&R initiatives also suffer due to bureaucratic and administrative mismanagement by local administration. There is poor coordination and communication between representatives of local administration implementing R&R initiatives. Blasting and submergence leads to displacement resulting in loss of home, land, livelihood, water source, religious places, van panchayat land, grazing ground and fodder, cremation ground, community life, culture, health and hygiene. Poor support by local administration results in delayed and inadequate compensation leading to social conflicts and protests. There is a need to make R&R policy more comprehensive and to ensure effective implementation. Codes: Current; R&R policy; inadequate; inadequate compensation; implementation; R&R initiatives; bureaucratic and administrative mismanagement; local administration; poor coordination and communication; blasting; submergence; displacement; loss; home; land; livelihood; water source; religious places, van panchayat land; grazing ground and fodder; cremation ground; community life; culture; health and hygiene; poor support; delayed; social conflicts; protests; comprehensive; effective implementation Number of Codes: 30 New Codes: 15
Respondent 7 (PAP 1 – VPHEP): Current R&R policy leads to inadequate compensation. Blasting and submergence leads to displacement resulting in loss of home, land, livelihood, water source, religious places, van panchayat land, grazing ground and fodder, etc. Poor support by local administration results in delayed and inadequate compensation leading to social conflicts and protests.

Codes: Current; R&R policy; inadequate compensation; blasting; submergence; displacement; loss; home; land; livelihood; water source; religious places; van panchayat land; grazing ground and fodder; poor support; local administration; delayed; social conflicts; protests Number of Codes: 19 New Codes: 0
Respondent 8 (PAP 2 – VPHEP): Blasting and submergence leads to displacement resulting in loss of home, land, livelihood, water source, religious places, etc. Poor support by local administration results in delayed and inadequate compensation leading to social conflicts and protests. Codes: Blasting; submergence; displacement; loss; home; land; livelihood; water source; religious places; poor support; local administration; delayed; social conflicts; protests Number of Codes: 14 New Codes: 0
Q5: How does R&R issues impact the viability of Hydropower Projects in Uttarakhand?
Respondent 1 (Local administration 1 – VPHEP): R&R issues associated with hydropower projects in Uttarakhand lead to social conflicts resulting in time delays and cost overruns making them unviable. Codes: R&R issues; hydropower projects; Uttarakhand; social conflicts; time delays; cost overruns, unviable Number of Codes: 7 New Codes: 7

Respondent 2 (Local administration 2 – VPHEP): Due to R&R issues, projects face social conflicts and protests leading to time delays and cost overruns. Codes: R&R issues; social conflicts; protests; time delays; cost overruns. Number of Codes: 5 New Codes: 1
Respondent 3 (Gram Pradhan – Haat): R&R issues lead to social conflicts resulting in time delays and cost overruns. Codes: R&R issues; social conflicts; time delays; cost overruns. Number of Codes: 4 New Codes: 0
Respondent 4 (Developer 1 - VPHEP): Due to R&R issues, hydropower projects in Uttarakhand face social conflicts, protests, work stoppage and litigation leading to time delays and cost overruns. Codes: R&R issues; hydropower projects; Uttarakhand; social conflicts; protests; work stoppage; litigation; time delays; cost overruns. Number of Codes: 9 New Codes: 2
Respondent 5 (Developer 2 - VPHEP): Because of R&R issues, projects face social conflicts, protests, work stoppage and litigation leading to time delays and cost overruns and consequently making the hydropower projects in Uttarakhand unviable.

Codes: R&R issues; social conflicts; protests; work stoppage; litigation; time delays; cost overruns; hydropower projects; Uttarakhand; unviable. Number of Codes: 10 New Codes: 0
Respondent 6 (NGO – VPHEP): Because of R&R issues including displacement and inadequate compensation, projects face social conflicts, protests, work stoppage and litigation leading to time delays and cost overruns and consequently making the hydropower projects in Uttarakhand unviable. Codes: R&R issues; displacement; inadequate compensation; social conflicts; protests; work stoppage; litigation; time delays; cost overruns; hydropower projects; Uttarakhand; unviable. Number of Codes: 12 New Codes: 2
Respondent 7 (PAP 1 – VPHEP): R&R issues including displacement and inadequate compensation lead to social conflicts, protests, work stoppage and litigation leading to time delays and cost overruns and consequently making the hydropower projects in Uttarakhand unviable. Codes: R&R issues; displacement; inadequate compensation; social conflicts; protests; work stoppage; litigation; time delays; cost overruns; hydropower projects; Uttarakhand; unviable. Number of Codes: 12 New Codes: 0

Respondent 8 (PAP 2 – VPHEP): R&R issues including displacement and inadequate compensation lead to social conflicts, protests, work stoppage and litigation leading to time delays and cost overruns and consequently making the hydropower projects in Uttarakhand unviable. Codes: R&R issues; displacement; inadequate compensation; social conflicts; protests; work stoppage; litigation; time delays; cost overruns; hydropower projects; Uttarakhand; unviable. Number of Codes: 12 New Codes: 0
Q6: Based on your experience, share the impact of Hydropower Projects on the following aspects of PAP: Land; Job/Livelihood; Home; Food security; Health; Common property; Community life; Women security; Education; Any other issue
Respondent 1 (Local administration 1 – VPHEP): Based on my experience with VPHEP, I can say that hydropower projects lead to loss of land, home, livelihood, food security, health, common property (grazing ground and fodder, water source, religious places, playground), community life and women security. In addition, the PAP often complain about inadequate compensation and lack of facilities at resettlement locations. Codes: VPHEP; hydropower projects; loss; land; home; livelihood; food security; health; common property; grazing ground and fodder; water source; religious places; playground; community life; women security; PAP; complain; inadequate compensation; lack of facilities; resettlement locations.

Number of Codes: 20 New Codes: 20
Respondent 2 (Local administration 2 – VPHEP): Hydropower projects lead to loss of land, home, livelihood, food security, health, common property (grazing ground and fodder, water source, religious places, playground, van panchayat land, cremation ground), community life, culture, etc. Often, PAP complain about inadequate compensation and lack of facilities at resettlement locations. Codes: Hydropower projects; loss; land; home; livelihood; food security; health; common property; grazing ground and fodder; water source; religious places; playground; van panchayat land, cremation ground, community life, culture, PAP; complain; inadequate compensation; lack of facilities; resettlement locations. Number of Codes: 21 New Codes: 3
Respondent 3 (Gram Pradhan – Haat): Hydropower projects cause displacement of PAP. Generally, before displacement, PAP have home, agricultural land and access to common property. In addition, before displacement, the PAP are often found to be engaged in agriculture for livelihood and are part of a community along with its distinct culture. Post displacement, at the new location, these PAP feel uprooted as they experience loss of land, home, livelihood, food security, health, common property (grazing ground and fodder, water source, religious places, playground, van panchayat land, cremation ground), community life, culture, etc. Often, PAP complain about inadequate compensation and lack of facilities at resettlement locations. In addition, it has been found that if a woman is the head of a joint family of PAP loses her property rights if her sons get the R&R compensation deeply affecting women security.

Codes: Hydropower projects; displacement; PAP; home; agricultural land; access; common property; agriculture; livelihood; community; culture; new location; uprooted; loss; land; food security; health; grazing ground and fodder; water source; religious places; playground; van panchayat land, cremation ground, community life, culture, complain; inadequate compensation; lack of facilities; resettlement locations; woman; head of joint family; loses her property rights; sons get R&R compensation; affecting; women security Number of Codes: 35 New Codes: 11
Respondent 4 (Developer 1 - VPHEP): Hydropower projects cause displacement of PAP. Post displacement, at the new location, these PAP feel uprooted as they experience loss of land, home, livelihood, food security, health, common property (grazing ground and fodder, water source, religious places, playground, van panchayat land, cremation ground), community life, culture, etc. Often, PAP complain about inadequate compensation and lack of facilities at resettlement locations. Codes: Hydropower projects; displacement; PAP; uprooted; loss; land; home; livelihood; food security; health; common property; grazing ground and fodder; water source; religious places; playground; van panchayat land, cremation ground, community life, culture, complain; inadequate compensation; lack of facilities; resettlement locations. Number of Codes: 23 New Codes: 0
Respondent 5 (Developer 2 - VPHEP): Because of displacement due to hydropower projects, at the new location PAP feel uprooted as they experience loss of land, home, livelihood, food security, health, common property (grazing ground and fodder, water source, religious places, playground, van panchayat land, cremation ground), community life, culture, etc. Often, PAP

complain about inadequate compensation and lack of facilities at resettlement locations. Frequent changes in policy coupled with bureaucratic and administrative mismanagement aggravate the loss to PAP. Codes: Displacement; hydropower projects; new location; PAP; uprooted; loss; land; home; livelihood; food security; health; common property; grazing ground and fodder; water source; religious places; playground; van panchayat land, cremation ground, community life, culture, complain; inadequate compensation; lack of facilities; resettlement locations; frequent changes in policy; bureaucratic and administrative mismanagement Number of Codes: 26 New Codes: 2
Respondent 6 (NGO – VPHEP): Hydropower projects make the displaced PAP feel uprooted as they experience loss of land, home, livelihood, food security, health, common property, community life, culture, etc. Often, PAP complain about inadequate compensation and lack of facilities at resettlement locations. Frequent changes in policy coupled with bureaucratic and administrative mismanagement aggravate the loss to PAP as they are made to run from one office to another to claim the compensation that are often found to be inadequate in comparison with the loss to the PAP. Codes: Hydropower projects; displaced; PAP; uprooted; loss; land; home; livelihood; food security; health; common property; community life; culture; complain; inadequate compensation; lack of facilities; resettlement locations; frequent changes in policy; bureaucratic and administrative mismanagement; run from one office to another; compensation; inadequate; comparison Number of Codes: 23 New Codes: 4

Respondent 7 (PAP 1 – VPHEP): Hydropower projects make the displaced PAP feel uprooted as they experience loss of land, home, livelihood, food security, health, common property (grazing ground and fodder, water source, religious places, playground, van panchayat land, cremation ground), community life, culture, etc. Often, PAP complain about inadequate compensation and lack of facilities at resettlement locations. Frequent changes in policy coupled with bureaucratic and administrative mismanagement aggravate the loss to PAP as they are made to run from one office to another to claim the compensation that are often found to be inadequate in comparison with the loss to the PAP.

Codes: Hydropower projects; displaced; PAP; uprooted; loss; land; home; livelihood; food security; health; common property; grazing ground and fodder; water source; religious places; playground; van panchayat land; cremation ground; community life; culture; complain; inadequate compensation; lack of facilities; resettlement locations; frequent changes in policy; bureaucratic and administrative mismanagement; run from one office to another; compensation; inadequate; comparison

Number of Codes: 29 New Codes: 0

Respondent 8 (PAP 2 – VPHEP): Hydropower projects lead to loss of land, home, livelihood, food security, health, common property (grazing ground and fodder, water source, religious places, playground, etc.), community life. Often, PAP complain about inadequate compensation and lack of facilities at resettlement locations. Frequent changes in policy coupled with bureaucratic and administrative mismanagement aggravate the loss to PAP as they are made to run from one office to another to claim the compensation that are often found to be inadequate in comparison with the loss to the PAP.

Codes: Hydropower projects; loss; land; home; livelihood; food security; health; common property; grazing ground and fodder; water source; religious places; playground; community life; complain; inadequate compensation; lack of facilities; resettlement

locations; frequent changes in policy; bureaucratic and administrative mismanagement; run from one office to another; compensation; inadequate; comparison Number of Codes: 23 New Codes: 0
Q7: Is the current R&R policy effective enough to address R&R issues of Hydropower projects in Uttarakhand? If no, comment on the lacunas of the policy.
Respondent 1 (Local administration 1 – VPHEP): As Uttarakhand is a complex state with respect to geography and there is stark difference between value of land and associated infrastructure facilities and economic opportunities for land in hilly and plain areas, R&R becomes quite challenging. Land for land compensation, as mentioned in current R&R policy, gets quite ambiguous in case of Uttarakhand, as the values of hilly land and plain are quite different. In addition, instead of circle rates, R&R policy must have a transparent and fair compensation policy based on market value of land. Codes: Uttarakhand; complex state; with respect to geography; stark difference; value of land; infrastructure facilities; economic opportunities; hilly; plain; areas; R&R; challenging; land for land compensation; R&R policy; ambiguous; circle rates; transparent; fair; compensation policy; market value; land Number of Codes: 21 New Codes: 21
Respondent 2 (Local administration 2 – VPHEP): Current R&R policy is not effective enough. Land for land compensation, as mentioned in current R&R policy, gets quite ambiguous in case of Uttarakhand, as the values of land in hilly and plain areas are quite different. In addition, instead of circle rates, R&R policy must have a transparent and fair compensation policy based on

market value of land. In addition, not much negotiation should be allowed as that often leads to unfair bargaining that hinders the development of hydropower projects in Uttarakhand.

Codes: Current; R&R policy; not effective; land for land compensation; ambiguous; Uttarakhand; hilly; plain; areas; different; circle rates; transparent; fair; compensation policy; market value; land; not much negotiation; should be allowed; unfair bargaining; hinders; development; hydropower projects.

Number of Codes: 21 New Codes: 9

Respondent 3 (Gram Pradhan – Haat): Current R&R policy is not effective enough. Land for land compensation, as mentioned in current R&R policy, leads to inadequate compensation in Uttarakhand, as the values of land in hilly and plain areas are quite different. In addition, instead of circle rates, R&R policy must have a transparent and fair compensation policy based on market value of land. Additionally, apart from assessing loss to home and land, PAP's loss of livelihood, common property, community life, culture, etc. must be considered for fixing the compensation. In addition, if a woman is the head of a joint family of PAP, her property rights must be protected.

Codes: Current, R&R policy; not effective; land for land compensation; inadequate compensation; Uttarakhand; land; hilly; plain; areas; different; circle rates; transparent; fair; compensation policy; market value; assessing; loss to home and land; PAP's; loss; livelihood; common property; community life; culture; must be considered; for fixing; compensation; woman; head of joint family; PAP; property rights; protected.

Number of Codes: 32 New Codes: 15

Respondent 4 (Developer 1 - VPHEP): Current R&R policy is not effective enough. Land for land compensation, as mentioned in current R&R policy, gets quite ambiguous in case of Uttarakhand, as the values of land in hilly and plain areas are quite different. In addition, instead of circle rates, R&R policy must have a transparent and fair compensation policy based on market value of land. Also, not much negotiation should be allowed as that often leads to unfair bargaining that hinders the development of hydropower projects in Uttarakhand. Codes: Current; R&R policy; not effective; land for land compensation; ambiguous; Uttarakhand; hilly; plain; areas; different; circle rates; transparent; fair; compensation policy; market value; land; not much negotiation; should be allowed; unfair bargaining; hinders; development; hydropower projects. Number of Codes: 21 New Codes: 0
Respondent 5 (Developer 2 - VPHEP): Existing R&R policy is not effective enough. Instead of circle rates, R&R policy must have a transparent and fair compensation policy based on market value of land. Additionally, unlike current scenario, after comprehensive review the components of compensation must be fixed without much scope for bargaining. Codes: Existing; R&R policy; not effective; instead of; circle rates; transparent; fair; compensation policy; market value; land; after comprehensive review; components of compensation; fixed Number of Codes: 13 New Codes: 4

Respondent 6 (NGO – VPHEP): Current R&R policy is not effective enough. Land for land compensation, as mentioned in current R&R policy, leads to inadequate compensation in Uttarakhand, as the values of land in hilly and plain areas are quite different. In addition, instead of circle rates, R&R policy must have a transparent and fair compensation policy based on market value of land. Additionally, apart from assessing loss to home and land, PAP's loss of livelihood, common property, community life, culture, etc. must be considered for fixing the compensation. Also, if a woman is the head of a joint family of PAP, her property rights must be protected.

Codes: Current, R&R policy; not effective; land for land compensation; inadequate compensation; Uttarakhand; land; hilly; plain; areas; different; circle rates; transparent; fair; compensation policy; market value; assessing; loss to home and land; PAP's; loss; livelihood; common property; community life; culture; must be considered; for fixing; compensation; woman; head of joint family; PAP; property rights; protected.

Number of Codes: 32 New Codes: 0

Respondent 7 (PAP 1 – VPHEP): Current R&R policy is not effective enough. Instead of circle rates, R&R policy must have a transparent and fair compensation policy based on market value of land. Additionally, apart from assessing loss to home and land, PAP's loss of livelihood, common property, community life, culture, etc. must be considered for fixing the compensation. Also, if a woman is the head of a joint family of PAP, her property rights must be protected.

Codes: Current, R&R policy; not effective; circle rates; transparent; fair; compensation policy; market value; assessing; loss to home and land; PAP's; loss; livelihood; common property; community life; culture; must be considered; for fixing; compensation; woman; head of joint family; PAP; property rights; protected.

Number of Codes: 24 New Codes: 0
Respondent 8 (PAP 2 – VPHEP): Existing R&R policy is not effective enough. Land for land compensation, as mentioned in current R&R policy, leads to inadequate compensation in Uttarakhand, as the values of land in hilly and plain areas are quite different. Also, instead of circle rates, R&R policy must have a transparent and fair compensation policy based on market value of land. Additionally, apart from assessing loss to home and land, PAP's loss of livelihood, common property, community life, culture, etc. must be considered for fixing the compensation. Also, if a woman is the head of a joint family of PAP, her property rights must be protected. Codes: Existing, R&R policy; not effective; land for land compensation; inadequate compensation; Uttarakhand; land; hilly; plain; areas; different; circle rates; transparent; fair; compensation policy; market value; assessing; loss to home and land; PAP's; loss; livelihood; common property; community life; culture; must be considered; for fixing; compensation; woman; head of joint family; PAP; property rights; protected. Number of Codes: 32 New Codes: 0
Q8: Share your experiences regarding the implementation of R&R initiatives for PAP of Hydropower Projects in Uttarakhand.
Respondent 1 (Local administration 1 – VPHEP): Based on my experience with VPHEP, I can say that there is lack of comprehensive planning, lack of political will along with uncertain policy environment that makes it very difficult to implement

R&R initiatives. Involvement of multiple agencies, lack of communication and coordination among agencies and bureaucratic procedures often lead to inadequate and delayed compensation to the PAP resulting in social conflicts and protests. Codes: VPHEP; lack of comprehensive planning; lack of political will; uncertain policy environment; difficult; implement; R&R initiatives; involvement of multiple agencies; lack of communication and coordination; agencies; bureaucratic procedures; inadequate and delayed compensation; PAP; social conflicts; protests Number of Codes: 14 New Codes: 14
Respondent 2 (Local administration 2 – VPHEP): My experience with hydropower projects in Uttarakhand indicate that there is lack of comprehensive planning, lack of political will along with uncertain policy environment that makes it very difficult to implement R&R initiatives. Lack of communication and coordination among agencies and bureaucratic and administrative mismanagement often lead to inadequate and delayed compensation to the PAP resulting in social conflicts and protests. Codes: Hydropower projects; Uttarakhand; lack of comprehensive planning; lack of political will; uncertain policy environment; difficult; R&R initiatives; lack of communication and coordination; agencies; bureaucratic and administrative mismanagement; inadequate and delayed compensation; PAP; social conflicts; protests Number of Codes: 14 New Codes: 3
Respondent 3 (Gram Pradhan – Haat): R&R policy implementation is quite sloppy. Due to uncertain policy environment and lack of political will, there is lot of ambiguity regarding compensation that leads to social conflicts, protests and litigation. Involvement of multiple agencies, lack of communication and coordination among agencies and bureaucratic procedures often lead to

inadequate and delayed compensation to the PAP. Also, during implementation, compensation is not allocated in a transparent and fair manner. Codes: R&R policy; implementation; sloppy; uncertain policy environment; lack of political will; ambiguity; compensation; social conflicts; protests; litigation; involvement of multiple agencies; lack of communication and coordination; agencies; bureaucratic procedures; inadequate and delayed compensation; PAP; not allocated; transparent and fair; manner Number of Codes: 19 New Codes: 9
Respondent 4 (Developer 1 - VPHEP): My experience with hydropower projects in Uttarakhand indicate that there is lack of political will and negligible local administration support for the projects. Uncertain policy environment and unjust demands by PAP make R&R difficult and costly. Codes: Hydropower projects; Uttarakhand; lack of political will; negligible local administration support; uncertain policy environment; unjust demands; R&R; difficult; costly Number of Codes: 9 New Codes: 4
Respondent 5 (Developer 2 - VPHEP): As per my experience with hydropower projects in Uttarakhand, there is lack of political will along with uncertain policy environment that makes it very difficult to implement R&R initiatives. Lack of communication and coordination among agencies and bureaucratic and administrative mismanagement often lead to inadequate and delayed compensation to the PAP resulting in social conflicts and protests. Often, PAP complain about running from one government office to another to claim compensation that makes the situation worse for the developer.

Codes: Hydropower projects; Uttarakhand; lack of political will; uncertain policy environment; difficult; R&R initiatives; lack of communication and coordination; agencies; bureaucratic and administrative mismanagement; inadequate and delayed compensation; PAP; social conflicts; protests; complain; running from one government office to another; claim; compensation; situation; worse; developer Number of Codes: 16 New Codes: 7
Respondent 6 (NGO – VPHEP): R&R policy implementation has been quite messy. Due to uncertain policy environment and lack of political will, there is lot of ambiguity regarding compensation that leads to social conflicts, protests and litigation. Involvement of multiple agencies, lack of communication and coordination among agencies and bureaucratic procedures often lead to inadequate and delayed compensation to the PAP. Lack of local administration support also aggravate the situation and make R&R tough for all stakeholders. Codes: R&R policy; implementation; messy; uncertain policy environment; lack of political will; ambiguity; compensation; social conflicts; protests; litigation; involvement of multiple agencies; lack of communication and coordination; agencies; bureaucratic procedures; inadequate and delayed compensation; PAP; lack of local administration support; aggravate; situation; R&R; tough; stakeholders Number of Codes: 22 New Codes: 6

Respondent 7 (PAP 1 – VPHEP): Due to uncertain policy environment and lack of political will, there is lot of ambiguity regarding compensation that leads to social conflicts, protests and litigation. In addition, during implementation, compensation is not allocated in a transparent and fair manner. Involvement of multiple agencies, lack of communication and coordination among agencies and bureaucratic procedures often lead to inadequate and delayed compensation to the PAP. Codes: Uncertain policy environment; lack of political will; ambiguity; compensation; social conflicts; protests; litigation; implementation; not allocated; transparent and fair; manner; involvement of multiple agencies; lack of communication and coordination; agencies; bureaucratic procedures; inadequate and delayed compensation; PAP Number of Codes: 17 New Codes: 0
Respondent 8 (PAP 2 – VPHEP): There is lot of ambiguity regarding compensation that leads to social conflicts, protests and litigation. Involvement of multiple agencies, lack of communication and coordination among agencies and bureaucratic procedures often lead to inadequate and delayed compensation to the PAP. We have been made to run from one government office to another to claim compensation that makes the situation worse. Codes: Ambiguity; compensation; social conflicts; protests; litigation; involvement of multiple agencies; lack of communication and coordination; agencies; bureaucratic procedures; inadequate and delayed compensation; PAP; run from one government office to another; claim; compensation; situation; worse Number of Codes: 16 New Codes: 0

Q9: Is there any gap between current R&R policy and its implementation for Hydropower Projects in Uttarakhand? If yes, share your experiences.
Respondent 1 (Local administration 1 – VPHEP): There are some differences. For example, as per R&R policy, compensation for home and land must be done in a transparent and fair manner. However, it has found that, some of the PAP get land at preferred locations with better access to facilities and services and thus increasing their market value whereas others get it at not so preferred locations. Additionally, instead of market price of land, circle rates (that are generally lower) are considered for compensation for land acquisition. Regarding jobs also, only few PAP family members get good jobs (government, public sector or reputed private company jobs) whereas others get jobs with small local vendors that are not desirable. Codes: Differences; R&R policy; compensation; home; land; transparent and fair; manner; PAP; preferred locations; market price; circle rates; land acquisition; jobs; family members; good jobs; government, public sector or reputed private company jobs; small local vendors; not desirable Number of Codes: 18 New Codes: 18
Respondent 2 (Local administration 2 – VPHEP): Yes, there are significant differences. For example, as per R&R policy, compensation for home and land must be done in a transparent and fair manner. However, it has found that, some of the PAP get land at preferred locations with better access to facilities and services and thus increasing their market value whereas others get it at not so preferred locations. Additionally, instead of market price of land, circle rates (that are generally lower) are considered for compensation for land acquisition. Regarding jobs also, only few PAP family members get good jobs (government, public

sector or reputed private company jobs) whereas others get jobs with small local vendors that are not desirable. R&R policy also guides the implementing agencies to provide similar or better facilities (roads, electricity, water supply, schools, temples, etc.) in the new location to the PAP. However, the new locations are generally found to be lacking in infrastructure facilities. Codes: Differences; R&R policy; compensation; home; land; transparent and fair; manner; PAP; preferred locations; market price; circle rates; land acquisition; jobs; family members; good jobs; government, public sector or reputed private company jobs; small local vendors; not desirable; implementing agencies; provide; similar or better facilities; roads, electricity, water supply, schools, temples; new location; lacking in infrastructure facilities Number of Codes: 24 New Codes: 6
Respondent 3 (Gram Pradhan – Haat): Many differences are there. Instead of best price for land that is close to market price, PAP receive land compensation as per circle rate, which is significantly lower. Regarding jobs also, only few PAP family members get good jobs (government, public sector or reputed private company jobs) whereas others get jobs with small local vendors that are not desirable. R&R policy also guides the implementing agencies to provide similar or better facilities (roads, electricity, water supply, schools, temples, etc.) in the new location to the PAP. However, the new locations are generally found to be lacking in infrastructure facilities. Regarding impartation of employable skills to PAP and their family members, the implementing agencies are hardly doing anything meaningful. Codes: Differences; best price; land; market price; PAP; land compensation; circle rate; jobs; family members; good jobs; government, public sector or reputed private company jobs; small local vendors; not desirable; R&R policy; implementing agencies; provide; similar or better facilities; roads, electricity, water supply, schools, temples; new location; lacking in infrastructure facilities; impartation; employable skills; hardly doing; anything meaningful.

Number of Codes: 24 New Codes: 5
Respondent 4 (Developer 1 - VPHEP): Some differences are there. For example, as per R&R policy, compensation for home and land must be done in a transparent and fair manner. However, it has found that, some of the PAP get land at preferred locations with better access to facilities and services and thus increasing their market value whereas others get it at not so preferred locations. Additionally, instead of market price of land, circle rates (that are generally lower) are considered for compensation for land acquisition. Regarding jobs also, only few PAP family members get good jobs (government, public sector or reputed private company jobs) whereas others get jobs with small local vendors that are not desirable. As a developer, we wish to follow transparent and fair process for job distribution to PAP but political and bureaucratic interferences often make it impossible. Codes: Differences; R&R policy; compensation; home; land; transparent and fair; manner; PAP; preferred locations; market price; circle rates; land acquisition; jobs; family members; good jobs; government, public sector or reputed private company jobs; small local vendors; not desirable; developer; follow; process; job distribution; political and bureaucratic interferences; impossible Number of Codes: 24 New Codes: 6
Respondent 5 (Developer 2 - VPHEP): Yes, there are significant differences. For example, as per R&R policy, compensation for home and land must be done in a transparent and fair manner. However, it has found that, some of the PAP get land at preferred locations with better access to facilities and services and thus increasing their market value whereas others get it at not so preferred locations. Additionally, instead of market price of land, circle rates (that are generally lower) are considered for compensation for land acquisition. Regarding jobs also, only few PAP family members get good jobs (government, public sector or reputed private company jobs) whereas others get jobs with small local vendors that are not desirable. R&R policy also guides the implementing

agencies to provide similar or better facilities (roads, electricity, water supply, schools, temples, etc.) in the new location to the PAP. However, the new locations are generally found to be lacking in infrastructure facilities. Though implementing agencies strive to ensure access to common property such as playground and temple to PAP at new locations after displacement, but due to shortage of space it is often missed at new locations. Codes: Differences; R&R policy; compensation; home; land; transparent and fair; manner; PAP; preferred locations; market price; circle rates; land acquisition; jobs; family members; good jobs; government, public sector or reputed private company jobs; small local vendors; not desirable; implementing agencies; provide; similar or better facilities; roads, electricity, water supply, schools, temples; new location; lacking in infrastructure facilities; access to common property; playground and temple; displacement; shortage of space; missed; new locations Number of Codes: 30 New Codes: 6
Respondent 6 (NGO – VPHEP): Many differences are there. Instead of best price for land that is close to market price, PAP receive land compensation as per circle rate, which is significantly lower. Regarding jobs also, only few PAP family members get good jobs (government, public sector or reputed private company jobs) whereas others get jobs with small local vendors that are not desirable. R&R policy also guides the implementing agencies to provide similar or better facilities (roads, electricity, water supply, schools, temples, etc.) in the new location to the PAP. However, the new locations are generally found to be lacking in infrastructure facilities. Regarding impartation of employable skills to PAP and their family members, the implementing agencies are hardly doing anything meaningful. Issue of women rights has also emerged during implementation of R&R initiatives as it has been found that women (especially widow or unmarried women in joint families) don't get property rights after displacement as property rights are transferred to eligible male members and such women are often observed to become dependent on others.

Codes: Differences; best price; land; market price; PAP; land compensation; circle rate; jobs; family members; good jobs; government, public sector or reputed private company jobs; small local vendors; not desirable; R&R policy; implementing agencies; provide; similar or better facilities; roads, electricity, water supply, schools, temples; new location; lacking in infrastructure facilities; impartation; employable skills; hardly doing; anything meaningful; women rights; implementation; R&R initiatives; widow or unmarried women in joint families; property rights; displacement; transferred; male members; dependent Number of Codes: 33 New Codes: 8
Respondent 7 (PAP 1 – VPHEP): Several differences are there. Instead of best price for land that is close to market price, PAP receive land compensation as per circle rate, which is significantly lower. Regarding jobs also, only few PAP family members get good jobs (government, public sector or reputed private company jobs) whereas others get jobs with small local vendors that are not desirable. R&R policy also guides the implementing agencies to provide similar or better facilities (roads, electricity, water supply, schools, temples, etc.) in the new location to the PAP. However, the new locations are generally found to be lacking in infrastructure facilities. Regarding impartation of employable skills to PAP and their family members, the implementing agencies are hardly doing anything meaningful. We don't get decent jobs. Codes: Differences; best price; land; market price; PAP; land compensation; circle rate; jobs; family members; good jobs; government, public sector or reputed private company jobs; small local vendors; not desirable; R&R policy; implementing agencies; provide; similar or better facilities; roads, electricity, water supply, schools, temples; new location; lacking in infrastructure facilities; impartation; employable skills; hardly doing; anything meaningful. Number of Codes: 24 New Codes: 0

Respondent 8 (PAP 2 – VPHEP): Respondent 6 (NGO – VPHEP): Many differences are there. Instead of best price for land that is close to market price, PAP receive land compensation as per circle rate, which is significantly lower. Regarding jobs also, only few PAP family members get good jobs (government, public sector or reputed private company jobs) whereas others get jobs with small local vendors that are not desirable. R&R policy also guides the implementing agencies to provide similar or better facilities (roads, electricity, water supply, schools, temples, etc.) in the new location to the PAP. However, the new locations are generally found to be lacking in infrastructure facilities. Regarding impartation of employable skills to PAP and their family members, the implementing agencies are hardly doing anything meaningful. Issue of women rights has also emerged during implementation of R&R initiatives as it has been found that women (especially widow or unmarried women in joint families) don't get property rights after displacement as property rights are transferred to eligible male members and such women are often observed to become dependent on others.

Codes: Differences; best price; land; market price; PAP; land compensation; circle rate; jobs; family members; good jobs; government, public sector or reputed private company jobs; small local vendors; not desirable; R&R policy; implementing agencies; provide; similar or better facilities; roads, electricity, water supply, schools, temples; new location; lacking in infrastructure facilities; impartation; employable skills; hardly doing; anything meaningful; women rights; implementation; R&R initiatives; widow or unmarried women in joint families; property rights; displacement; transferred; male members; dependent

Number of Codes: 33 New Codes: 0

Q10: Based on your experiences, suggest improvements (if any) in R&R policy associated with Hydropower Projects in Uttarakhand to make it more effective.

Respondent 1 (Local administration 1 – VPHEP): Need to have a clear and easy to understand R&R policy that can be implemented in a transparent and fair process. This policy must not have any scope for modification as that opens up the gate for bargaining, protests and litigations. Also, as land for land compensation has been found to be very difficult and tedious to implement in a transparent and fair way, R&R policy should have only monetary compensation for all kind of losses. The monetary compensation must be market linked to make the compensation acceptable to all stakeholders. Codes: Clear and easy to understand; R&R policy; transparent and fair; process; must not have; scope for modification; opens up the gate; bargaining; protests; litigation; land for land compensation; difficult and tedious to implement; way; monetary compensation; for all kind of losses; market linked; compensation; acceptable to all stakeholders Number of Codes: 18 New Codes: 18
Respondent 2 (Local administration 2 – VPHEP): R&R policy should be such that it can be implemented in a transparent and fair process. As land for land compensation has been found to be very difficult and tedious to implement in a transparent and fair way, R&R policy should have only monetary compensation for all kind of losses. These losses must account for loss of land, home, livelihood, food security, health, access to common property such as grazing ground and fodder, water source, religious places, playground, van panchayat land, cremation ground, community life, culture, etc. The monetary compensation must be market linked to make the compensation acceptable to all stakeholders. Codes: R&R policy; transparent and fair; process; land for land compensation; difficult and tedious to implement; way; monetary compensation; for all kind of losses; losses; must account for; loss; land; home; livelihood; food security; health; access to

common property; grazing ground and fodder; water source; religious places; playground; van panchayat land; cremation ground; community life; culture; market linked; compensation; acceptable to all stakeholders Number of Codes: 28 New Codes: 17
Respondent 3 (Gram Pradhan – Haat): Only consolidated monetary compensation for all losses of PAP including loss of land, home, livelihood, food security, health, access to common property such as grazing ground and fodder, water source, religious places, playground, van panchayat land, cremation ground, community life, culture, etc. is the best option. For estimating monetary compensation, land and property prices must be market linked instead of circle rates. Additionally, there is a need to draft a comprehensive R&R policy framework, after consulting all stakeholders, that is clear and easy to understand and implement and not open to further negotiations. Codes: Consolidated; monetary compensation; for all losses; PAP; loss; land; home; livelihood; food security; health; access to common property; grazing ground and fodder; water source; religious places; playground; van panchayat land; cremation ground; community life; culture; land and property prices; market linked; circle rates; comprehensive R&R policy framework; after consulting all stakeholders; clear and easy to understand; implement; not open to further negotiations Number of Codes: 27 New Codes: 9
Respondent 4 (Developer 1 - VPHEP): Need for consolidated monetary compensation for all losses of PAP. For estimating monetary compensation, land and property prices must be market linked instead of circle rates. Additionally, there is a need to draft a comprehensive R&R policy framework, after consulting all stakeholders, that is clear and easy to understand and implement and not open to further negotiations. R&R policy must have a single window system with time bound services.

Codes: Consolidated; monetary compensation; for all losses; PAP; land and property prices; market linked; circle rates; comprehensive R&R policy framework; after consulting all stakeholders; clear and easy to understand; implement; not open to further negotiations; R&R policy; single window system; time bound services Number of Codes: 15 New Codes: 2
Respondent 5 (Developer 2 - VPHEP): One time consolidated monetary compensation for all losses of PAP. For estimating monetary compensation, land and property prices must be market linked instead of circle rates. Additionally, there is a need to draft a comprehensive R&R policy framework, after consulting all stakeholders, that is clear and easy to understand and implement and not open to further negotiations. Codes: One time; consolidated; monetary compensation; for all losses; PAP; land and property prices; market linked; circle rates; comprehensive R&R policy framework; after consulting all stakeholders; clear and easy to understand; implement; not open to further negotiations Number of Codes: 13 New Codes: 1
Respondent 6 (NGO – VPHEP): Monetary compensation for all losses of PAP including loss of land, home, livelihood, food security, health, access to common property such as grazing ground and fodder, water source, religious places, playground, van panchayat land, cremation ground, community life, culture, etc. is the best option. For estimating monetary compensation, land and property prices must be market linked instead of circle rates. R&R policy must have a single window system with time bound services.

Codes: Monetary compensation; for all losses; PAP; loss; land; home; livelihood; food security; health; access to common property; grazing ground and fodder; water source; religious places; playground; van panchayat land; cremation ground; community life; culture; land and property prices; market linked; circle rates; R&R policy; single window system; time bound services Number of Codes: 24 New Codes: 0
Respondent 7 (PAP 1 – VPHEP): Compensation for all losses of PAP including loss of land, home, livelihood, food security, health, access to common property such as grazing ground and fodder, water source, religious places, playground, van panchayat land, cremation ground, community life, culture, etc. must be a part of R&R policy. Compensation must be offered through single window system with time bound services. Codes: Compensation; for all losses; PAP; loss; land; home; livelihood; food security; health; access to common property; grazing ground and fodder; water source; religious places; playground; van panchayat land; cremation ground; community life; culture; R&R policy; single window system; time bound services Number of Codes: 21 New Codes: 0
Respondent 8 (PAP 2 – VPHEP): Monetary compensation for all losses of PAP including loss of land, home, livelihood, food security, health, access to common property such as grazing ground and fodder, water source, religious places, playground, van panchayat land, cremation ground, community life, culture, etc. is the best option. For estimating monetary compensation, land and property prices must be market linked instead of circle rates. R&R policy must have a single window system with time bound services.

Codes: Monetary compensation; for all losses; PAP; loss; land; home; livelihood; food security; health; access to common property; grazing ground and fodder; water source; religious places; playground; van panchayat land; cremation ground; community life; culture; land and property prices; market linked; circle rates; R&R policy; single window system; time bound services Number of Codes: 24 New Codes: 0
Q11: Suggest measures to address implementation issues and minimize gaps between R&R policy and implementation.
Respondent 1 (Local administration 1 – VPHEP): For improved implementation in a transparent and fair manner, it is necessary to have a clear and easy to implement R&R policy. Effective communication and good coordination between local administration agencies involved in R&R can address R&R issues. Employees involved in R&R should not be transferred mid-way during the R&R of project as the new employee requires time to understand each case and address the issues. Codes: Improved; implementation; transparent and fair; manner; necessary; clear and easy to implement; R&R policy; effective communication; good coordination; local administration agencies; R&R; R&R issues; employees; should not be transferred; mid-way; during R&R of project; new employee; requires time; understand each case; address the issues Number of Codes: 20 New Codes: 20
Respondent 2 (Local administration 2 – VPHEP): Need to develop a transparent and uniform R&R framework to estimate compensation to PAP. Consolidated monetary compensation for all losses to PAP must be the norm, as that will bring lot of

transparency and fairness to the implementation of R&R initiatives. Also, the R&R policy must remain consistent with no scope of further negotiations and modifications.

Codes: Need; develop; transparent and uniform; R&R framework; estimate; compensation; PAP; consolidated; monetary compensation; for all losses; norm; transparency and fairness; implementation; R&R initiatives; R&R policy; consistent; no scope; further negotiations and modifications

Number of Codes: 18 New Codes: 16

Respondent 3 (Gram Pradhan – Haat): For improved implementation in a transparent and fair manner, it is necessary to have a clear and easy to implement R&R policy. Effective communication and good coordination between local administration agencies involved in R&R can address R&R issues. Employees involved in R&R should not be transferred mid-way during the R&R of project as the new employee requires time to understand each case and address the issues. A single window system must be there for timely closure of R&R issues. Need to develop a transparent and uniform R&R framework to estimate compensation to PAP.

Codes: Improved; implementation; transparent and fair; manner; necessary; clear and easy to implement; R&R policy; effective communication; good coordination; local administration agencies; R&R; R&R issues; employees; should not be transferred; mid-way; during R&R of project; new employee; requires time; understand each case; address the issues; single window system; timely closure; R&R issues; need; develop; transparent and uniform; R&R framework; estimate; compensation; PAP

Number of Codes: 30 New Codes: 2

Respondent 4 (Developer 1 - VPHEP): To achieve implementation of R&R policy in a transparent and fair manner, it is necessary to have a clear and easy to implement R&R policy. Consistent R&R policy with clear compensation mechanisms can minimize bureaucratic and political interferences. Effective communication and good coordination between local administration agencies involved in R&R can improve R&R implementation. Employees involved in R&R should not be transferred mid-way during the R&R of project as the new employee requires time to understand each case and address the issues. Codes: Implementation; transparent and fair; manner; necessary; clear and easy to implement; R&R policy; consistent; clear; compensation mechanisms; minimize; bureaucratic and political interferences; effective communication; good coordination; local administration agencies; R&R; employees; should not be transferred; mid-way; during R&R of project; new employee; requires time; understand each case; address the issues. Number of Codes: 23 New Codes: 5
Respondent 5 (Developer 2 - VPHEP): Consistent R&R policy with clear compensation mechanisms can minimize bureaucratic and political interferences and make implementation more effective. Effective communication and good coordination between local administration agencies involved in R&R can improve R&R implementation. Employees involved in R&R should not be transferred mid-way during the R&R of project as the new employee requires time to understand each case and address the issues. Codes: Consistent; R&R policy; clear; compensation mechanisms; minimize; bureaucratic and political interferences; implementation; more effective; effective communication; good coordination; local administration agencies; R&R; employees; should not be transferred; mid-way; during R&R of project; new employee; requires time; understand each case; address the issues.

Number of Codes: 20 New Codes: 0
Respondent 6 (NGO – VPHEP): Better implementation of R&R in a transparent and fair manner requires a clear and easy to implement R&R policy. Effective communication and good coordination between local administration agencies involved in R&R can address R&R issues. Employees involved in R&R should not be transferred mid-way during the R&R of project as the new employee requires time to understand each case and address the issues. A single window system must be there for timely closure of R&R issues. Codes: Better; implementation; R&R; transparent and fair; manner; requires; clear and easy to implement; R&R policy; effective communication; good coordination; local administration agencies; R&R issues; employees; should not be transferred; mid-way; during R&R of project; new employee; requires time; understand each case; address the issues; single window system; timely closure; R&R issues. Number of Codes: 23 New Codes: 0
Respondent 7 (PAP 1 – VPHEP): Effective communication and good coordination between local administration agencies involved in R&R can address R&R issues. Employees involved in R&R should not be transferred mid-way during the R&R of project as the new employee requires time to understand each case and address the issues. A single window system must be there for timely closure of R&R issues. Need to develop a transparent and uniform R&R framework to estimate compensation to PAP. Codes: Effective communication; good coordination; local administration agencies; R&R; R&R issues; employees; should not be transferred; mid-way; during R&R of project; new employee; requires time; understand each case; address the issues; single

window system; timely closure; R&R issues; need; develop; transparent and uniform; R&R framework; estimate; compensation; PAP Number of Codes: 23 New Codes: 0
Respondent 8 (PAP 2 – VPHEP): Effective coordination between local administration agencies involved in R&R can address R&R issues. Employees involved in R&R should not be transferred mid-way during the R&R of project as the new employee requires time to understand each case and address the issues. A single window system must be there for timely closure of R&R issues. Need to develop a transparent and uniform R&R framework to estimate compensation to PAP. Codes: Effective coordination; local administration agencies; R&R; R&R issues; employees; should not be transferred; mid-way; during R&R of project; new employee; requires time; understand each case; address the issues; single window system; timely closure; R&R issues; need; develop; transparent and uniform; R&R framework; estimate; compensation; PAP Number of Codes: 22 New Codes: 0

Appendix E – Conversion of Transcripts Codes into Themes for VPHEP

Codes generated from transcripts	Initial category of codes	Final category of codes	Theme	Core Concept
Hydropower projects; beneficial; society; social conflicts; socio-economic development; R&R issues; protests; litigation; local area; jobs; income generation activities; social unrest; clean; sustainable; cheap; power; project delay; cost overrun; displacement; local population; developers; inadequate compensation; PAP; suffer.	Opinion about hydropower projects in Uttarakhand	Pros and cons of hydropower projects in Uttarakhand	Opportunities and challenges associated with hydropower projects in Uttarakhand	Redressal of R&R issues for the development of hydropower projects in Uttarakhand
Stakeholder; VPHEP; local administration; displacement; R&R issues; social conflicts; protests; litigation; Gram Pradhan; blasting; submergence; project delays; cost overruns; NGO; PAP; lost; land; home; livelihood; community life; displacement; inadequate compensation.	Experiences associated with hydropower projects in Uttarakhand	Pros and cons of hydropower projects in Uttarakhand	Opportunities and challenges associated with hydropower projects in Uttarakhand	Redressal of R&R issues for the development of hydropower projects in Uttarakhand

Socio-economic development; creation; job; income generation activities; R&R issues; social conflicts; protests; displacement; inadequate compensation; cheap; clean; power; blasting, submergence, loss, livelihood, home, land, community life, inadequate compensation, litigation	Advantages and disadvantages of hydropower projects in Uttarakhand	Pros and cons of hydropower projects in Uttarakhand	Opportunities and challenges associated with hydropower projects in Uttarakhand	Redressal of R&R issues for the development of hydropower projects in Uttarakhand
R&R issues; timely completion; hydropower projects; VPHEP; lack of comprehensive planning; lack of political will; difficult; local administration; conflicts; frequent changes in policy; Current; R&R policy; inadequate; inadequate compensation; implementation; R&R initiatives; bureaucratic and administrative mismanagement; poor coordination and communication; PAP; suffer; run from one office to another; spread over long distances; hills of Uttarakhand; hinder; development; hydropower projects; Uttarakhand; loss; land; home; blasting; submergence; compensated; displacement; livelihood; water source; religious places, van panchayat land; grazing ground and fodder; cremation ground; community life; culture; health	R&R issues associated with hydropower projects in Uttarakhand	R&R issues and its impact on hydropower projects in Uttarakhand	Opportunities and challenges associated with hydropower projects in Uttarakhand	Redressal of R&R issues for the development of hydropower projects in Uttarakhand

and hygiene; poor support; delayed; social conflicts; protests; comprehensive; effective implementation.				
R&R issues; hydropower projects; Uttarakhand; social conflicts; time delays; cost overruns, unviable; protests; work stoppage; litigation; displacement; inadequate compensation.	Impact of R&R issues on the viability of hydropower projects in Uttarakhand	R&R issues and its impact on hydropower projects in Uttarakhand	Opportunities and challenges associated with hydropower projects in Uttarakhand	Redressal of R&R issues for the development of hydropower projects in Uttarakhand
VPHEP; hydropower projects; loss; land; home; livelihood; food security; health; common property; grazing ground and fodder; water source; religious places; playground; community life; women security; PAP; complain; inadequate compensation; lack of facilities; resettlement locations; van panchayat land; cremation ground; culture; displacement; agricultural land; access; common property; agriculture; community; new location; uprooted; woman; head of joint family; loses her property rights; sons get R&R compensation; affecting; frequent changes in policy; bureaucratic and administrative mismanagement; run	Impact of hydropower projects on various aspects of PAP	Effect of hydropower projects on PAP	What is the impact of hydropower projects on life of PAP?	Redressal of R&R issues for the development of hydropower projects in Uttarakhand

from one office to another; compensation; inadequate; comparison.				
Uttarakhand; complex state; with respect to geography; stark difference; value of land; infrastructure facilities; economic opportunities; hilly; plain; areas; R&R; challenging; land for land compensation; R&R policy; ambiguous; circle rates; transparent; fair; compensation policy; market value; land; current; not effective; different; not much negotiation; should be allowed; unfair bargaining; hinders; development; hydropower projects; inadequate compensation; assessing; loss to home and land; PAP's; loss; livelihood; common property; community life; culture; must be considered; for fixing; compensation; woman; head of joint family; PAP; property rights; protected; existing; instead of; after comprehensive review; components of compensation; fixed.	Lacunas of current R&R policy	Current shortcomings of R&R policy and its implementation for hydropower projects in Uttarakhand	Issues in current R&R policy and its implementation that need to be addressed	Redressal of R&R issues for the development of hydropower projects in Uttarakhand

VPHEP; lack of comprehensive planning; lack of political will; uncertain policy environment; difficult; implement; R&R initiatives; involvement of multiple agencies; lack of communication and coordination; agencies; bureaucratic procedures; inadequate and delayed compensation; PAP; social conflicts; protests; hydropower projects; Uttarakhand; lack of comprehensive planning; bureaucratic and administrative mismanagement; R&R policy;	Experiences regarding the implementation of R&R initiatives for PAP of Hydropower Projects	Current shortcomings of R&R policy and its implementation for hydropower projects in Uttarakhand	Issues in current R&R policy and its implementation that need to be addressed	Redressal of R&R issues for the development of hydropower projects in Uttarakhand
implementation; sloppy; ambiguity; compensation; litigation; not allocated; transparent and fair; manner; negligible local administration support; unjust demands; R&R; costly; complain; running from one government office to another; claim; compensation; situation; worse; developer; messy; lack of local administration support; aggravate; situation; tough; stakeholders	Experiences regarding the implementation of R&R initiatives for PAP of Hydropower Projects in Uttarakhand	Current shortcomings of R&R policy and its implementation for hydropower projects in Uttarakhand	Issues in current R&R policy and its implementation that need to be addressed	Redressal of R&R issues for the development of hydropower projects in Uttarakhand

Differences; R&R policy; compensation; home; land; transparent and fair; manner; PAP; preferred locations; market price; circle rates; land acquisition; jobs; family members; good jobs; government, public sector or reputed private company jobs; small local vendors; not desirable ; implementing agencies; provide; similar or better facilities; roads, electricity, water supply, schools, temples; new location; lacking in infrastructure facilities; best price; land compensation; impartation; employable skills; hardly doing; anything meaningful; developer; follow; process; job distribution; political and bureaucratic interferences; impossible; access to common property; playground and temple; displacement; shortage of space; missed; new locations; women rights; implementation; R&R initiatives; widow or unmarried women in joint families; property rights; displacement; transferred; male members; dependent	Gap between current R&R policy and its implementation for Hydropower Projects in Uttarakhand	Current shortcomings of R&R policy and its implementation for hydropower projects in Uttarakhand	Issues in current R&R policy and its implementation that need to be addressed	
Clear and easy to understand; R&R policy; transparent and fair; process; must not have; scope for modification; opens up the gate; bargaining;	Suggestions regarding improvements (if	Suggestions for improving R&R	How to improve R&R policy and its	Redressal of R&R issues for the development

protests; litigation; land for land compensation; difficult and tedious to implement; way; monetary compensation; for all kind of losses; market linked; compensation; acceptable to all stakeholders; must account for; loss; land; home; livelihood; food security; health; access to common property; grazing ground and fodder; water source; religious places; playground; van panchayat land; cremation ground; community life; culture; consolidated; for all losses; PAP; land and property prices; market linked; circle rates; comprehensive R&R policy framework; after consulting all stakeholders; implement; not open to further negotiations; single window system; time bound services; one time.	any) in R&R policy associated with Hydropower Projects in Uttarakhand to make it more effective.	policy and its implementation	implementation for the development of hydropower projects in Uttarakhand	of hydropower projects in Uttarakhand
Improved; implementation; transparent and fair; manner; necessary; clear and easy to implement; R&R policy; effective communication; good coordination; local administration agencies; R&R; R&R issues; employees; should not be transferred; mid-way; during R&R of project; new employee; requires time; understand each case; address the	Suggested measures to address implementation issues and minimize gaps between R&R	Suggestions for improving R&R policy and its implementation	How to improve R&R policy and its implementation for the development of hydropower	Redressal of R&R issues for the development of hydropower projects in Uttarakhand

issues; need; develop; transparent and uniform; R&R framework; estimate; compensation; PAP; consolidated; monetary compensation; for all losses; norm; transparency and fairness; R&R initiatives; consistent; no scope; further negotiations and modifications; single window system; timely closure; consistent; clear; compensation mechanisms; minimize; bureaucratic and political interferences.	policy and implementation		projects in Uttarakhand	

Appendix F – Interview Transcripts for THEP

Q1: What is your opinion about Hydropower Projects?
Respondent 1 (Local Administration 1 – THEP): Hydropower projects are beneficial to the society but often lack vision and long term planning in terms of R&R leading to social conflicts. Codes: Hydropower projects; beneficial; society; lack; vision; Long term; Planning; R&R; social conflicts Number of Codes: 9 New Codes: 9
Respondent 2 (Local administration 2 – THEP): Hydropower projects promotes both regional as well as national economic growth but also evolve R&R and Environmental issues that often lead to social conflicts, protests and litigation. They generate employment. Codes: Hydropower projects; regional; national; economic; growth; R&R; environmental; social conflicts; protests; litigation; generate; employment Number of Codes: 12 New Codes: 5
Respondent 3 (Expert – THEP): Hydropower projects are beneficial to the local area as they create jobs and income generation activities. They have the potential to control regional migration. Hydro projects also strengthen tourism

industry. Helps develop infrastructure in remote areas. However, due to R&R issues, these often lead to social unrest and protests. Codes: Hydropower projects; beneficial; local area; jobs; income generation activities; potential; control; regional; national; strengthen; tourism; industry; develop; infrastructure; remote; R&R issues; social unrest; protests Number of codes: 18 New codes: 12
Respondent 4 (Developer 1 - THEP): Hydropower projects are beneficial to the society as they generate clean, sustainable and low-cost power. Once installed there operational cost are lower than alternatives. Codes: Hydropower projects; beneficial; society; clean; sustainable; low-cost; power; operational cost; lower; alternatives. Number of Codes: 10 New Codes: 7
Respondent 5 (Developer 2 - THEP): Hydropower projects are beneficial to the society as they generate clean, sustainable and cheap power and also lead to socio-economic development of local area. However, due to R&R issues, project delay and cost overrun is quite common. Codes: Hydropower projects; beneficial; society; clean; sustainable; cheap; socio-economic development; local area; R&R issues; project delay; cost overrun Number of Codes: 11 New Codes: 2

Respondent 6 (PAP 1 – THEP): Hydropower projects are beneficial to region as they generate employment but they often lead to displacement of local population. The developers often offer inadequate compensation making the project-affected people suffer. Codes: Hydropower projects; beneficial; generate; employment; displacement; local population; developers; inadequate compensation; project affected people; suffer. Number of Codes: 10 New Codes: 6
Respondent 7 (PAP 2 – THEP): Hydropower projects lead to displacement and the project-affected people often suffer due to inadequate compensation. Codes: Hydropower projects; displacement; project affected people; suffer; inadequate compensation Number of Codes: 5 New Codes: 0
Respondent 8 (PAP 2 – VPHEP): Hydropower projects lead to displacement of local population and they often get inadequate compensation. Codes: Hydropower projects; displacement; local population; inadequate compensation Number of Codes: 4 New Codes: 0

Q2: Have you ever been involved in and/or affected by Hydropower Projects in Uttarakhand? If yes, kindly share your overall experience.
Respondent 1 (Local administration 1 – THEP): Involved with THEP as a part of local administration. R&R issues created lot of social conflicts and protests. Codes: THEP; local administration; R&R issues; social conflicts; protests Number of Codes: 5 New Codes: 5
Respondent 2 (Local administration 2 – THEP): Stakeholder in THEP as a part of local administration. Hydro projects cause rifts in society as a result of ineffective communication. Displacement and subsequent R&R issues lead to social conflicts, protests and litigation. Codes: stakeholder; THEP; local administration; Hydro projects; rifts; society; ineffective communication; displacement; R&R issues; social conflicts; protests; litigation Number of Codes: 12 New Codes: 7
Respondent 3 (Expert – THEP): As an educationist from the region I was a stakeholder in THEP. Submergence created lot of R&R issues that resulted in social conflicts, protests and litigation.

Codes: Educationist; stakeholder; THEP; submergence; R&R issues; social conflicts; protests; litigation Number of codes: 8 New codes: 2
Respondent 4 (Developer 1 - THEP): From developer side, I was engaged in THEP. Resettlement created lot of R&R issues resulting in social conflicts, protests and litigation causing project delays and cost overruns. Codes: Developer; THEP; Resettlement; R&R issues; social conflicts; protests; litigation; project delays; cost overruns Number of Codes: 8 New Codes: 1
Respondent 5 (Developer 2 - THEP): As a developer, I worked in THEP in Department dealing with R&R. Resettlement created lot of R&R issues resulting in social conflicts, protests and litigation causing project delays and cost overruns. Codes: Developer; THEP; Resettlement; R&R issues; social conflicts; protests; litigation; project delays; cost overruns Number of Codes: 9 New Codes: 0
Respondent 6 (PAP 1 – THEP): As PAP, I have been relocated in New Tehri Town. Displacement caused disruption in socio bonding amongst communities and could not use common resources. Displacement and inadequate compensation resulted in social conflicts, protests and litigation.

Codes: PAP; socio; bonding; displacement; community; common resources; inadequate compensation; social conflicts; protests; litigation Number of Codes: 9 New Codes: 4
Respondent 7 (PAP 2 – THEP): I was a PAP in THEP. Submergence lead to displacement, lost my land, home, community, common resources, and got inadequate compensation. Codes: PAP; THEP; submergence; displacement; lost; land; home; common resources, livelihood; community; inadequate compensation Number of Codes: 11 New Codes: 0
Respondent 8 (PAP 3 – THEP): As a PAP in THEP, I lost land, home, community life due to relocation and got inadequate compensation. Codes: PAP; THEP; lost; land; home; community; relocation; inadequate compensation Number of Codes: 8 New Codes: 0
Q3: What are the advantages and disadvantages of Hydropower Projects?

Respondent 1 (Local administration 1 – THEP): Advantages: Socio-economic development with creation of jobs and income generation activities. Disadvantages: R&R issues Codes: Socio-economic development; creation; job; income generation activities; R&R issues Number of Codes: 5 New Codes: 5
Respondent 2 (Local administration 2 – THEP): Advantages: Socio-economic development with creation of jobs and income generation activities. Disadvantages: R&R issues, social conflicts, protests and litigations Codes: Socio-economic development; creation; jobs; income generation activities; R&R issues; social conflicts; protests; litigations Number of Codes: 8 New Codes: 3
Respondent 3 (Expert – THEP): Advantages: Socio-economic development with creation of jobs and income generation activities. Disadvantages: Displacement; Inadequate compensation; R&R issues Codes: Socio-economic development; creation; jobs; income generation activities; displacement; inadequate compensation; R&R issues

Number of codes: 7 New codes: 2
Respondent 4 (Developer 1 - THEP): Advantages: Cheap and clean power along with socio-economic development with creation of jobs and income generation activities. Disadvantages: R&R issues, social conflicts, protests Codes: Cheap; clean; power; socio-economic development; creation; jobs; income generation activities; R&R issues, social conflicts, protests Number of Codes: 10 New Codes: 2
Respondent 5 (Developer 2 - THEP): Advantages: Cheap, clean and sustainable power along with socio-economic development with creation of jobs and income generation activities. Disadvantages: R&R issues, social conflicts. Codes: Cheap; clean; sustainable; power; socio-economic development; creation; jobs; income generation activities; R&R issues, social conflicts. Number of Codes: 10 New Codes: 1
Respondent 6 (PAP 1 – THEP): Advantages: Socio-economic development with creation of jobs and income generation activities. Creation of infrastructure. Disadvantages: Displacement due to blasting and submergence leading to loss of livelihood, home, land, community life. Inadequate compensation results in social conflicts, protests and litigation

Codes: Socio-economic development, creation, jobs, infrastructure; income generation activities, displacement, blasting, submergence, loss, livelihood, home, land, community life, inadequate compensation, social conflicts, protests, litigation Number of Codes: 17 New Codes: 9
Respondent 7 (PAP 2 – THEP): Advantages: Socio-economic development with creation of jobs and income generation activities. Disadvantages: Displacement causes loss of livelihood, home, land, community life. Inadequate compensation results in social conflicts, protests and litigation Codes: Socio-economic development, creation, jobs, income generation activities, displacement, loss, livelihood, home, land, community life, inadequate compensation, social conflicts, litigation Number of Codes: 13 New Codes: 0
Respondent 8 (PAP 3 – THEP): Advantages: Socio-economic development with creation of jobs. Disadvantages: Submergence leading to displacement, loss of livelihood, home, land, community life. Inadequate compensation results in social conflicts, protests Codes: Socio-economic development, creation, jobs, submergence, displacement, loss, livelihood, home, land, community life, inadequate compensation, social conflicts, protests

Number of Codes: 13 New Codes: 0
Q4: What is your take on R&R issues associated with Hydropower Projects in Uttarakhand?
Respondent 1 (Local administration 1 – THEP): Issues related to R&R need to be resolved in time. The key to address R&R issues is the need for comprehensive planning backed by strong political will. Further there should be effective communication from the developer side about the compensation and the benefits dispensed. Codes: R&R issues; resolved; time; hydropower projects; THEP; comprehensive planning; political will; effective communication; conflicts. Number of Codes: 9 New Codes: 9
Respondent 2 (Local administration 2 – THEP): With my experiences regarding THEP, I can tell you that lack of comprehensive planning, lack of political will and frequent changes in policy make it quite difficult for the local administration to address R&R issues. Codes: THEP; lack of comprehensive planning; lack of political will; frequent changes in policy; difficult; local administration; R&R issues. Number of Codes: 7 New Codes: 1

Respondent 3 (Expert – THEP): R&R policy lack in terms of providing adequate compensation especially for loss of common property. Implementation of the R&R initiatives also suffer due to bureaucratic and administrative mismanagement by administrative departments involved in R&R. There is poor coordination and communication between representatives of local administration implementing R&R initiatives. There is also no clarity amongst the PAPs as to the departments within the state machinery allocated for addressing concerns as a result of displacement. There is a need for a single clearance window for addressing concerns of PAP Codes: R&R policy; lack; inadequate compensation; bureaucratic and administrative mismanagement; state machinery; concerns; PAP; clarity; single clearance window. Number of codes: 9 New codes: 6
Respondent 4 (Developer 1 - THEP): With my experiences regarding THEP, frequent changes in policy and transfer of officials dealing in R&R make it quite difficult to address R&R issues. Bureaucratic and administrative mismanagement by local administration and poor coordination escalate R&R issues and hinder the development of hydropower projects in Uttarakhand. Codes: THEP; transfer of officials; frequent changes in policy; difficult; R&R issues; bureaucratic and administrative mismanagement; local administration; poor coordination; hinder; development; hydropower projects; Uttarakhand

Number of Codes: 12 New Codes: 3
Respondent 5 (Developer 2 - THEP): From my experiences in THEP, it is clear that lack of political will and frequent changes in policy make it quite difficult to address R&R issues. Loss of land and home is evident as a result of hydro projects and are compensated as per R&R policy. Bureaucratic and administrative mismanagement by local administration and poor coordination and communication between representatives of local administration escalate R&R issues and hinder the development of hydropower projects in Uttarakhand. Codes: THEP; lack of political will; frequent changes in policy; difficult; R&R issues; loss; land; home; compensated; R&R policy; bureaucratic and administrative mismanagement; local administration; poor coordination and communication; hinder; development; hydropower projects; Uttarakhand Number of Codes: 17 New Codes: 6
Respondent 6 (PAP 1 – THEP): Current R&R policy is inadequate as it leads to inadequate compensation. Implementation of the R&R initiatives also suffer due to bureaucratic and administrative mismanagement by local administration. There is poor coordination and communication between representatives of local administration implementing R&R initiatives. Construction of hydro projects leads to displacement resulting in loss of home, land, livelihood, water source, religious places, van panchayat land, grazing ground and fodder, cremation ground, community life, culture, health and hygiene.

Poor support by local administration results in delayed and inadequate compensation leading to social conflicts and protests. There is a need to make R&R policy more comprehensive and to ensure effective implementation. Codes: Current; R&R policy; inadequate; inadequate compensation; implementation; R&R initiatives; bureaucratic and administrative mismanagement; construction; local administration; poor coordination and communication; blasting; submergence; displacement; loss; home; land; livelihood; water source; religious places, van panchayat land; grazing ground and fodder; cremation ground; community life; culture; health and hygiene; poor support; delayed; social conflicts; protests; comprehensive; effective implementation Number of Codes: 31 New Codes: 16
Respondent 7 (PAP 2 – THEP): Current R&R policy leads to inadequate compensation. Submergence leads to displacement resulting in loss of home, land, livelihood, water source, religious places, van panchayat land, grazing ground and fodder, etc. Poor support by local administration results in delayed and inadequate compensation leading to social conflicts and protests. Codes: Current; R&R policy; inadequate compensation; submergence; displacement; loss; home; land; livelihood; water source; religious places; van panchayat land; grazing ground and fodder; poor support; local administration; delayed; social conflicts; protests Number of Codes: 18 New Codes: 0

Respondent 8 (PAP 3 – THEP): Poor support by local administration results in delayed and inadequate compensation leading to social conflicts and protests. Codes: poor support; local administration; delayed; social conflicts; protests Number of Codes: 5 New Codes: 0
Q5: How does R&R issues impact the viability of Hydropower Projects in Uttarakhand?
Respondent 1 (Local administration 1 – THEP): R&R issues associated with hydropower projects in Uttarakhand lead to social conflicts resulting in time delays and cost overruns making them unviable. Codes: R&R issues; hydropower projects; Uttarakhand; social conflicts; time delays; cost overruns, unviable Number of Codes: 7 New Codes: 7
Respondent 2 (Local administration 2 – THEP): Due to R&R issues, projects face social conflicts and protests leading to time delays and cost overruns. Codes: R&R issues; social conflicts; protests; time delays; cost overruns. Number of Codes: 5 New Codes: 1

Respondent 3 (Expert – THEP): R&R issues lead to social conflicts resulting in time delays and cost overruns. Codes: R&R issues; social conflicts; time delays; cost overruns. Number of Codes: 4 New Codes: 0
Respondent 4 (Developer 1 - THEP): Due to R&R issues, hydropower projects in Uttarakhand face social conflicts, protests, work stoppage and litigation leading to time delays and cost overruns. Codes: R&R issues; hydropower projects; Uttarakhand; social conflicts; protests; work stoppage; litigation; time delays; cost overruns. Number of Codes: 9 New Codes: 2
Respondent 5 (Developer 2 - THEP): Because of R&R issues, projects face social conflicts, protests, work stoppage and litigation leading to time delays and cost overruns and consequently making the hydropower projects in Uttarakhand unviable. Codes: R&R issues; social conflicts; protests; work stoppage; litigation; time delays; cost overruns; hydropower projects; Uttarakhand; unviable. Number of Codes: 10 New Codes: 0

Respondent 6 (PAP 1 – THEP): Because of R&R issues including displacement and inadequate compensation, projects face social conflicts, protests, work stoppage and litigation leading to time delays and cost overruns and consequently making the hydropower projects in Uttarakhand unviable. Codes: R&R issues; displacement; inadequate compensation; social conflicts; protests; work stoppage; litigation; time delays; cost overruns; hydropower projects; Uttarakhand; unviable. Number of Codes: 12 New Codes: 2
Respondent 7 (PAP 2 – THEP): R&R issues including displacement and inadequate compensation lead to social conflicts, protests, work stoppage and litigation leading to time delays and cost overruns and consequently making the hydropower projects in Uttarakhand unviable. Codes: R&R issues; displacement; inadequate compensation; social conflicts; protests; work stoppage; litigation; time delays; cost overruns; hydropower projects; Uttarakhand; unviable. Number of Codes: 12 New Codes: 0
Respondent 8 (PAP 3 – THEP): R&R issues including displacement and inadequate compensation lead to social conflicts, protests, work stoppage and litigation leading to time delays and cost overruns and consequently making the hydropower projects in Uttarakhand unviable.

Codes: R&R issues; displacement; inadequate compensation; social conflicts; protests; work stoppage; litigation; time delays; cost overruns; hydropower projects; Uttarakhand; unviable. Number of Codes: 12 New Codes: 0
Q6: Based on your experience, share the impact of Hydropower Projects on the following aspects of PAP: Land; Job/Livelihood; Home; Food security; Health; Common property; Community life; Women security; Education; Any other issue
Respondent 1 (Local administration 1 – THEP): Based on my experience with THEP, hydropower projects lead to loss of land, home, livelihood, food security, health, common property (grazing ground and fodder, water source, religious places, playground), community life and women security. In addition, the PAP often complain about inadequate compensation and lack of facilities at resettlement locations. Codes: THEP; hydropower projects; loss; land; home; livelihood; food security; health; common property; grazing ground and fodder; water source; religious places; playground; community life; women security; PAP; complain; inadequate compensation; lack of facilities; resettlement locations. Number of Codes: 20 New Codes: 20

Respondent 2 (Local administration 2 – THEP): Hydropower projects lead to loss of land, home, livelihood, food security, health, common property (grazing ground and fodder, water source, religious places, playground), community life, culture, etc. Often, PAP complain about inadequate compensation and lack of facilities at resettlement locations.

Codes: Hydropower projects; loss; land; home; livelihood; food security; health; common property; grazing ground and fodder; water source; religious places; playground; community life, culture, PAP; complain; inadequate compensation; lack of facilities; resettlement locations.

Number of Codes: 19 New Codes: 1

Respondent 3 (Expert – THEP):

Before displacement, PAP have home, agricultural land and access to common property. In most locations where PAP have been settled the have concerns of loss of land, home, livelihood, food security, health, common property (grazing ground and fodder, water source, religious places, playground, van panchayat land, cremation ground), community life, culture, etc. Often, PAP complain about inadequate compensation and lack of facilities at resettlement locations. In addition, it has been found that if a woman is the head of a joint family of PAP loses her property rights if her sons get the R&R compensation deeply affecting women security. The Hanumantha Rao committee constituted by supreme court addressed some of the issues related to gender equality and compensation disparities still women feel they suffered the most. Further many displaced people are not eligible for bank loans as land titles have not been allotted.

Codes: Hydropower projects; displacement; PAP; home; agricultural land; access; common property; agriculture; livelihood; community; culture; new location; uprooted; loss; land; food security; health; grazing ground and fodder; water source; religious places; playground; van panchayat land, cremation ground, community life, culture, complain; inadequate compensation; lack of facilities; resettlement locations; woman; head of joint family; Hanumantha Rao Committee; Land titles; bank loans; gender; disparity; loses her property rights; sons get R&R compensation; affecting; women security Number of Codes: 40 New Codes: 16
Respondent 4 (Developer 1 - THEP): Though the developer has worked in all corners to uplift the socio economic conditions in all corners PAP feel dissatisfied as they experience loss of land, home, livelihood, food security, health, common property (grazing ground and fodder, water source, religious places, playground, van panchayat land), community life, culture, etc. Often, PAP complain about inadequate compensation and lack of facilities at resettlement locations. Codes: Socio-economic; displacement; PAP; dissatisfied; loss; land; home; livelihood; food security; health; common property; grazing ground and fodder; water source; religious places; playground; van panchayat land, community life, culture, complain; inadequate compensation; lack of facilities; resettlement locations. Number of Codes: 22 New Codes: 1

Respondent 5 (Developer 2 - THEP): Because of displacement due to hydropower projects, at the new location PAP feel uprooted as they experience loss of land, home, livelihood, food security, health, common property (grazing ground and fodder, water source, religious places, playground, van panchayat land, cremation ground), community life, culture, etc. Often, PAP complain about inadequate compensation and lack of facilities at resettlement locations. Frequent changes in policy coupled with bureaucratic and administrative mismanagement aggravate the loss to PAP. Codes: Displacement; hydropower projects; new location; PAP; uprooted; loss; land; home; livelihood; food security; health; common property; grazing ground and fodder; water source; religious places; playground; van panchayat land, cremation ground, community life, culture, complain; inadequate compensation; lack of facilities; resettlement locations; frequent changes in policy; bureaucratic and administrative mismanagement Number of Codes: 26 New Codes: 2
Respondent 6 (PAP 1 – THEP): Hydropower projects make the displaced PAP feel uprooted as they experience loss of land, home, livelihood, food security, health, common property, community life, culture, etc. Often, PAP complain about inadequate compensation and lack of facilities at resettlement locations. Frequent changes in policy coupled with bureaucratic and administrative mismanagement aggravate the loss to PAP as they are made to run from one office to another to claim the compensation that are often found to be inadequate in comparison with the loss to the PAP.

Codes: Hydropower projects; displaced; PAP; uprooted; loss; land; home; livelihood; food security; health; common property; community life; culture; complain; inadequate compensation; lack of facilities; resettlement locations; frequent changes in policy; bureaucratic and administrative mismanagement; run from one office to another; compensation; inadequate; comparison Number of Codes: 23 New Codes: 4
Respondent 7 (PAP 2 – THEP): Hydropower projects make the displaced PAP feel uprooted as they experience loss of land, home, livelihood, food security, health, common property (grazing ground and fodder, water source, religious places, playground, van panchayat land, cremation ground), community life, culture, etc. Often, PAP complain about inadequate compensation and lack of facilities at resettlement locations. Frequent changes in policy coupled with bureaucratic and administrative mismanagement aggravate the loss to PAP as they are made to run from one office to another to claim the compensation that are often found to be inadequate in comparison with the loss to the PAP. Codes: Hydropower projects; displaced; PAP; uprooted; loss; land; home; livelihood; food security; health; common property; grazing ground and fodder; water source; religious places; playground; van panchayat land; cremation ground; community life; culture; complain; inadequate compensation; lack of facilities; resettlement locations; frequent changes in policy; bureaucratic and administrative mismanagement; run from one office to another; compensation; inadequate; comparison Number of Codes: 29 New Codes: 0

Respondent 8 (PAP 3 – VPHEP): Hydropower projects lead to loss of land, home, livelihood, food security, health, common property (grazing ground and fodder, water source, religious places, playground, etc.), community life. Often, PAP complain about inadequate compensation and lack of facilities at resettlement locations. Frequent changes in policy coupled with bureaucratic and administrative mismanagement aggravate the loss to PAP as they are made to run from one office to another to claim the compensation that are often found to be inadequate in comparison with the loss to the PAP. Codes: Hydropower projects; loss; land; home; livelihood; food security; health; common property; grazing ground and fodder; water source; religious places; playground; community life; complain; inadequate compensation; lack of facilities; resettlement locations; frequent changes in policy; bureaucratic and administrative mismanagement; run from one office to another; compensation; inadequate; comparison Number of Codes: 23 New Codes: 0
Q7: Is the current R&R policy effective enough to address R&R issues of Hydropower projects in Uttarakhand? If no, comment on the lacunas of the policy.
Respondent 1 (Local administration 1 – THEP): The policy in the state should be uniform. R&R is a complex issue that involves people and their beliefs, culture and identity. Though it is understood that uniformity is a challenge as there are local factors that need to be taken care of.

Owing to its geography land in hilly and plain areas differ significantly in terms of availability and price. R&R becomes quite challenging. Land for land compensation, as mentioned in current R&R policy, gets quite complex in case of Uttarakhand as the values of hilly land and plain are quite different. The R&R process took almost three decades for PAP displaced as a result of Tehri Dam. Land that was available earlier for PAP that moved in the initial stages is no longer available for the same price. The new displaces demand for the same entitlement. Codes: Uniform; belief; culture; challenge; initial stages; geography; availability; price; hilly; plain; identity; R&R; challenging; land for land compensation; R&R policy; complex; displaces Number of Codes: 17 New Codes: 17
Respondent 2 (Local administration 2 – THEP): The policy should not change frequently owing to political favors. The policy in the state should be uniform. Though it is understood that uniformity is a challenge as there are local factors that need to be taken care of. Owing to its geography land in hilly and plain areas differ significantly in terms of availability and price. R&R becomes quite challenging. Land for land compensation, as mentioned in current R&R policy, gets quite complex in case of Uttarakhand as the values of hilly land and plain are quite different. The R&R process took almost three decades for PAP displaced as a result of Tehri Dam. Land that was available earlier for PAP that moved in the initial stages is no longer available for the same price. The new displaces demand for the same entitlement.

Codes: Uniform; challenge; initial stages; geography; availability; price; hilly; plain; identity; R&R; challenging; land for land compensation; R&R policy; complex; displaces, political, frequently Number of Codes: 17 New Codes: 3
Respondent 3 (Expert – THEP): Current R&R policy is not effective enough. Land for land compensation, as mentioned in current R&R policy, leads to inadequate compensation in Uttarakhand as the values of land in hilly and plain areas are quite different. Also, instead of circle rates, R&R policy must have a transparent and fair compensation policy based on market value of land. Additionally, apart from assessing loss to home and land, PAP's loss of livelihood, common property, community life, culture, etc. must be considered for fixing the compensation. In addition, if a woman is the head of a joint family of PAP, her property rights must be protected. The livelihood restoration initiatives need to be strengthened. At times, it is seen that skill workshop is conducted merely for the namesake. Large number of PAP from Tehri Dam have been settled in Dehradun and Haridwar which give them proximity to industrial zones. Policy should incorporate some incentives for industries to hire PAP. Codes: Current, R&R policy; not effective; land for land compensation; inadequate compensation; Uttarakhand; land; hilly; plain; areas; different; circle rates; transparent; fair; compensation policy; market value; assessing; loss to home and land; PAP's; loss; livelihood; common property; community life; culture; must be considered; for fixing; compensation; woman; head of joint family; PAP; property rights; protected; industry; Dehradun; Haridwar; incentives; hire; incorporate; skill; workshop; restoration

Number of Codes: 38 New Codes: 24
Respondent 4 (Developer 1 - THEP): Current R&R policy is not effective to address the R&R issues. Land for land compensation, as mentioned in current R&R policy, gets quite complex in case of Uttarakhand as the values of land in hilly and plain areas are quite different. Also, instead of circle rates, R&R policy must have a transparent and fair compensation policy based on market value of land. Also, not much negotiation should be allowed as that often leads to unfair bargaining that hinders the development of hydropower projects in Uttarakhand. The district administration should also come out in full support to address the concerns. Codes: Current; R&R policy; not effective; land for land compensation; ambiguous; Uttarakhand; hilly; plain; areas; different; circle rates; transparent; fair; compensation policy; market value; land; not much negotiation; should be allowed; unfair bargaining; hinders; development; hydropower projects; district administration; support; concerns Number of Codes: 24 New Codes: 3
Respondent 5 (Developer 2 - THEP): Existing R&R policy is not effective enough. Instead of circle rates, R&R policy must have a transparent and fair compensation policy based on market value of land. Additionally, unlike current scenario, after comprehensive review the components of compensation must be fixed without much scope for bargaining. The district administration should also come out in full support to address the concerns.

Codes: Existing; R&R policy; not effective; instead of; circle rates; transparent; fair; compensation policy; market value; land; after comprehensive review; components of compensation; fixed; district administration; support; concerns Number of Codes: 16 New Codes: 4
Respondent 6 (PAP 1 – THEP): Current R&R policy is not effective enough. Land for land compensation, as mentioned in current R&R policy, leads to inadequate compensation in Uttarakhand as the values of land in hilly and plain areas are quite different. Also, instead of circle rates, R&R policy must have a transparent and fair compensation policy based on market value of land. Additionally, apart from assessing loss to home and land, PAP's loss of livelihood, common property, community life, culture, etc. must be considered for fixing the compensation. Special attention need to be given to women especially who are old or widowed. Codes: Current, R&R policy; not effective; land for land compensation; inadequate compensation; Uttarakhand; land; hilly; plain; areas; different; circle rates; transparent; fair; compensation policy; market value; assessing; loss to home and land; loss; livelihood; common property; community life; culture; must be considered; for fixing; compensation; woman; old; widowed; PAP; property rights; protected. Number of Codes: 32 New Codes: 2

Respondent 7 (PAP 2 – THEP): Current R&R policy is not effective enough. Instead of circle rates, R&R policy must have a transparent and fair compensation policy based on market value of land. Additionally, apart from assessing loss to home and land, PAP's loss of livelihood, common property, community life, culture, etc. must be considered for fixing the compensation. Also, if a woman is the head of a joint family of PAP, her property rights must be protected. Codes: Current, R&R policy; not effective; circle rates; transparent; fair; compensation policy; market value; assessing; loss to home and land; loss; livelihood; common property; community life; culture; must be considered; for fixing; compensation; woman; head of joint family; PAP; property rights; protected. Number of Codes: 24 New Codes: 0
Respondent 8 (PAP 3 – THEP): Existing R&R policy is not effective enough. Land for land compensation, as mentioned in current R&R policy, leads to inadequate compensation in Uttarakhand as the values of land in hilly and plain areas are quite different. Also, instead of circle rates, R&R policy must have a transparent and fair compensation policy based on market value of land. Additionally, apart from assessing loss to home and land, PAP's loss of livelihood, common property, community life, culture, etc. must be considered for fixing the compensation. Also, if a woman is the head of a joint family of PAP, her property rights must be protected. Codes: Existing, R&R policy; not effective; land for land compensation; inadequate compensation; Uttarakhand; land; hilly; plain; areas; different; circle rates; transparent; fair; compensation policy; market value; assessing; loss to home and

land; loss; livelihood; common property; community life; culture; must be considered; for fixing; compensation; woman; head of joint family; PAP; property rights; protected. Number of Codes: 31 New Codes: 0
Q8: Share your experiences regarding the implementation of R&R initiatives for PAP of Hydropower Projects in Uttarakhand.
Respondent 1 (Local administration 1 – THEP): Based on my experience with THEP, I can say that there is lack of comprehensive planning, lack of political will along with uncertain policy environment that makes it very difficult to implement R&R initiatives. Involvement of multiple agencies, lack of communication and coordination among agencies and bureaucratic procedures often lead to inadequate and delayed compensation to the PAP resulting in social conflicts and protests. Codes: THEP; lack of comprehensive planning; lack of political will; uncertain policy environment; difficult; implement; R&R initiatives; involvement of multiple agencies; lack of communication and coordination; agencies; bureaucratic procedures; inadequate and delayed compensation; PAP; social conflicts; protests Number of Codes: 14 New Codes: 14

Respondent 2 (Local administration 2 – THEP): My experience with hydropower projects in Uttarakhand indicate that there is lack of comprehensive planning, lack of political will along with uncertain policy environment that makes it very difficult to implement R&R initiatives. Lack of communication and coordination among agencies and bureaucratic and administrative mismanagement often lead to inadequate and delayed compensation to the PAP resulting in social conflicts and protests. Codes: Hydropower projects; Uttarakhand; lack of comprehensive planning; lack of political will; uncertain policy environment; difficult; R&R initiatives; lack of communication and coordination; agencies; bureaucratic and administrative mismanagement; inadequate and delayed compensation; PAP; social conflicts; protests Number of Codes: 14 New Codes: 3
Respondent 3 (Expert – THEP): R&R policy implementation is quite disordered. Lack of effective communication within the implementing departments and with public is evident. It is important that district administration, developer, gram panchayat and political machinery should have a common objective. At times PAP do not know the relevant department for their concerns. Due to uncertain policy environment and lack of political will, there is lot of ambiguity regarding compensation that leads to social conflicts, protests and litigation. Involvement of multiple agencies, lack of communication and coordination among agencies and bureaucratic procedures often lead to inadequate and delayed compensation to the PAP. Also, during implementation, compensation is not allocated in a transparent and fair manner.

Codes: R&R policy; implementation; disordered; effective communication; district administration; gram panchayat; developer; political machinery; common objective; relevant; concerns; uncertain policy environment; lack of political will; ambiguity; compensation; social conflicts; protests; litigation; involvement of multiple agencies; lack of communication and coordination; agencies; bureaucratic procedures; inadequate and delayed compensation; PAP; not allocated; transparent and fair; manner Number of Codes: 27 New Codes: 17
Respondent 4 (Developer 1 - THEP): My experience with hydropower projects in Uttarakhand indicate that there is lack of political will and negligible local administration support for the projects. Uncertain policy environment and unjust demands by PAP make R&R difficult and costly. Codes: Hydropower projects; Uttarakhand; lack of political will; negligible local administration support; uncertain policy environment; unjust demands; R&R; difficult; costly Number of Codes: 9 New Codes: 4
Respondent 5 (Developer 2 - THEP): As per my experience with hydropower projects in Uttarakhand, there is lack of political will along with uncertain policy environment that makes it very difficult to implement R&R initiatives. Lack of communication and coordination among agencies and bureaucratic and administrative mismanagement often lead to

inadequate and delayed compensation to the PAP resulting in social conflicts and protests. Often, PAP complain about running from one government office to another to claim compensation that makes the situation worse for the developer. Codes: Hydropower projects; Uttarakhand; lack of political will; uncertain policy environment; difficult; R&R initiatives; lack of communication and coordination; agencies; bureaucratic and administrative mismanagement; inadequate and delayed compensation; PAP; social conflicts; protests; complain; running from one government office to another; claim; compensation; situation; worse; developer Number of Codes: 16 New Codes: 7
Respondent 6 (PAP 1 – THEP): R&R policy implementation has been matter of great concern. Due to uncertain policy environment and lack of political will, there is lot of uncertainty regarding compensation that leads to social conflicts, protests and litigation. Involvement of multiple agencies, lack of communication and coordination among agencies and bureaucratic procedures often lead to inadequate and delayed compensation to the PAP. Lack of local administration support also aggravate the situation and make R&R tough for all stakeholders. Codes: R&R policy; implementation; concern; uncertain policy environment; lack of political will; uncertainty; compensation; social conflicts; protests; litigation; involvement of multiple agencies; lack of communication and coordination; agencies; bureaucratic procedures; inadequate and delayed compensation; PAP; lack of local administration support; aggravate; situation; R&R; tough; stakeholders Number of Codes: 22 New Codes: 6

Respondent 7 (PAP 2 – THEP): Due to uncertain policy environment and lack of political will, there is lot of ambiguity regarding compensation that leads to social conflicts, protests and litigation. Also, during implementation, compensation is not allocated in a transparent and fair manner. Involvement of multiple agencies, lack of communication and coordination among agencies and bureaucratic procedures often lead to inadequate and delayed compensation to the PAP. Codes: Uncertain policy environment; lack of political will; ambiguity; compensation; social conflicts; protests; litigation; implementation; not allocated; transparent and fair; manner; involvement of multiple agencies; lack of communication and coordination; agencies; bureaucratic procedures; inadequate and delayed compensation; PAP Number of Codes: 17 New Codes: 0
Respondent 8 (PAP 3 – THEP): There is lot of uncertainty regarding compensation that leads to social conflicts, protests and litigation. Involvement of multiple agencies, lack of communication and coordination among agencies and bureaucratic procedures often lead to inadequate and delayed compensation to the PAP. We have been made to run from one government office to another to claim compensation that makes the situation worse. Codes: Uncertainty; compensation; social conflicts; protests; litigation; involvement of multiple agencies; lack of communication and coordination; agencies; bureaucratic procedures; inadequate and delayed compensation; PAP; run from one government office to another; claim; compensation; situation; worse Number of Codes: 16 New Codes: 0

Q9: Is there any gap between current R&R policy and its implementation for Hydropower Projects in Uttarakhand? If yes, share your experiences.
Respondent 1 (Local administration 1 – THEP): On paper, R&R policy addresses many issues which does not get transpired to ground level. The problem arises especially when there are multiple resettlement locations. In the case of Tehri, PAP were settled in New Tehri Town, Dehradun and Haridwar districts. In addition, there were urban as well as rural settlement in the three districts. As with employment opportunities as well there was no clear cut standing on as to what would be the eligibility criteria for aspirants applying for jobs at THDC. Those were left out raised their voices leading to protest and litigation. Codes: R&R policy; issues; problem; multiple; resettlement locations; Tehri, PAP; New Tehri Town; Dehradun; Haridwar; urban; rural; settlement; three districts; employment; opportunities; clear; eligibility criteria; aspirants; jobs; THDC; raised; voices; leading; protest; litigation. Number of Codes: 26 New Codes: 26
Respondent 2 (Local administration 2 – THEP): The compensation process needs to be fair. The livelihood measures also need to be monitored. Just putting them on policy will not work unless it is accounted for. There is a gap between R&R policy and its implementation. The problem arises especially when there are multiple resettlement locations. In the case of

Tehri, PAP were settled in New Tehri Town, Dehradun and Haridwar which further had urban as well as rural settlement in the three districts. There is also a gender biasness in the policy. Codes: R&R policy; issues; problem; multiple; resettlement locations; Tehri, PAP; New Tehri Town; Dehradun; Haridwar; urban; rural; settlement; three districts; employment; opportunities; clear; eligibility criteria; aspirants; jobs; THDC; raised; voices; leading; protest; litigation; livelihood; compensation; fair; measures; monitored; accounted Number of Codes: 32 New Codes: 6
Respondent 3 (Expert – THEP): Implementation has always been an issue. The policy on paper needs to have a political backing. Implementation woes arise as a result of delays primarily in granting compensation. One should give emphasis on the timelines and it is the duty of the government to make people associated with compensation accountable. Monetary clearance should be fast and transparent. Livelihood measures should be monitored on a regular basis. It was seen in many places that these initiatives lost inertia in the very first year of its implementation. Implementation has always been an issue. The policy on paper needs to have a political backing. Codes: Implementation; issue; delays; compensation; timelines; government; accountable; Monetary clearance; fast; transparent; Livelihood; measures; monitored; regular; initiatives; lost; inertia; Number of Codes: 18 New Codes: 10

Respondent 4 (Developer 1 - THEP): The Local administration support is paramount to any R&R policy implementation especially in the case of resettlement of PAP. Local administration takes enormous time in taking decisions. R&R policy also guides the implementing agencies to provide similar or better facilities (roads, electricity, water supply, schools, temples, etc.) in the new location to the PAP. However, the new locations are generally found to be lacking in infrastructure facilities. However, implementing agencies strive to ensure access to common property such as playground and temple to PAP at new locations after displacement, but due to shortage of space it is often missed at new locations. Codes: Local administration; PAP; support; paramount; R&R policy; implementation; resettlement; enormous; time; decisions; implementing agencies; provide; similar or better facilities; roads, electricity, water supply, schools, temples; new location; lacking in infrastructure facilities; access to common property; playground and temple; displacement; shortage of space; missed; new locations Number of Codes: 29 New Codes: 9
Respondent 5 (Developer 2 - THEP): The Local administration support is important to any R&R policy implementation especially in the case of resettlement of PAP. Local administration takes enormous time in taking decisions. Codes: Local administration; PAP; support; important; R&R policy; implementation; resettlement; enormous; time; decisions Number of Codes: 10 New Codes: 1

Respondent 6 (PAP 1 – THEP): There are certainly gaps between the policy and its implementation. The compensation process needs to be fair. The livelihood measures also need to be monitored. Just putting them on policy will not work unless it is accounted for. One should give emphasis on the timelines and it is the duty of the government to make people associated with compensation accountable. Monetary clearance should be fast and transparent. R&R policy also guides the implementing agencies to provide similar or better facilities (roads, electricity, water supply, schools, temples, etc.) in the new location to the PAP. However, the new locations are generally found to be lacking in infrastructure facilities. Codes: Implementation; issue; compensation; timelines; government; accountable; Monetary clearance; fast; transparent; Livelihood; measures; monitored R&R policy; implementing agencies; provide; similar or better facilities; roads, electricity, water supply, schools, temples; new location; lacking in infrastructure facilities; Number of Codes: 22 New Codes: 11
Respondent 7 (PAP 2 – THEP): Several differences are there. Instead of best price for land that is close to market price. Regarding jobs also, only few PAP family members get good jobs (government, public sector or reputed private company jobs) whereas others get jobs with small local vendors that are not desirable. R&R policy also guides the implementing agencies to provide similar or better facilities (roads, electricity, water supply, schools, temples, etc.) in the new location to the PAP. However, the new locations are generally found to be lacking in infrastructure facilities. Regarding impartation

of employable skills to PAP and their family members, the implementing agencies are hardly doing anything meaningful. We do not get decent jobs. Codes: Differences; best price; land; market price; PAP; land compensation; circle rate; jobs; family members; good jobs; government, public sector or reputed private company jobs; small local vendors; not desirable; R&R policy; implementing agencies; provide; similar or better facilities; roads, electricity, water supply, schools, temples; new location; lacking in infrastructure facilities; impartation; employable skills; hardly doing; anything meaningful. Number of Codes: 24 New Codes: 0
Respondent 8 (PAP 3 – THEP): There are differences. Compensation for land not good enough. Regarding jobs also, only few PAP family members get good jobs (government, public sector or reputed private company jobs) whereas others get jobs with small local vendors that are not desirable. R&R policy also guides the implementing agencies to provide similar or better facilities (roads, electricity, water supply, schools, temples, etc.) in the new location to the PAP. However, the new locations are generally found to be lacking in infrastructure facilities. Regarding impartation of employable skills to PAP and their family members, the implementing agencies are hardly doing anything meaningful. Issue of women rights has also emerged during implementation of R&R initiatives as it has been found that women (especially widow or unmarried women in joint families) don't get property rights after displacement as property rights are transferred to eligible male members and such women are often observed to become dependent on others.

Codes: land; PAP; land compensation; jobs; family members; good jobs; government, public sector or reputed private company jobs; small local vendors; not desirable; R&R policy; implementing agencies; provide; similar or better facilities; roads, electricity, water supply, schools, temples; new location; lacking in infrastructure facilities; impartation; employable skills; hardly doing; anything meaningful; women rights; implementation; R&R initiatives; widow or unmarried women in joint families; property rights; displacement; transferred; male members; dependent Number of Codes: 29 New Codes: 0
Q10: Based on your experiences, suggest improvements (if any) in R&R policy associated with Hydropower Projects in Uttarakhand to make it more effective.
Respondent 1 (Local administration 1 – THEP): Officials should not be transferred frequently. It takes years to build relationship with PAPs. The R&R policy must not have any scope for modification as that opens up the gate for bargaining, protests and litigations. Also, as land for land compensation has been found to be very difficult and tedious to implement in a transparent and fair way, R&R policy should have only monetary compensation for all kind of losses. The monetary compensation must be market linked to make the compensation acceptable to all stakeholders. Codes: Transferred, frequently, build, relationship, R&R policy; must not have; scope for modification; opens up the gate; bargaining; protests; litigation; land for land compensation; difficult and tedious to implement; way; monetary compensation; for all kind of losses; market linked; compensation; acceptable to all stakeholders

Number of Codes: 22 New Codes: 22
Respondent 2 (Local administration 2 – THEP): Communication channels from developer should be clear to all other stakeholders. The monetary compensation must be market linked to make the compensation acceptable to all stakeholders. Codes: Compensation; channels; developer; clear; minimize; monetary compensation; market linked; compensation; acceptable to all stakeholders Number of Codes: 9 New Codes: 4
Respondent 3 (Expert – THEP): Officials should not be transferred frequently. It takes years to build relationship with PAPs. PAPs who were compensated by cash had difficult time. There should be single department dealing with R&R. Government should involve local industries/corporates in employing PAPs. R&R policies should not change frequently. Land titles should be allotted soon after PAPs are relocated. It is seen at sites PAPs not getting loans from banks as a result of not owing land tiles. Support of district administration is important for development of hydro power. Codes: Transferred, frequently, build, relationship, PAPs, compensated, R&R policies, local industries/corporates, policies, change, frequently, land titles, relocated, loans, support, district administration, development, hydropower. Number of Codes: 18 New Codes: 13

Respondent 4 (Developer 1 - THEP): Support of district administration is important for development of hydropower. To follow R&R policies and ensure timely disbursal of funds. Need to have strong political will. Codes: support, district administration, development, hydropower, R&R policies, timely disbursal, strong, political will. Number of Codes: 8 New Codes: 3
Respondent 5 (Developer 2 - THEP): Support of district administration is important for development of hydropower. Contractors should pay similar salaries to PAPs employed. Need to have strong political will. Codes: Support, district administration, development, hydropower, contractors, salaries, PAPs, strong, political will. Number of Codes: 9 New Codes: 2
Respondent 6 (PAP 1 – THEP): Land titles should be allotted soon after PAPs are relocated. It is seen at sites PAPs not getting loans from banks as a result of not owing land tiles. New locations should have sustainable livelihood options which are linked to industry Monetary compensation for all losses of PAP including loss of land, home, livelihood, food security, health, access to common property such as grazing ground and fodder, water source, religious places, playground, van panchayat land, cremation ground, community life, culture, etc. is the best option. Codes: Land titles, Loans, banks, locations; sustainable, livelihood; linked; industry monetary compensation; for all losses; PAP; loss; land; home; livelihood; food security; health; access to common property; grazing ground and fodder; water

source; religious places; playground; van panchayat land; cremation ground; community life; culture; R&R policy; single window system; time bound services Number of Codes: 29 New Codes: 5
Respondent 7 (PAP 2 – THEP): The rehabilitation in new locations should have sustainable livelihood options which are linked to industry Codes: rehabilitation; locations; sustainable; livelihood; linked; industry. Number of Codes: 6 New Codes: 1
Respondent 8 (PAP 3 – THEP): Monetary compensation for all losses of PAP including loss of land, home, livelihood, food security, health, access to common property such as grazing ground and fodder, water source, religious places, playground, van panchayat land, cremation ground, community life, culture, etc. is the best option. Codes: Monetary compensation; for all losses; PAP; loss; land; home; livelihood; food security; health; access to common property; grazing ground and fodder; water source; religious places; playground; van panchayat land; cremation ground; community life; culture; Number of Codes: 18 New Codes: 0

Q11: Suggest measures to address implementation issues and minimize gaps between R&R policy and implementation.
Respondent 1 (Local administration 1 – THEP): Effective communication and good coordination between local administration agencies involved in R&R can address R&R issues. Employees involved in R&R should not be transferred mid-way during the R&R of project as the new employee requires time to understand each case and address the issues. Codes: effective communication; good coordination; local administration agencies; R&R; R&R issues; employees; should not be transferred; mid-way; during R&R of project; new employee; requires time; understand each case; address the issues Number of Codes: 20 New Codes: 20
Respondent 2 (Local administration 2 – THEP): Need to develop a transparent and uniform R&R framework to estimate compensation to PAP. Consolidated monetary compensation for all losses to PAP must be the norm, as that will bring lot of transparency and fairness to the implementation of R&R initiatives. Also, the R&R policy must remain consistent with no scope of further negotiations and modifications. Codes: Need; develop; transparent and uniform; R&R framework; estimate; compensation; PAP; consolidated; monetary compensation; for all losses; norm; transparency and fairness; implementation; R&R initiatives; R&R policy; consistent; no scope; further negotiations and modifications

Number of Codes: 18 New Codes: 16
Respondent 3 (Expert – THEP): For improved implementation in a transparent and fair manner, it is necessary to have a clear and easy to implement R&R policy. Effective communication and good coordination between local administration agencies involved in R&R can address R&R issues. Employees involved in R&R should not be transferred mid-way during the R&R of project as the new employee requires time to understand each case and address the issues. A single window system must be there for timely closure of R&R issues. Need to develop a transparent and uniform R&R framework to estimate compensation to PAP. Codes: Improved; implementation; transparent and fair; manner; necessary; clear and easy to implement; R&R policy; effective communication; good coordination; local administration agencies; R&R; R&R issues; employees; should not be transferred; mid-way; during R&R of project; new employee; requires time; understand each case; address the issues; single window system; timely closure; R&R issues; need; develop; transparent and uniform; R&R framework; estimate; compensation; PAP Number of Codes: 30 New Codes: 2
Respondent 4 (Developer 1 - THEP): To achieve implementation of R&R policy in a transparent and fair manner, it is necessary to have a clear and easy to implement R&R policy. Consistent R&R policy with clear compensation mechanisms can minimize bureaucratic and political interferences. Effective communication and good coordination between local administration agencies involved in R&R can improve R&R implementation. Employees involved in R&R should not be

transferred mid-way during the R&R of project as the new employee requires time to understand each case and address the issues.

Codes: Implementation; transparent and fair; manner; necessary; clear and easy to implement; R&R policy; consistent; clear; compensation mechanisms; minimize; bureaucratic and political interferences; effective communication; good coordination; local administration agencies; R&R; employees; should not be transferred; mid-way; during R&R of project; new employee; requires time; understand each case; address the issues

Number of Codes: 23 New Codes: 5

Respondent 5 (Developer 2 - THEP): Consistent R&R policy with clear compensation mechanisms can minimize bureaucratic and political interferences and make implementation more effective. Effective communication and good coordination between local administration agencies involved in R&R can improve R&R implementation. Employees involved in R&R should not be transferred mid-way during the R&R of project as the new employee requires time to understand each case and address the issues.

Codes: Consistent; R&R policy; clear; compensation mechanisms; minimize; bureaucratic and political interferences; implementation; more effective; effective communication; good coordination; local administration agencies; R&R; employees; should not be transferred; mid-way; during R&R of project; new employee; requires time; understand each case; address the issues

Number of Codes: 20 New Codes: 0

Respondent 6 (PAP 1 – THEP): Better implementation of R&R in a transparent and fair manner requires a clear and easy to implement R&R policy. Effective communication and good coordination between local administration agencies involved in R&R can address R&R issues. Employees involved in R&R should not be transferred mid-way during the R&R of project as the new employee requires time to understand each case and address the issues. A single window system must be there for timely closure of R&R issues. Codes: Better; implementation; R&R; transparent and fair; manner; requires; clear and easy to implement; R&R policy; effective communication; good coordination; local administration agencies; R&R issues; employees; should not be transferred; mid-way; during R&R of project; new employee; requires time; understand each case; address the issues; single window system; timely closure; R&R issues Number of Codes: 23 New Codes: 0
Respondent 7 (PAP 2 – THEP): Effective communication and good coordination between local administration agencies involved in R&R can address R&R issues. Employees involved in R&R should not be transferred mid-way during the R&R of project as the new employee requires time to understand each case and address the issues. A single window system must be there for timely closure of R&R issues. Need to develop a transparent and uniform R&R framework to estimate compensation to PAP. Codes: Effective communication; good coordination; local administration agencies; R&R; R&R issues; employees; should not be transferred; mid-way; during R&R of project; new employee; requires time; understand each case; address the

issues; single window system; timely closure; R&R issues; need; develop; transparent and uniform; R&R framework; estimate; compensation; PAP Number of Codes: 23 New Codes: 0
Respondent 8 (PAP 3 – THEP): Effective coordination between local administration agencies involved in R&R can address R&R issues. Employees involved in R&R should not be transferred mid-way during the R&R of project as the new employee requires time to understand each case and address the issues. A single window system must be there for timely closure of R&R issues. Need to develop a transparent and uniform R&R framework to estimate compensation to PAP. Codes: Effective coordination; local administration agencies; R&R; R&R issues; employees; should not be transferred; mid-way; during R&R of project; new employee; requires time; understand each case; address the issues; single window system; timely closure; R&R issues; need; develop; transparent and uniform; R&R framework; estimate; compensation; PAP Number of Codes: 22 New Codes: 0

Appendix G – Conversion of Transcripts Codes into Themes for THEP

Codes generated from transcripts	**Initial category of codes**	**Final category of codes**	**Theme**	**Core Concept**
Hydropower projects; beneficial; society; social conflicts; socio-economic development; R&R issues; protests; litigation; local area; jobs; income generation activities; social unrest; clean; sustainable; cheap; power; project delay; cost overrun; displacement; local population; developers; inadequate compensation; PAP; suffer.	Opinion about hydropower projects in Uttarakhand	Pros and cons of hydropower projects in Uttarakhand	Opportunities and challenges associated with hydropower projects in Uttarakhand	Redressal of R&R issues for the development of hydropower projects in Uttarakhand
Stakeholder; THEP; local administration; displacement; R&R issues; social conflicts; protests; litigation; submergence; project delays; cost overruns; NGO; PAP; lost; land; home; livelihood; community life; displacement; inadequate compensation.	Experiences associated with hydropower projects in Uttarakhand	**Pros and cons of hydropower projects in Uttarakhand**	Opportunities and challenges associated with hydropower projects in Uttarakhand	Redressal of R&R issues for the development of hydropower projects in Uttarakhand

Socio-economic development; creation; job; income generation activities; R&R issues; social conflicts; protests; displacement; inadequate compensation; cheap; clean; power; submergence, loss, livelihood, home, land, community life, inadequate compensation, litigation.	Advantages and disadvantages of hydropower projects in Uttarakhand	Pros and cons of hydropower projects in Uttarakhand	Opportunities and challenges associated with hydropower projects in Uttarakhand	Redressal of R&R issues for the development of hydropower projects in Uttarakhand
R&R issues; timely completion; hydropower projects; THEP; lack of comprehensive planning; lack of political will; difficult; local administration; conflicts; frequent changes in policy; Current; R&R policy; inadequate; inadequate compensation; implementation; R&R initiatives; bureaucratic and administrative mismanagement; poor coordination and communication; PAP; suffer; run from one office to another; spread over long distances; hills of Uttarakhand; hinder; development; hydropower projects; Uttarakhand; loss; land; home; submergence; compensated; displacement; livelihood; water source; religious places, van panchayat land; grazing ground and fodder; cremation ground; community life; culture; health and hygiene; poor support; delayed; social conflicts; protests; comprehensive; effective implementation.	R&R issues associated with hydropower projects in Uttarakhand	R&R issues and its impact on hydropower projects in Uttarakhand	Opportunities and challenges associated with hydropower projects in Uttarakhand	Redressal of R&R issues for the development of hydropower projects in Uttarakhand

R&R issues; hydropower projects; Uttarakhand; social conflicts; time delays; cost overruns, unviable; protests; work stoppage; litigation; displacement; inadequate compensation;	Impact of R&R issues on the viability of hydropower projects in Uttarakhand	R&R issues and its impact on hydropower projects in Uttarakhand	Opportunities and challenges associated with hydropower projects in Uttarakhand	Redressal of R&R issues for the development of hydropower projects in Uttarakhand
THEP; hydropower projects; loss; land; home; livelihood; food security; health; common property; grazing ground and fodder; water source; religious places; playground; community life; women security; PAP; complain; inadequate compensation; lack of facilities; resettlement locations; van panchayat land; cremation ground; culture; displacement; agricultural land; access; common property; agriculture; community; new location; uprooted; woman; head of joint family; loses her property rights; sons get R&R compensation; affecting; frequent changes in policy; bureaucratic and administrative mismanagement; run from one office to another; compensation; inadequate; comparison.	Impact of hydropower projects on various aspects of PAP	Effect of hydropower projects on PAP	What is the impact of hydropower projects on life of PAP?	Redressal of R&R issues for the development of hydropower projects in Uttarakhand

Uttarakhand; complex state; with respect to geography; stark difference; value of land; infrastructure facilities; economic opportunities; hilly; plain; areas; R&R; challenging; land for land compensation; R&R policy; ambiguous; circle rates; transparent; fair; compensation policy; market value; land; current; not effective; different; not much negotiation; should be allowed; unfair bargaining; hinders; development; hydropower projects; inadequate compensation; assessing; loss to home and land; PAP's; loss; livelihood; common property; community life; culture; must be considered; for fixing; compensation; woman; head of joint family; PAP; property rights; protected; existing; instead of; after comprehensive review; components of compensation; fixed.	Lacunas of current R&R policy	Current shortcomings of R&R policy and its implementation for hydropower projects in Uttarakhand	Issues in current R&R policy and its implementation that need to be addressed	Redressal of R&R issues for the development of hydropower projects in Uttarakhand
THEP; lack of comprehensive planning; lack of political will; uncertain policy environment; difficult; implement; R&R initiatives; involvement of multiple agencies; lack of communication and coordination; agencies; bureaucratic procedures; inadequate and delayed compensation; PAP; social conflicts; protests; hydropower projects; Uttarakhand; lack of comprehensive planning; bureaucratic and administrative mismanagement; R&R policy;	Experiences regarding the implementation of R&R initiatives for PAP of Hydropower Projects	Current shortcomings of R&R policy and its implementation for hydropower projects in Uttarakhand	Issues in current R&R policy and its implementation that need to be addressed	Redressal of R&R issues for the development of hydropower projects in Uttarakhand

implementation; sloppy; ambiguity; compensation; litigation; not allocated; transparent and fair; manner; negligible local administration support; unjust demands; R&R; costly; complain; running from one government office to another; claim; compensation; situation; worse; developer; messy; lack of local administration support; aggravate; situation; tough; stakeholders	Experiences regarding the implementation of R&R initiatives for PAP of Hydropower Projects iUttarakhand	Current shortcomings of R&R policy and its implementation for hydropower projects in Uttarakhand	Issues in current R&R policy and its implementation that need to be addressed	Redressal of R&R issues for the development of hydropower projects in Uttarakhand
Differences; R&R policy; compensation; home; land; transparent and fair; manner; PAP; preferred locations; market price; circle rates; land acquisition; jobs; family members; good jobs; government, public sector or reputed private company jobs; small local vendors; not desirable ; implementing agencies; provide; similar or better facilities; roads, electricity, water supply, schools, temples; new location; lacking in infrastructure facilities; best price; land compensation; impartation; employable skills; hardly doing; anything meaningful; developer; follow; process; job distribution; political and bureaucratic interferences; impossible; access to common property; playground and temple; displacement; shortage of space; missed; new locations; women rights; implementation; R&R initiatives; widow	Gap between current R&R policy and its implementation for Hydropower Projects in Uttarakhand	Current shortcomings of R&R policy and its implementation for hydropower projects in Uttarakhand	Issues in current R&R policy and its implementation that need to be addressed	Redressal of R&R issues for the development of hydropower projects in Uttarakhand

or unmarried women in joint families; property rights; displacement; transferred; male members; dependent				
Clear and easy to understand; R&R policy; transparent and fair; process; must not have; scope for modification; opens up the gate; bargaining; protests; litigation; land for land compensation; difficult and tedious to implement; way; monetary compensation; for all kind of losses; market linked; compensation; acceptable to all stakeholders; must account for; loss; land; home; livelihood; food security; health; access to common property; grazing ground and fodder; water source; religious places; playground; van panchayat land; cremation ground; community life; culture; consolidated; for all losses; PAP; land and property prices; market linked; circle rates; comprehensive R&R policy framework; after consulting all stakeholders; implement; not open to further negotiations; single window system; time bound services; one time	Suggestions regarding improvements (if any) in R&R policy associated with Hydropower Projects in Uttarakhand to make it more effective.	Suggestions for improving R&R policy and its implementation	How to improve R&R policy and its implementation for the development of hydropower projects in Uttarakhand	Redressal of R&R issues for the development of hydropower projects in Uttarakhand
Improved; implementation; transparent and fair; manner; necessary; clear and easy to implement; R&R policy; effective communication; good coordination; local administration agencies; R&R; R&R issues; employees; should not be transferred; mid-way; during	Suggested measures to address implementation issues and	Suggestions for improving R&R policy and its	How to improve R&R policy and its implementation for the	Redressal of R&R issues for the development of hydropower

R&R of project; new employee; requires time; understand each case; address the issues; need; develop; transparent and uniform; R&R framework; estimate; compensation; PAP; consolidated; monetary compensation; for all losses; norm; transparency and fairness; R&R initiatives; consistent; no scope; further negotiations and modifications; single window system; timely closure; consistent; clear; compensation mechanisms; minimize; bureaucratic and political interferences;	minimize gaps between R&R policy and implementation	implementation	development of hydropower projects in Uttarakhand	projects in Uttarakhand

Bio-data of the Author

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