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SOCIAL IMPACT ASSESSMENT STUDY FOR THE PURPOSE OF PROPOSED LAND ACQUISITION FOR SUNNI DAM HYDRO ELECTRICAL PROJECT (382 MW)

Under H.P. Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (Social Impact Assessment and Consent) Rules, 2015

Draft Report

(Volume A: Executive Summary & Main report)

PREPARED BY

PLAN Planning future.....

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Contents

Table of Contents

List of Tables

List of Figures

List of Maps

Abbreviations

BPL	Below Poverty Line
CA	Chartered Accountant
CHC	Community Health Centre
CPRs	Common Property Resources
CS	Company Secretary
CWC	Central Water Commission
Dept.	Department
EIA	Environmental Impact Assessment
FC	Financial Charges
FRL	Full Reservoir Level
Govt.	Government
GP	Gram Panchayat
GSI	Geological Survey of India
HEP	Hydro Electrical Project
HP Rules 2015	Himachal Pradesh Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (Social Impact Assessment and Consent) Rules, 2015
HPS	Hydro Power Station
HP SIAU	Himachal Pradesh Social Impact Assessment Unit
HR	Human Resources
IDC	Interest During Construction
IPH	Irrigation and Public Health Department
L 2	Level 2 Health Facility
L 3	Level 3 Health Facility
LADF	Local Area Development Fund
LHEP	Luhri Dam Hydro Electrical Project
NGO	Non-Governmental Organization
NHM	National Health Mission
OBC	Other Backward Classes
PAFs	Project Affected Families
PAPs	Project Affected People
PDFs	Project Displaced Families
PHC	Primary Health Centre
PMAY	Pradhan Mantri Awas Yojana
PWD	Public Works Department
RTFCTLARR Act 2013	The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013
R&R	Rehabilitation and Resettlement
SC	Scheduled Castes

SHEP	Sunni Dam Hydro Electrical Project
SIA	Social Impact Assessment
SIMP	Social Impact Management Plan
SJVN	Satluj Jal Vidyut Nigam
ST	Scheduled Tribes
TRT	Tail Race Tunnel

Glossary

- **Act** means: The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013(30 of 2013).

- **Administrator** means an Officer appointed for the purpose of rehabilitation and resettlement of affected families under sub-section (1) of Section 43 of the Act.

- **Affected Area** means such area as may be notified by the appropriate government for the purposes of land acquisition.

- **Affected Family includes:**

  i. A family whose land or other immovable property has been acquired.

  ii. A family which does not own any land but member(s) of such family may be agricultural labourers, tenants including any form of tenancy or holding of usufruct right, share-croppers or artisans or who may be working in the affected area, for three years, prior to acquisition of the land, whose primary source of livelihood stand affected by the acquisition of land.

  iii. The scheduled tribes and other traditional forest dwellers who have lost any of their forest rights recognized under the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 (2 of 2007) due to the acquisition of land.

  iv. Family whose primary source of livelihood for three years prior to the acquisition of the land is dependent on forests or water bodies and includes gatherers of forest produce, hunters, fisher folk and boatmen and such livelihoods is affected due to acquisition of land.

  v. A member of the family who has been assigned land by the State Government or the Central Government under any of its schemes and such land is under acquisition.

  vi. A family residing on any land in the urban areas for preceding three years or more prior to the acquisition of the land or whose primary source of livelihood for three years prior to the acquisition of the land is affected by the acquisition of such land.

- **Agricultural Land** means land used for the purpose of:
  i. Agriculture or horticulture.
  ii. Dairy farming, poultry farming, pisciculture, sericulture, seed farming

breeding of livestock or nursery growing medicinal herbs.

iii. Raising of crops, trees, grass or garden produce; and

iv. Land used for the grazing of cattle.

- **Below poverty line or BPL Family** refers to families falling below the poverty line as defined by the Planning Commission of India, from time to time, as well as those included in the BPL list of Himachal Pradesh.

- **Central Government** refers to Government of India.

- **Collector** means the collector of a revenue district, and includes a deputy commissioner and any officer especially designated by the appropriate Government to perform the functions of a collector under the Act 2013.

- **Commissioner** means the commissioner for Rehabilitation and Resettlement appointed under sub-section (1) of section 44 of the Act 2013.

- **Compensation** refers to the amount to be paid as compensation under various provisions of the Act 2013, for private property, structures and other assets acquired for the project, including rehabilitation and resettlement entitlements.

- **Cost of acquisition** includes:

(i) Amount of compensation, which includes solatium, any enhanced compensation ordered by the –Land Acquisition and Rehabilitation & Resettlement Authority or the Court and interest payable thereon and any other amount determined as payable to the affected families by such authority or court.

(ii) Demurrage to be paid for damages cost to the land and standing crops in the process of acquisition.

(iii) Cost of acquisition of land and building for settlement of displaced or adversely affected families.

(iv) Cost of development of infrastructure and amenities at the resettlement areas.

(v) Cost of Rehabilitation and Resettlement as determined in accordance with the provisions of the Act 2013.

(vi) Administrative cost:

A. For acquisition of land, including both in the project site and out of project area lands, not exceeding such percentage of the cost of compensation as may be specified by the appropriate Government.

B. For rehabilitation and resettlement of the owners of the land and other affected families whose land has been acquired or proposed to be acquired or other families affected by such acquisition.

(vii) Cost of undertaking the Social Impact Assessment study.

- **Displaced Family** means any family, who on account of acquisition of land has to be relocated and resettled from the affected area to the resettlement area.

- **Family** includes a person, his or her spouse, minor children, minor brothers and minor sisters dependent on him:
  Provided that widows, divorcees and women deserted by families shall be considered as separate families.

- **Land** includes benefits to arise out of land, and things attached to the earth or permanently fastened to anything attached to the earth.

- **Land acquisition** means acquisition of land under The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act,2013.

- **Landless** means such person or class of persons who may be: Considered or specified as such under any state law for the time being in force; or In a case of landless not being specified under clause (i), as may be specified by the appropriate Government;

- **Land owner** includes any person-

(i) Whose name is recorded as the owner of the land or building or part thereof, in the records of the authority concerned; or

(ii) Any person who is granted forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 (2 of 2007) or under any other law for the time being in force; or

(iii) Who is entitled to be granted Patta rights on the land under any law of the State including assigned lands; or

(iv) Any person who has been declared as such by an order of the court or authority;

- **Marginal farmer** means a cultivator with an un-irrigated land holding up to one hectare or irrigated land holding up to one-half hectare.

- **Market value** means the value of land determined in accordance with Section 26 of the Act 2013.

- **Notification** means a notification published in the Gazette of India or, as the case may be, the Gazette of a state and the expression "notify" shall be construed accordingly.

- **Project** means the Sunni Dam Hydro Electrical Project (382MW).

- **Public purpose** means the activities specified under sub-section (1) of Section 2 of the Act 2013.

- **Rehabilitation and Resettlement (R & R) means** carrying out rehabilitation and resettlement as per RFCTLARR Act 2013.

- **Requiring Body** here means Satluj Jal Vidyut Nigam (SJVN) Limited.

- **Scheduled Areas** means the scheduled areas as defined in section 2 of the provisions of the Panchayats (Extension to the Scheduled Areas) Act, 1996 (40 of 1996).

- **Small farmer** means a cultivator with an un-irrigated land holding up to two hectares or with an irrigated land holding up to one hectare, but more than the holding of a marginal farmer.

- **Social Impact Assessment** means an assessment made under subsection (1) of Section 4 of the Act.

- **Social Impact Management Plan** means the plan prepared as part of Social Impact Assessment Process under sub-section (1) of Section 4 of the Act.

- **State Government or "Government"** means the Government of Himachal Pradesh

- **Tenants** are those persons having bonafide tenancy agreements for three years prior

to the acquisition of the land, with a property owner with clear property titles, to occupy a structure or land for residence, business or other purposes.

- **Vulnerable groups** include persons such as differently abled, widows, and women headed household, persons above sixty years of age, Scheduled Caste and Scheduled Tribes and other groups as may be specified by the State Government.

- **Women Headed Household** means a family headed by a woman and does not have a male earning member. This woman may be a widow, separated or deserted woman.

Executive Summary

Project and Public Purpose

Sunni Dam Hydro-Electrical Project also known as Luhri Stage-III is a 382 MW run of river type scheme and a part of multi-stage development of Luhri HEP. The project is to harness the hydel potential of Satluj River between Rampur and Kol Dam Hydro-electric projects.[1]

The Project is proposed to generate 1,369 MU of electric energy in a 90% dependable year. Sunni Dam Hydro Electrical Project was proposed to harness the hydel potential of river Satluj. The project envisages construction of a concrete gravity dam of ±71m high above river bed level across river Satluj and underground power house on the right bank.

Himachal Pradesh is blessed with vast hydroelectric power potential in its five major rivers. Government of Himachal Pradesh intends to acquire the land at Bathora, Grehna, Kothi, Ogli, Pandoha, Talah, Jhunjan, Majrog, Bharara, Jaishi, Khera, Lunnsu and Malgi villages of Shimla district and Balog, Beludhak, Bhaunra, Fafan, Jakleen, Kharyali and Parlog villages of Mandi district for construction of this project.

The strategy followed in Himachal Pradesh for exploitation of hydroelectric power is to produce as much energy as possible with minimum cost and with minimum environment negative impacts. The speedy exploitation of hydroelectric power potential will definitely improve the economic health of the State because 12 percent free power plus 1.5% LADF (Local Area Development Fund) of the project cost, on all new installations will increase the resources of the state to a significant extent. The need for the project also arises from the need, to fulfill a steady increase in peak electricity demand and the growing energy deficit in the Northern Region.[2]

As per Section 2 sub-section 1(b) of the RTFCTLARR Act, 2013 the Sunni Dam Hydro-Electrical Project (382 MW) is well justified under the definition of infrastructure projects (energy generation) for public purpose.

Location

Proposed project is located on Satluj river basin in Himachal Pradesh with District Shimla falling on its left Bank and District Mandi on its right bank.
The dam is located near Khaira Village (District Shimla) at Longitude 77°12’39” E and Latitude 31°14’53” N.

[1] (SJVN, Inception for Detailed Project Report of Sunni HEP (382 MW), 2018)
[2] (Department of MPP and Power, 2019)

Size and attribute of land acquisition

The total land requirement for the Project is 44,03,889 sq. m. Out of total, 38,71,915 sq. m is Forest Land and 5,31,974 sq. m is Private Land. It covers a total of 20 villages falling in 9 Gram Panchayats under two districts namely Shimla and Mandi, three sub-divisions namely Kotgarh/Kumarsain, Karsog and Shimla and three tehsils namely Sunni, Kumarsain and Karsog. There are a total of 1034 families with a total population of 4,683 as per the primary survey conducted out of which 1847 are titleholders of the land getting acquired for the project.

Out of the total 1847 title holders of the land being acquired, 1045 will loose 100% of their land. Most of the PAPs have additional land either in the same panchayat or in some other panchayat. Thus, none of them are completely dependent on the land which is getting acquired which is why they have preferred to have cash as compensation. Also 93% of PAPs reported that the remaining parcel of the land is still usable after acquisition. 141 of PAPs are losing their houses in acquisition and they have demanded for project assisted relocation preferably anywhere in the same gram panchayat.

Further information on land being acquired and PAPs have been discussed in detail under chapter 3 and 4.

Alternatives considered

The Sunni Dam hydro electrical project is part of The Luhri Project which contemplates construction of threedams in three stages viz. Luhri Hydro-Electric Project Stage-I (210 MW), Luhri Hydro ElectricProject Stage-II (163 MW) and Sunni Dam Hydro-Electrical Project (382 MW).

On the downstream of Sunni Dam HEP lies the 800 MW Kol Dam HEP.On the upstream of the Luhri project lies the 412 MW Rampur HEP which in-turn utilizes water discharged from the further upstream 1500 MW Nathpa-Jhakri project.

Conclusively, there are currently 6 HEPs commissioned consecutively on the Satluj river between Nathpa-Jhakri and Kol Dam over a stretch of approximately 250 km. Since the Sunni Dam HEP is part of the Luhri project and lies between the Kol Dam and Luhri Stage-II HEP, therefore, leaving limited scope for any alternative location for the project. However, alternatives regarding the Layout of the project was studied in detail to finalize the best location for Dam and power house with minimal displacement and also keeping in mind the engineering parameters.

The following alternatives studies were carried out to explore the selection of Project layout:

- **Alternative 1:** Dam and surface toe Power House at left bank.

- **Alternative 2:** Dam and underground Power house with 2D cover to Power House at right bank.
- **Alternative 3:** Dam and surface toe power house at right bank.
- **Alternative 4:** Dam and underground Power House with 4D cover to Power House at right bank.

After carefully studying each alternative finally Alternative-4 with temporary diversion tunnel has finally been selected. The details of alternatives that were studied can be found under ***section1.4: examination of alternatives***

Social Impacts

Acquisition of land proposed for the project will have a direct and indirect bearing on livelihood, employment, income, production, health, well-being and quality of life of the community, socio-cultural systems and environment.

There is a general optimism for the upcoming Sunni HEP project in the area. The study found that 91% of the primary stakeholders were willing to surrender their land for acquisition provided appropriate compensation is paid and only 8% resisted the acquisition process. During the FGDs with Panchayats, the villagers and secondary stakeholders were also found to have a very positive opinion towards the project as it would bring an overall development to the entire area in terms of infrastructure development (both Social and Physical) and increase in employment and business opportunities. Also, they anticipated the increase in land prices of the area which would be a beneficial factor for them.

However, they were also apprehensive about the negative impacts that may rise from the project if not properly mitigated. There were concerns regarding the rise in disputes among stakeholders for receiving the compensation and that the vulnerable groups may be left out or be cheated. Another possible impact is that on receiving the compensation amount, there would be a change in the financial condition of the PAFs which in turn would alter their purchasing capacity and would also increase the risk of fund miss-management as many of the landowners are not properly educated, especially regarding financial management. The project area may also experience rise in cases of frauds and cheats once the compensation amount is distributed. There are also chances of changes in cultural practices and traditions because of changes in the spending pattern.

Due to the acquisition, there would also be loss of public infrastructure like ropeways, bridges, cremation grounds, roads, existing irrigation facilities including IPH Infrastructure and also loss of common property resources like drinking water sources, Gharats, forests, grazing grounds etc.

A total of 78 structures are getting acquired for the Sunni HEP. These include 38 residential structures, 1 school in village Parlog of Mandi district, 3 pumphouses, 12 Gharats, 1 bridge in Malgi village of Shimla district, 6 ropeways, 9 electric poles, 3 water taps, 2 handpumps and 3 water supply pipelines. The details of the loss to infrastructure and assets has been discussed in chapter 4. The PAPs as well as the villagers were concerned about how alternates to public infrastructure and common property resources would be provided to them by the acquiring body such that it would not hamper their daily routine. The villagers have dependency on the adjoining grazing land and forest for cattle fodder and firewood.

During the construction phase of the project, the stakeholders had a positive outlook towards the project as it would generate good direct and indirect employment and business opportunities for them. Due to in migration they would witness increased consumption of goods which would benefit the local economy. However, they also showed concerns regarding the in migration of labour for the project as it would raise the pressure on existing infrastructure like health facilities, educational facilities, roads etc. There may be chances of rise in conflicts among the locals and the in-migrants and the stakeholders also opined that there are chances in rise in crime rates and anti-social activities in the area because of migration. The area may also witness cultural mixing. Further, there would also be problem of traffic, air and noise pollution because of the heavy transport vehicles, material transport and construction. The area may also witness rise in health problems due to increased pollution levels.

During the post construction phase, the stakeholders opined that the area may witness reduced pollution and better living environment. Due to funds like LADA the area would also witness further development. A cultural stability may also be witnessed during this stage. However, they also highlighted some negative impacts which may arise during this phase such as, due to drop in construction activities there would be less employment and business opportunities for locals and may also lead to unemployment to the temporary work force involved in the project.

The area may witness sudden fall in local economy and low consumption of goods and services due to out migration of the temporary workers involved in construction stage. Consequently, People may face difficulty in maintaining the living standards set forth due to the increased income level during construction phase.

Mitigation measures

To cope up with the possible challenges and difficulties, the following mitigation measures have been proposed:

➢ Social Measure

1. If there is any dispute between the stakeholders, then this dispute should be resolved first and make sure that the compensation is given to the legal owner.
2. There is a demand by the local people of Karyali Panchayat that Since the Reservoir is being constructed at Karyali Gram Panchayat, The Villagers demand the project Name to be Changed from Sunni HEP to Jaishi-Karyali HEP.
3. Provide fund for Construction/ upgradation of temples of local deities in the villages.
4. Construction of Community halls in all villages and Panchayats of the project area
5. Construction, repair and up gradation of building/structures used as Mahila Mandal, Yuvak Mandal Gram Panchayat Offices.
6. Efforts should be made for the upliftment of women and marginal sections like Backward Classes categories by ensuring their participation in decision making and enhancing their traditional skills and by developing new skills
7. To provide job for family members for Project affected persons and families
8. Promotion of sports through construction of sports complexes and provide training to youth
9. Assistance/ Loan from other ongoing development scheme

➢ Infrastructure measures

1. Upgradation of village roads and link roads to all weather pucca roads throughout the gram Panchayats of the project area.
2. Construct proper drainage facilities to all panchayats of the project area
3. Provide streetlights throughout the Gram panchayats of the project area.
4. Provide electricity at special subsidised rates to all panchayats of the project area.
5. Provision of health facilities such as PHCs, Dispensaries, hospital, Ambulance and Ambulance road to villages and panchayats of the project area.
6. Provide Irrigation facilities such as lift irrigation in all villages and panchayats of the project area
7. Provision of drinking water facilities in all villages and panchayats of the project area.
8. **School and Scholarships –**construction of schools to impart quality education for the children and have special scholarship programs for students of the PAFs in the affected area
9. Technical education institutions and vocational training centres for the project area and surroundings
10. **All weather Roads –** As per the SIA team's observation and demand of the villagers, All Weather Roads and bridges may be built and maintained in the area.

Some of them are suggested below as per the survey and FGDs-

- Metalled/Pucca Road from Khera to Ogli, (Chebri Panchayat)
- Metalled road from Khera to Sheel. (Chebri Panchayat)
- Metalled/Pucca Road from Panchayat Bhawan to Serkadi (Chebri Panchayat)
- Metalled/Pucca Road from Khera to Ropa. (Chebri Panchayat)
- Metalled/Pucca Road from Khera to Cremation Ground. (Chebri Panchayat)
- Construction of 6 km Metalled Road from JhunJhun to Lambidhar (Mogra Panchayat)
- Construction of 8 km Metalled Road from JhunJhun to Mogra (Mogra Panchayat)
- Construction of 5 km Metalled Road from Parakhra to Kundadhar (Mogra Panchayat)
- Construction of Link Road from main Road to Kothi, Malgi, Dharu and Tulah.(Ogli Panchayat).

11. **Bridge along with the river -**
    The following bridges are suggested -
- Construction of Bridge/river crossing from Jhun-jhun to Suket (Mandi) (Mogra Panchayat.
- Bridge connectivity to Bindla Panchayat.
- Since at Ogli Panchayat the existing ropeway used by villagers for river crossing is coming under acquisition, a bridge can be constructed as an alternate.

12. Provide alternate cremation grounds wherever they are coming under acquisition.
13. **Drainage System-** Proper drainage facilities in the affected gram Panchayats need to be provided.

➢ Resettlement Measures

1. For PAFs getting displaced and also for land looser who opt for land as compensation for acquired land, the requiring body should provide land preferably in the same Gram Panchayat or in neighbouring Gram Panchayat.
2. Appropriate compensation to be provided to PAFs whose houses are being acquired and additional compensation for the inconvenience caused due to relocation under relevant sections of the act.
3. Many of the Panchayats feel that the circle rates of land for computation of compensation is very low. Therefore, have requested to revise and increase the circle rates of land before computation of compensation.

➢ Rehabilitation and livelihood restoration Measures

1. Business opportunities for local villagers in upcoming project and otherwise such as contracts for construction, supply and transportation.
2. Vocational training centres for income restoration.

3. Provide Skill upgradation trainings to the working-class population under various government schemes
4. Job opportunities in upcoming HEP project for project affected villagers.

➢ Environmental Measures

I) Afforestation and plantation in the project area

II) Measures for reducing noise pollution and vehicular traffic

Noise pollution and traffic may be minimalized by:

a) Defining specific hours of the day for entry of heavy transport vehicles.
b) Regulating the number of heavy vehicles that can enter/leave the project site in one day.
c) Strict instructions to the drivers to minimize the use of horns.
d) Complete ban on pressure horns on transport vehicles.
e) Staggered timings of entry and exit of transport vehicles evenly throughout the day in order to avoid unnecessary overload on the roads and traffic situations.
f) Strict instructions to drivers of heavy vehicles to give regular overtake passes on priority to small vehicles and adhering to speed limits.

III) Measures suggested to reduce Air Pollution

Air pollution arising due to dust during transportation, construction, excavation, mining and dumping may be mitigated by affectively covering the construction site, transport vehicles such as trucks, tippers etc. mining & dumping sites. Also, regular water spray throughout the day in the project area will also help in reducing air pollution.

Villagers at Chebri Panchayat have requested to shift the dumping site away from the village as they are worried about the air pollution that they would have to face from it.

IV) Measures suggested to reduce Water Pollution, Water borne Diseases and increased humidity.

1) Water pollution may be minimalised by strictly assuring that during excavation and mining minimalistic dumping occurs in the river.
2) The dumping site should be created away from the river banks in order to avoid the dump entering the river especially during rains and monsoons.
3) The storage units of construction material especially sand and aggregate should also be place away from the river banks.
4) Standing water especially after creation of reservoir should be sprayed regularly to avoid water borne diseases.

5) Increased humidity due to the reservoir may be minimalized by afforestation. However special care should be taken to plant local trees instead of alien decorative trees. Also, only those varieties of trees should be planted that reduce humidity and help keep surroundings comparatively cooler

V) Measures to reduce Risk of Land Slides Due to increase in Water Levels

The competent authorities may make sure to build embankment walls/retaining walls etc. at vulnerable locations in order to check the river course and minimalize risk to landslides due to increased water levels in the river.

➢ Other Mitigation Measures

A) Promotion of Tourism: The area can be developed as a tourist destination as well as hub for water related activities /sports, rafting, camping etc.

B) Promotion of Fisheries: The project will provide congenial conditions for development of fisheries. Training can also be imparted in Pisciculture to the interested persons in the affected area along with issuing of fishing license.

C) Promotion of Animal Husbandry will be helpful to small and marginal farmers for increasing their income. A milk cooperative can be promoted in the area which will benefit not only the project affected families but also the entire area.

D) Forming and Strengthening Self-Help Groups (SHGs) to provide opportunities for women to come together and form SHGs and strengthen the existing ones with proper training and to facilitate them to earn their livelihoods through the credit offered under various schemes. Handicraft, dairy, shawl making, stitching and embroidery etc. can be introduced.

E) Institutional linkages and skill upgradation for income restoration: Requiring body can play a proactive role to mobilize affected family members to get some vocational/ skills training opportunities and also support in establishing forward and backward linkages for raw materials, inputs, besides marketing and credit facilities.

F) Project-based Employment: Preference to Project-related employment opportunities such as work under the project construction, maintenance, supply and transportation contracts can be given to the affected families.

G) Local Area Development Committee

In order to utilise the Local Area Development Fund (LADF) properly in the project area, a Local Area Development Committee (LADC) can be formed comprising various stakeholders such as government departments, members from project affected families, requiring body officials etc.

H) Revision of Circle rates

Many of the PAPs and PAFs of the villages falling in Mandi District and also of the Mogra Panchayat of Shimla District feel that the existing circle rates of their land is very low. They have therefore requested to revise and increase the circle rates before the compensation is calculated.

I) Organizing Awareness Camps & Financial Literacy Camps for PAPs and PAFs for better financial management.

Assessment of social costs and benefits

The estimated compensation for the proposed acquisition of 5,31,974 sq. m land works out to Rs 9,16,61,331.

For 14,824 fruit bearing trees and 26,691 non-fruit bearing trees under impact of acquisition, a total compensation of Rs 1,54,193,000 is estimated.

Rehabilitation and resettlement cost of Rs.2,85,76,000 is estimated for the families living in 38 residential structures going under acquisition.

Thus, after including 10% miscellaneous cost, the total cost for land acquisition including R&R is estimated as Rs. 114,21,02,233 /-.

On analysis, the social costs and benefits of the project at large clearly outweigh the social costs of the project affected families. The compensations provisions to be paid under the RTFCTLARR Act, 2013 keep in mind that the losses and inconvenience caused to the PAPs and PAFs getting affected by the project are generously compensated. The Act not only compensates for the land that is being acquired but also for the Structures and assets attached to it. Further the Act compensates for the standing crops and trees (both fruit and non-fruit bearing). In-case of displacement, the act provides additional compensation as subsistence and transportation allowance for relocation. For loss of livelihood, the act provides to compensate the PAP for re-establishing his livelihood either by providing him alternate employment source or one-time assistance.

During the study it was observed that the project has a general acceptance in the area. In-fact most of the Primary and secondary stakeholders are looking forward for the project to be implemented as it would bring an overall development in the area. Even from the survey 91% of the primary stakeholders are willing to give their consent for the acquisition provided their issues are resolved. The issues have been discussed under social Impacts and mitigation measures. During FGDs the panchayats were also in favour of the project as they were optimistic about the development of their gram panchayats through funds like LADF and CSR.

The people in the affected area are hopeful about the increase in employment opportunities, land price, and increased scope for small and medium business ventures. They are also expecting better road network and drainage facilities, higher frequency and better-quality transportation services, improved infrastructural facilities and the area will become a landmark in the HEP Map of Himachal Pradesh.

On the Macro level, the project compliments the strategy followed by the Govt. of Himachal Pradesh for exploitation of hydroelectric power to produce as much energy as possible with minimum cost and with minimum environment negative impacts. The speedy exploitation of hydro-electric power potential will definitely improve the economic health of the State because 12 percent free power plus 1.5% LADF (Local Area Development Fund) of the project cost, on all new installations will increase the resources of the state to a significant extent. The need for the project also arises from the need, to fulfill a steady increase in peak electricity demand and the growing energy deficit in the Northern Region.[3]

It can therefore be concluded that the project benefits will be extended to the people of the affected area, district and state. If the proposed Mitigation Plan is followed, it will help mitigate the social impacts by minimizing the negative impacts and amplify the positive impacts, thereby over shadowing the adverse social costs.

[3] (Department of MPP and Power, 2019)

1 Detailed Project Description

1.1 Project Background

Sunni Dam HEP is a run of river type scheme and a part of multi-stage development of Luhri HEP. The Project was conceived in the year 2008 and was proposed to be constructed in three stages without constructing tunnels by Satluj Jal Vidyut Nigam Ltd. a joint venture of Govt. of Himachal Pradesh and Govt. of India. The project contemplates construction of three dams in three stages viz. Luhri Hydro-electric Project Stage-I (210 MW), Luhri Hydro-electric Project Stage-II (172 MW) and **Sunni Dam Hydro-Electrical Project (382 MW)**. The project is to harness the hydel potential of Satluj River between Rampur and Kol Dam Hydro-electric projects.[4]

The project is situated near Khaira village in Shimla and Mandi districts of Himachal Pradesh. The Project is proposed to generate 1,369 MU of electric energy in a 90% dependable year. Sunni Dam Hydro Electrical Project was proposed to harness the hydel potential of river Satluj. The project envisages construction of a concrete gravity dam of ±71m high above river bed level across river Satluj near Khaira village and underground power house on the right bank.

1.1.1 Inter State/ International Aspects

The project lies in the Satluj basin, which is a part of Indus Basin, and is to be governed by relevant provision of Indus Water Treaty signed between India and Pakistan in 1960. Since Satluj is an Eastern flowing river of Indus Basin hence India has exclusive right over its water sharing. Hence, Inter State/ International aspects stands cleared.[5]

[4] (SJVN, Inception for Detailed Project Report of Sunni HEP (382 MW), 2018)
[5] (SJVN, Inception for Detailed Project Report of Sunni HEP (382 MW), 2018)

1.1.2 Developers Background

SJVN is a well-established ISO 9001 and ISO 14001 certified company. It is multi-disciplinary organization and has acquired sufficient expertise for planning and executing Hydro Power Projects. Beginning from a single hydropower project company, SJVN today has a footprint in a Hydroelectric Projects in Himachal Pradesh, Uttrakhand and in the neighboring countries of Nepal and Bhutan.

SJVN Limited, a Mini Ratna, Category-I and Schedule – 'A' CPSE under administrative control of Ministry of Power, Govt. of India, was incorporated on May 24, 1988 as a joint venture of the Government of India (GOI) and the Government of Himachal Pradesh (GOHP). SJVN is now a listed Company having shareholders pattern of 62.44 % with Govt. of India,26.85% with Govt. of Himachal Pradesh and rest of 10.71 % with Public.[6]

1.1.2.1 Subsidiaries

- **SJVN Arun -3 Power Development Company Pvt. Ltd**. (SAPDC)–Fully owned subsidiary incorporated in Nepal for implementation of 900 MW Arun-3 Project in Nepal.
- **SJVN Thermal Private Limited** –Fully owned subsidiary incorporated for execution of 1320 MW Buxar Thermal Power Project in Bihar.

1.1.2.2 Joint Ventures

- **Cross Border Power Transmission Company Limited (CPTC)**-To construct and maintain 86 km long, 400 kV D/C transmission line from Muzaffarpur Nepal connection point and a bay extension at Muzaffarpur Sub Station.
- **Kholongchhu Hydro Energy Limited**-for execution of 600 MW Kholongchu Hydro Electric Project in Bhutan. Infrastructure works viz roads and bridges for the project are in progress and bids invited for main civil works.

1.1.2.3 Financial Performance

The total Income of the Company for the FY 2017-18 was Rs. 2587.07 Crore and earned profit after Tax at Rs.1224.88 Crore. SJVN has paid total dividend (excluding Dividend Tax) of Rs. 864.56 Crore for FY 2017-18.

SJVN – A Mini Ratna Company

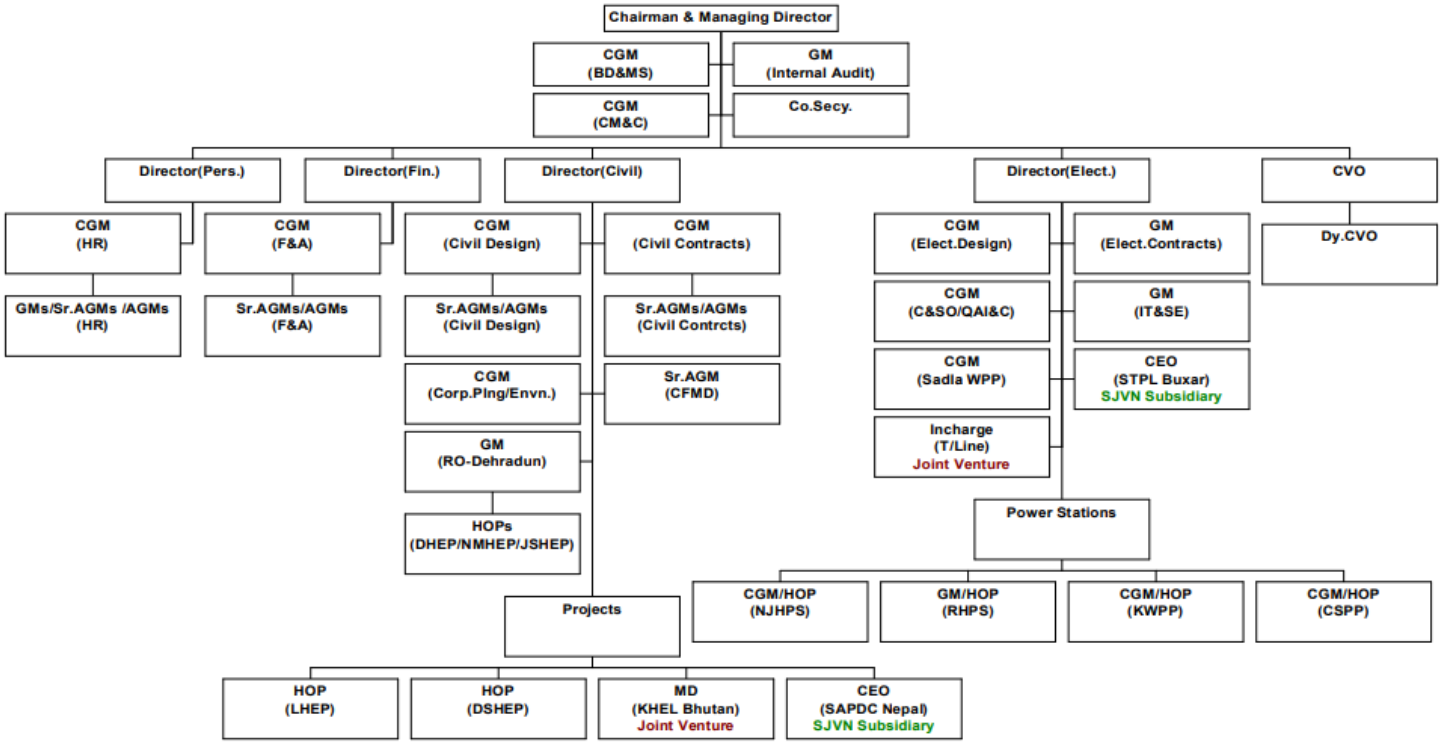
SJVN Limited was conferred with "Mini Ratna: Category-I" status by the Government of India in the year 2008.

[6] (Company Profile: SJVN Limited, 2019)

SJVN – Schedule 'A' Company

Meeting the criteria laid down by the Department of Public Enterprises, SJVN on qualifying both qualitative and quantitative parameters was upgraded as Schedule 'A' PSU in 2008.

Figure 1: Organizational Structure-SJVN



Note:
•Projects shall mean Projects in Investigation, Pre-Construction and Construction Stage.

**Source: SJVN Company Profile.*

1.2 Project Rationale

Himachal Pradesh is blessed with vast hydroelectric power potential in its five major rivers. The Government of Himachal Pradesh intends to acquire the land at 13 villages of Shimla and 7 villages of Mandi district each for construction of Sunni Dam Hydro Electrical Project (382MW) in order to harness optimal hydel potential river of Satluj. This is run of river type development proposed scheme and SJVN Limited is the implementing agency for the same.

The strategy followed in Himachal Pradesh for exploitation of hydroelectric power is to produce as much energy as possible with minimum cost and with minimum environment negative

impacts. The speedy exploitation of hydroelectric power potential will definitely improve the economic health of the State because 12 percent free power plus 1.5% LADF (Local Area Development Fund) of the project cost, on all new installations will increase the resources of the state to a significant extent. The need for the project also arises from the need, to fulfill a steady increase in peak electricity demand and the growing energy deficit in the Northern Region.[7]

As per Section 2 sub-section1(b) of the RTFCTLARR Act, 2013 the Sunni Dam Hydro-electric Project (382 MW) is justified well under the definition of infrastructure projects (energy generation) for public purpose.

Therefore, in exercise of powers conferred by rule 3 of the Himachal Pradesh Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (Social Impact Assessment and Consent) Rules, 2015, a social impact assessment study is to be conducted for the land which is being acquired.

1.3 Project Details

1.3.1 Project Size

The project envisages construction of a concrete gravity dam of ±71 m high above river bed level across river Satluj near Khaira village and underground power house on the right bank. Total cost of construction is estimated to be 2911.85 crore. Given below are the details of design, dimension and capacity of various components of the project:

Table 1-1: Sunni Dam HEP Project Size and Design

S. No.	Component	Location	Design	Dimensions	Capacity
1.	River Diversion Works	Left side of river valley	Horse shoe shaped	10 m dia, Height: 1. Upstream cofferdam: ±18.80 m 2. Downstream cofferdam: ±9.20 m	773 cu.m/sec
2.	Dam		concrete gravity 6 integral gated spillways of 8.5m (W) X	Height: ±71m Foundation level: ±623m	15473 cu.m/.sec Gross pondage: 82.5 MCM

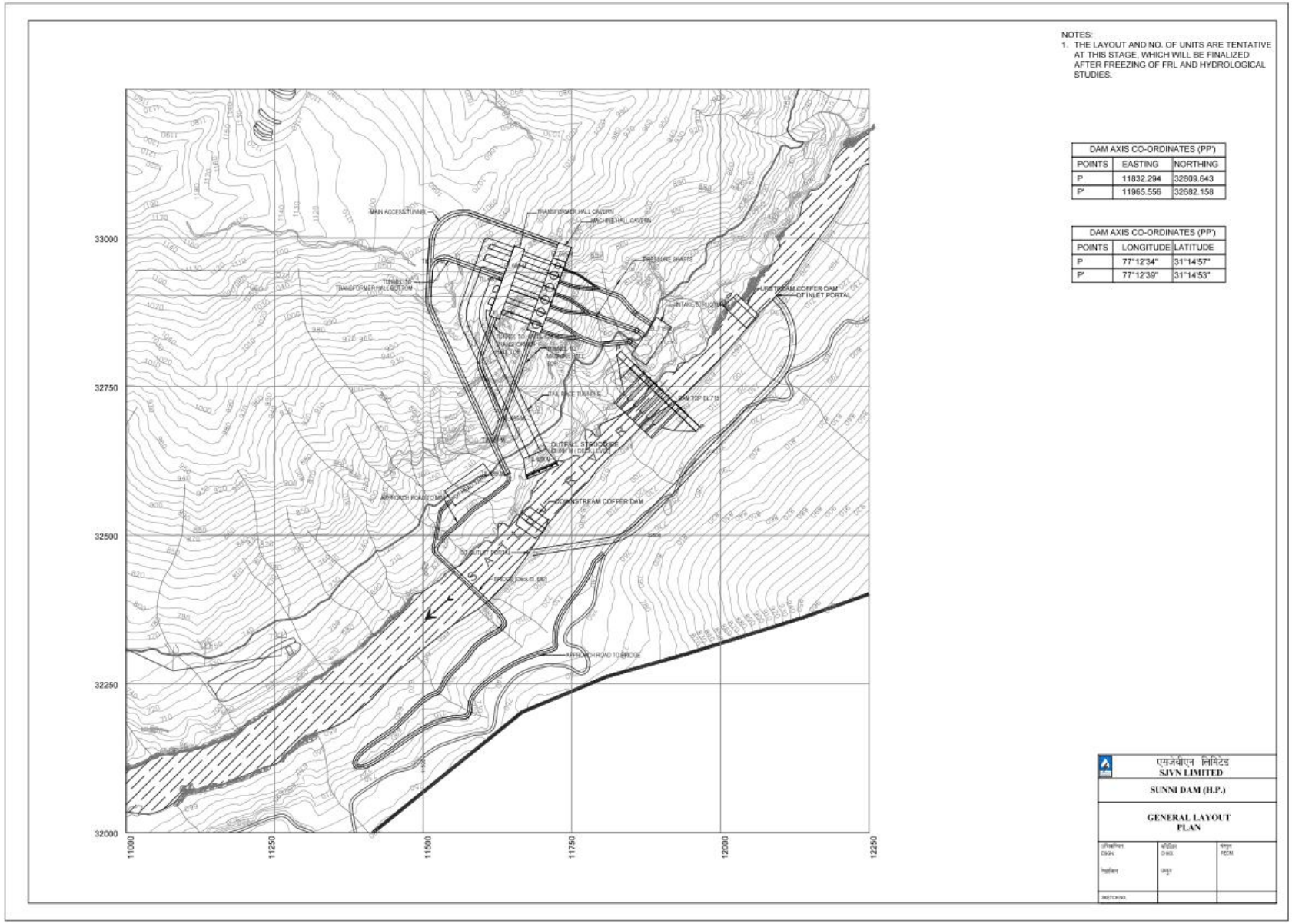
[7] (Department of MPP and Power, 2019)

S. No.	Component	Location	Design	Dimensions	Capacity
			16.0m (H)	The Full Reservoir Level:712.0 m Minimum Draw Down Level: El.709.50m Dam Top Length: 185m Length of dam at top: 178m	Live storage: 7.9MCM
3.	Intake structure	Right bank of river	With trash screens Intake gates with stoplog gates	Centre line of intake at ±696.26m	744.07 cu.m/sec Intake-1 and 2: 270.8 cu.m/sec each Intake-3: 171.27 cu.m/sec
4.	Pressure shaft		3 pressure shafts		726.95 cu.m/sec
5.	Power House and Transformer Hall	Underground on right bank of river	The power house cavern is ±220m inside the hill top cover of ± 226m. Minimum 50.0 m rock cover between transformer hall and machine hall	Power house: 171.0m (L) x 22.5 m (W) x 50.5 m (H) Transformer hall cavern: 176.0m (L)x17.5m(W)x27m(H)	382 MW (4 x 73 MW – Main Units, 1 x 73 MW+ 1 x 17 MW- Environmental Units)
6.	Tail Race Tunnel and Outfall Structure		Horse shoe shaped	9.0m dia Length of tail race tunnel: ±280.0m Crest level of El 647.2 m	
7.	Access Tunnels		A maximum slope of 1 in 15 and making them as straight as possible for ease of maneuvering large vehicles		
8.	Main		D-shaped Maximum	8.5m dia,	

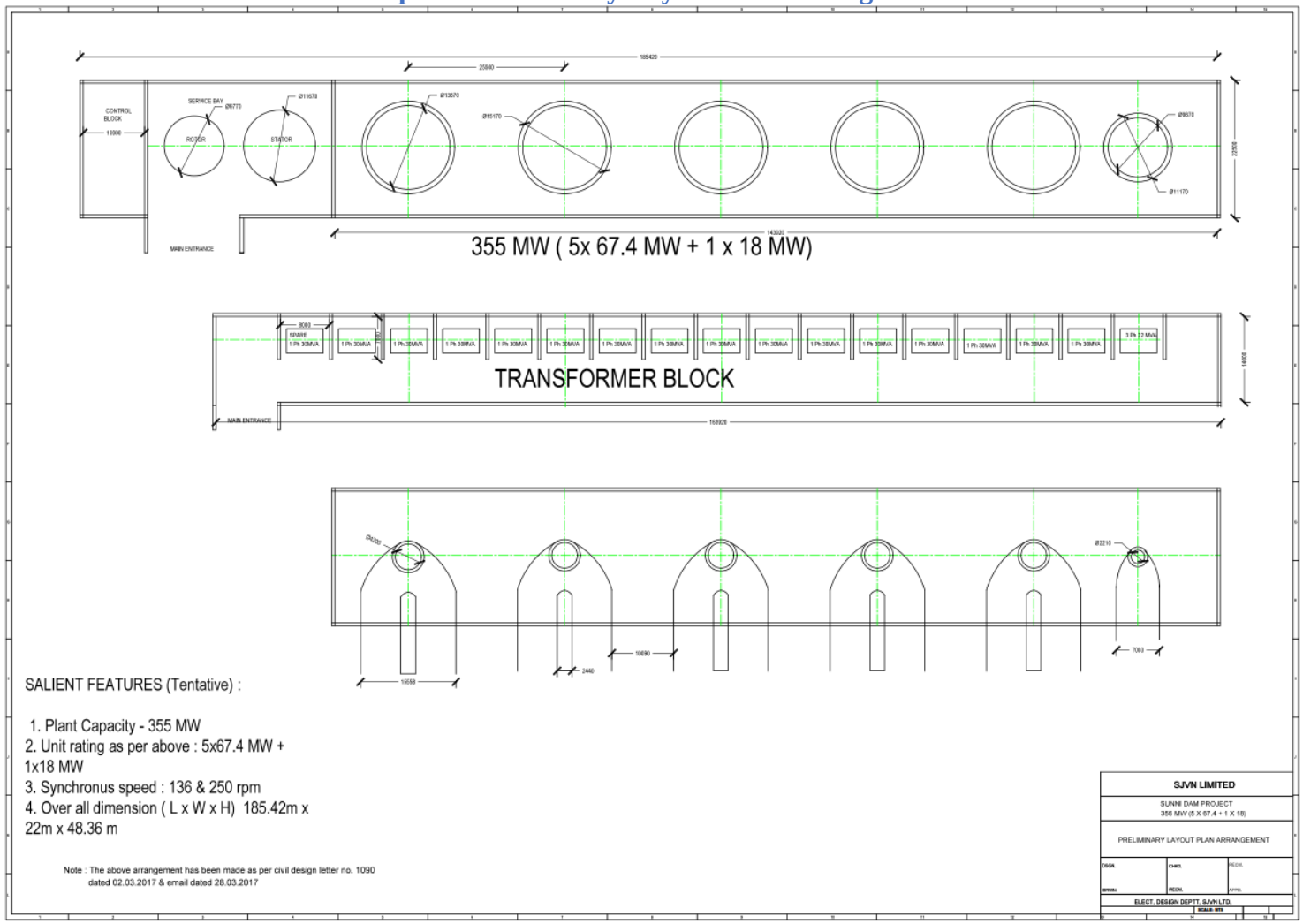
S. No.	Component	Location	Design	Dimensions	Capacity
	Access Tunnel		slope of 1 in 16. An enlarged section will be created at the junction between the tunnel and the machine hall loading and erection bay to form a parking area	590 m long	

**Source: Inception Report for Sunni HEP DPR*

Map 1-1: General Layout Plan, Sunni Dam



Map 1-2: Preliminary Layout Plan Arrangement



1.3.2 Location

Proposed project is located on Satluj river basin in Himachal Pradesh with District Shimla falling on its left Bank and District Mandi on its right bank.

The dam is located near Khaira Village (District Shimla) at Longitude 77°12'39"E and Latitude 31°14'53"N. On the upstream of the project lies the 412 MW Rampur HPS, which utilises water discharged from the further upstream 1500 MW Nathpa-Jhakri project.

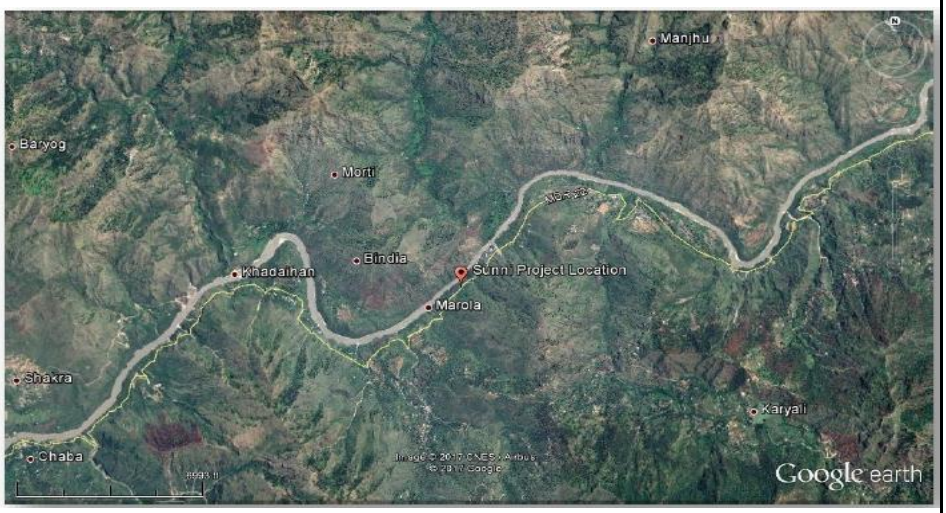
On the downstream of Sunni Dam Hydroelectric project lies the 800 MW Kol Dam HPS (FRL 642 m). In between Rampur HPS and proposed Sunni Dam Project, Luhri HEP Stage-I (nearly 50 km upstream) and Luhri HEP Stage-II (Between LHEP-I & Sunni Dam) are also proposed. [8]

The Following Map provides the location and extent the project. Table 1-2 provides the list of villages falling in Shimla and Mandi District where the Land Acquisition is taking place.

Table 1-2: List of Project Villages

S. No	Shima District	Mandi District
1	Bathora	Balog
2	Grehna	Beludhak
3	Kothi	Bhaunra
4	Ogli	Fafan
5	Pandoha	Jakleen
6	Talah	Kharyali
7	Jhunjan	Parlog
8	Majrog	
9	Bharara	
10	Jaishi	
11	Khera	
12	Lunnsu	
13	Malgi	

Map 1-3: Location of Project Area

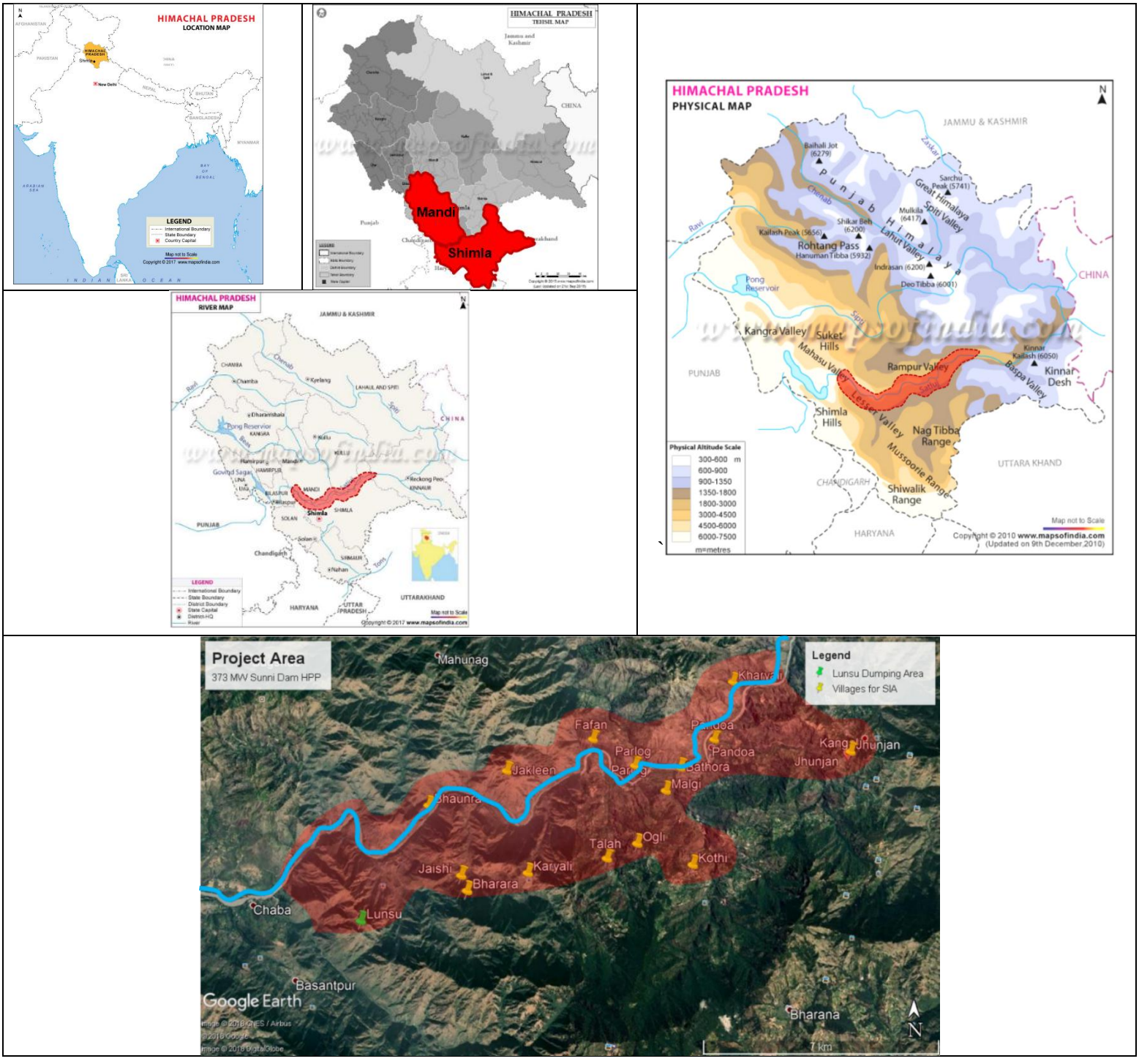


1.3.2.1 Access to project area

The project site is located at about 50 km from the state capital Shimla and the nearest railhead (broad gauge) is about 145 km at Kalka in Haryana. The site can be approached by NH-5 followed by SH-13 and MDR- 22 via. Shimla, Naldhera and Chaba. The nearest airport is at Jubbar Hati (Shimla) about 70 km from project site. The nearest international airport is located at Chandigarh at a distance of 160 km from the project site. Nearest village from Dam Site is village Khera in Distrct Shimla and nearest urban area is Sunni at a distance of 30km.

[8] (SJVN, Inception for Detailed Project Report of Sunni HEP (382 MW), 2018)

Map 1-4: Location of Proposed Project Area



1.3.2.2 Physiography and Geomorphology:

The project lies in the Inner Lesser Himalaya between the Dhauladhar range in the south and the Higher Himalayan Range in the north. The Satluj River is the main drainage in the catchment area with headwaters located in the highlands of Tibet. Geomorphologically the area is located in a young mountain chain which is characterized by rapid downcutting valley. Hence, most of the valley slopes are steep and the Satluj River is confined within narrow V-shaped valleys on the higher reaches. In the upstream reaches of the project flat land/terraces can be seen on the both on right & left river banks. The hill ranges in the right bank of Satluj river trend North West-South East and on the left bank North East-South West. The area forms part of the drainage basin of Satluj, which flows in nearly southwest direction. Behnakhad, Kotlu Khad, Gumma Khad and Bahairari Khad are important tributaries of the river Satluj. The drainage in the area exhibits sub-dendritic to trellis pattern controlled both by structure and lithology.[9]

1.3.2.3 Seismicity

Himachal Pradesh falls in the Himalayan region, which is one of the more seismically active regions in the world. The Project area lies in the Shimla Block of the Main Himalayan Seismic Zone domain of North West Himalayan seismic belt (Narula et al. (2000) the project falls in Earthquake Zone V in accordance with the Seismic Map of India (IS:1893:1984). It is demarcated by the Main Central Thrust in the north and the Main Boundary Fault/Thrust in the south, and limited in east and west by interpretative fundamental transverse faults. The Kangra Block lies to its west and the Garhwal Block in the east.[10]

1.3.3 Capacity and Outputs

Given below in the table is details of total capacity and output of various components of the project:

Table 1-3: Capacity and Output of Sunni Dam Hydro Electrical Project

Hydrology	
Catchment Area at Diversion Site	52955 km^2
90% dependable year	2001-2002
Flood discharge for river diversion	773.00cu.m/se
Probable Maximum Flood (PMF)	15473.00cu.m/se
Reservoir	
Full Reservoir Level (FRL)	EL712.00m

[9] (SJVN, INCEPTION REPORT (Revised), ENVIRONMENTAL CLEARANCE OF SUNNI HEP, 2017)
[10] (SJVN, INCEPTION REPORT (Revised), ENVIRONMENTAL CLEARANCE OF SUNNI HEP, 2017)

Minimum Draw Down Level (MDDL)	EL709.50m
Gross Storage at FRL	$82.50X10^6$cu.
Dead Storage at FRL	$64.2X10^6$cu.m
Live Storage at FRL	$7.9X10^6$cu.m
Length of Reservoir	20.70km (approx.)
Desilting Basin	Reservoir will act as Desilting basin
Dam	
Type of Dam	Concrete Gravity
Top of the Dam	EL 715.00 m
Average River Bed Level at Dam Site	EL 644.00 m
Dam Height above River bed	71.00 m
Length of Dam at Top	178.00m
Top Width of Dam	8.00 m
Length of Overflow Blocks	87.00 m
Length of Non-Overflow Blocks	97.42 m
Spillway	
Design Flood (PMF)	15473.00cu.m/se
Type of Spillway	Combination of Upper Level Spill-way (ULS) and Low Level Spill-way (LLS) (sluice spillway)
Energy Dissipation System	Stilling Basin
Low Level Spill-way (LLS) (Under sluice Spillway)	
Type	Sluice type
No. of Bays	Six (06)
Size of opening	8.5 m (W) X 16.0m
Type & No. of gate	Radial, Six
Width of each block	14.5 m
Total width of LLS Blocks	87.00m
Crest Level	EL 660.00
Upper Level Spill-way (ULS) (Overflow Spillway)	
Type	Ogee with open crest overflow
No of Bays	One (01) (Block No. 7)
Size	5.0m(W)X4.5m(H)
Type and No of gates	Flap Gate, One (01)
Width of each block	14.5 m

Total width of ULS	14.5 m
Crest of ULS	EL 707.00 m
VI) River Diversion	
River Diversion Discharge (1 in 25 years)	773.00cu.m/se
Diversion Scheme	Through Diversion Tunnel (DT) and coffer dams
Location of Diversion Tunnel	Left Bank
No. of Tunnel	One
Diameter and shape of DT	10.0m, Horse Shoe Shape
Length of Tunnel	670m
VII) Power Intake	
Number of Intake	Three (03)
Invert level	EL685.0
Discharge Capacity of Intake 1 and 2 (for Main Units)	277.84cu.m/sec (10%additional capacity)
Discharge Capacity of Intake 3 (for Environment Units)	171.26cu.m/sec (10%additional capacity)
Size of Intake gate	5.7m(W)X8.0m(H)
VIII) Pressure Shaft	
Number of Pressure Shaft	Three (03) further bifurcated into six (06)
Design Discharge for Pressure Shaft-1 and 2 (for Main units)	277.84cu.m/sec
Design Discharge for Pressure Shaft-3 (for Environment units)	171.27cu.m/sec
Diameter of Penstock	7.5 m and 5.4m after bifurcation
Length of Penstock	± 250.0 m
IX) Power House	
Type	Underground
Location	Right Bank
Size of machine Hall	185.42 m (L)
Normal Tail Water Level	EL 651.20 m
Minimum Tail Water Level	EL 647.50 m
Gross Head	59.97m

Rated Head	57.85m
Turbine Type	Francis
No of Unit	Six (06)
Design Discharge	726.95 cu.m/sec
Installed Capacity (Main units)	4*73MW
Installed Capacity (Auxiliary units)	1*73MW + 1*17MW
Total Installed Capacity	382MW
X) Tail Race Tunnel	
Number	Two (02)
Size of Tunnel	10.5m dia & 9.0m dia, Horse Shoe Shaped
Length of Tunnel	280m
XI) Power Generation	
Design Energy (Main Units)	987.84GWh
Design Energy (Auxiliary Units)	393.93GWh
Annual Energy	1381.77GWh
Annual Load Factor (Main Unit)	40.04%
Annual Load Factor (Environment Unit)	51.60 %

**Source: Inception report for Sunni HEP DPR*

1.3.4 Project cost and risks

The project is estimated to cost INR 2911.85 Cr. including IDC and financing charges at March, 2017 price level. The Annual energy of the project calculated as 1299 GWh. The breakdown of the cost estimates are given below:

Table 1-4: Sunni Dam Project Cost

Total Hard Cost at March'17:	INR 2414.20 Crores
Interest during Construction:	INR 487.46 Crores
Financial Charges	INR 10.19 Crores
Total Basic Cost including IDC and FC:	INR 2911.85 Crores
The tariffs for the project are as below:	
1st year Tariff	INR 5.40/kWh
Levelized Tariff	INR 5.07/kWh

**Source: Inception report for Sunni HEP DPR*

No information was available related to the associated risks for this particular project. However, a few of the risks which can be associated with the project are as follows:

a. Agitation and resistance by locals/political parties/community organization during pre-construction, construction and post construction phases of the project.
b. Risks involved during construction of project esp. dam, tunnels, shafts, bridges, river diversion works etc.
c. Risks involved during transportation of materials including explosive materials and heavy equipments such as girders, turbines, shafts etc.
d. Risk of chronic air and water pollution due to construction.
e. Risk of clashes between locals and outsiders and rise of crime rates in area because of in-migration during construction.
f. Risk of landslides, Humidity and water borne diseases due to creation of reservoirs and rise of water levels in the river during construction and post construction phases.

1.4 Examination of Alternatives

The Sunni Dam hydro electrical project is part of The Luhri Project which contemplates construction of three dams in three stages viz. Luhri Hydro-Electric Project Stage-I (210 MW), Luhri Hydro Electric Project Stage-II (163 MW) and Sunni Dam Hydro-Electrical Project (382 MW).

On the downstream of Sunni Dam HEP lies the 800 MW Kol Dam HEP. On the upstream of the Luhri project lies the 412 MW Rampur HEP which in-turn utilizes water discharged from the further upstream 1500 MW Nathpa-Jhakri project.

Conclusively, there are currently 6 HEPs commissioned consecutively on the Satluj river between Nathpa-Jhakri and Kol Dam over a stretch of approximately 250 km. Since the Sunni Dam HEP is part of the Luhri project and lies between the Kol Dam and Luhri Stage-II HEP, therefore, leaving limited scope for any alternative location for the project. However, alternatives regarding the Layout of the project was studied in detail to finalize the best location for Dam and power house with minimal displacement and also keeping in mind the engineering parameters.

These alternatives have been discussed in detail below[11]:

- **Alternative 1:** Dam and surface toe Power House at left bank.
- **Alternative 2:** Dam and underground Power house with 2D cover to Power House at right bank.
- **Alternative 3:** Dam and surface toe power house at right bank.
- **Alternative 4:** Dam and underground Power House with 4D cover to Power House at right bank.

[11] (SJVN, Inception for Detailed Project Report of Sunni HEP (382 MW), 2018)

Alternative 1: Dam and surface toe Power House at left bank.

An option of dam ±400m downstream of proposed dam axis with surface power house at left bank was studied. Since, the slope of left bank is much gentle in comparison to right bank; a possibility of surface power house on left bank has been studied. It was observed that the power house site encompasses the nalla fans and sufficient space will be available after removal of the nalla material. However, the study of catchment of nallas indicates that there will be potential danger of material flowing in the nalla and coming to the power house site. The power house will always be vulnerable from stability of slopes view point. Further, the sheared contact is lying on the downstream of dam axis with upstream dips when interpreted and projected to dam axis is likely to lie very close to assume foundation of dam. ***Therefore, Alternative-1 was rejected.***

Alternative 2: Dam and underground Power house with 2D cover to Power House at right bank.

An option of dam at present proposed site with underground Power House having 2D cover at right bank was studied. However, after detailed deliberation with CWC it was concluded that cover is not sufficient. ***Therefore, Alternative-2 was rejected.***

Alternative 3: Dam and surface toe power house at right bank.

An option of dam at present proposed site along with surface toe power house at right bank was studied. This alternative was also discussed with HCD, CWC and was rejected due to massive slope cutting and excavation work.

Alternative 4: Dam and underground Power House with 4D cover to Power House at right bank.

An option of dam at present proposed site with underground Power House having 4D cover was studied. The alternative was discussed with HCD, CWC and after detailed deliberation, this alternative was found to be most suitable. GSI, New Delhi also agreed to this alternative. Further this alternative was also studied with temporary as well as permanent diversion tunnel.

It is observed that, to use diversion tunnel as permanent structure, invert level is to be increased up to EL 660m i.e. upto crest level of spillway, which in turn will increase the height of upstream coffer dam by 6-8m. Further, the construction time will also increase as one more season will be required to construct permanent lined tunnel. ***Therefore, Alternative-4 with temporary diversion tunnel has been selected.***

1.5 Phases of project construction

Sunni power project is proposed to be completed in 5 years. Phasing of the project is yet not finalized as the DPR is still under process.

1.6 Core Design Features and Size and Type of Facilities

1.6.1 River Diversion Works

The diversion tunnel is expected to be constructed on the left side of the river valley. 10.0 m dia, horse shoe shaped diversion tunnel is designed to pass diversion flood up to 773 cu.m/s. The height of upstream cofferdam shall be ±18.80 m and the height of downstream coffer dam shall be ±9.20 m.

1.6.2 Dam

A ±71m high, concrete gravity dam from bed level ±623m, with integral 6 nos. gated spillways having size of 8.5m (W) X 16.0m (H) have been proposed. The spillway has been designed to pass design flood corresponding to Probable Maximum Flood of 15473 cu.m/.sec The Full Reservoir Level has been kept at 712.0 m and Minimum Draw Down Level at El. 709.50 m. The dam would provide a gross pondage of 82.5MCM and live storage of 7.9MCM. The length of the dam at top shall be 178m. The proposed dam is divided in 11 blocks as tabulated in Table below:

Table 1-5: Details of Dam Blocks

Sl. No.	Description	Total length (m)	No. of blocks	Block no.	Remarks
1.	NOF section on left bank	46	2	1 to 2	Total no. of Blocks = 11
2.	Over flow blocks	87	6	3 to 8	
3.	NOF section on right bank	52	3	9 to 11	

**Source: Inception report for Sunni HEP DPR*

1.6.3 Intake Structure

Intake structure is proposed on right bank for diverting the design discharge of 744.07cu.m/sec from the reservoir to the underground power house. The center line of intake shall be at 712.0m to 709.50m. Trash screens will be provided to prevent coarse floating or submerged debris being drawn into the pressure shafts. Trash rack cleaning facilities should be provided. The trash screens are so planned that the passing velocities are below 1.5 m/s as mentioned in IS: 9761-1995- Hydropower Intakes- Criteria for Hydraulic Design.

Discharge from intake-1 and 2 (277.84 cu.m/sec each) shall be utilized for main units and discharge through intake-3 (171.27 cu.m/sec) shall be utilized for environment units.

Intake gates with stoplog gates are provided to enable inspection and maintenance whilst the reservoir is impounded and to prevent heavily sedimented water depositing sediment within the pressure shaft entrance area during extreme floods.

1.6.4 Pressure Shaft

For flexibility of operation and maintenance, 3 nos. pressure shaft have been proposed which shall further bifurcated into six to pass total discharge of 729.95 cu.m/sec.

1.6.5 Power House and Transformer Hall

Underground power house having with size of 171.0m(L)x22.5m(W)x50.5m(H) shall be provided on right bank with installed capacity of 382MW (4x673MW– Main Units, 1x73MW+1x17MW - Environmental Units). The power house cavern is proposed ±220m inside the hill with as top cover of ±226m. Further, minimum 50.0 m rock cover is available between transformer hall and machine hall.

1.6.6 Tail Race Tunnel and Outfall Structure

Water exiting from the turbines will be discharged through the draft tubes into the 2 nos., 10.5m dia & 9m horse shoe shaped tail race tunnel. The length of tail race tunnel shall be ±280.0m. The TRT outfall gated structure after TRT has been proposed with crest level of El 647.2 m for discharging water from TRT to Satluj River.

1.6.7 Access Tunnels

The access tunnels to the machine hall and transformer hall have been proposed based on the size of the vehicles and equipment required to be transported through them, a maximum slope of 1 in 15 and making them as straight as possible for ease of maneuvering large vehicles.

1.6.8 Main Access Tunnel

The main access tunnel will be approximately 8.5m dia D-shaped ±590m long with a maximum slope of 1 in 16. It is anticipated that an enlarged section will be created at the junction between the tunnel and the machine hall loading and erection bay to form a parking area.

1.7 Need for ancillary infrastructural facilities

For Sunni HEP, requiring body is still in the process of detailing out the requirement of ancillary facilities, however, following ancillary infrastructural facilities are required in any hydro power

project during pre-construction, construction and post-construction period of the project for smooth and uninterrupted execution as per the guidelines prepared by Central Electricity Authority of India:[12]

1. Access roads
   (i) Roads to the project
   (ii) Roads in the project area
2. Rail head (as applicable)
3. Port facilities, (as applicable)
4. Construction power requirement
5. Power supply facilities
6. Telecommunication facilities required during construction and after completion of the project
7. Project colonies / buildings
8. Office spaces
9. Workshops
10. Drinking water facilities
11. Others

1.8 Work force requirements

For the execution of the project necessary infrastructure needs to be created like construction of bridges and approach roads, office buildings, colonies, workshops, water supply and sewerage disposal system followed by construction of various project components like diversion tunnel, coffer dam, concrete gravity dam, intake structure and penstocks, surface power house, tail race channel etc.

As a result, the total estimated permanent/regular employment of 310 persons and a temporary employment of 5657500 person-days would be generated.[13]

1.9 Details of Environmental Impact Assessment and Technical Feasibility Report

No technical feasibility report for the project has yet been prepared by SJVN. Environmental Impact Assessment report is under process. Preparation of DPR is also in progress. However, an inception report describing General Layout of the project has been prepared.

[12] (Authority, 2015)

[13] (Himachal Pradesh Forest Clearance: Ministry of Environment, Forest and Climate Change, 2019)

1.10 Applicable legislations and policies

1.10.1 Preparation of Social Impact Assessment Study

Section 4 of the RTFCTLARR Act, 2015 mandates that whenever the appropriate government intends to acquire land for a public purpose, it shall consult the concerned Panchayat at village level or ward level, in the affected area and carry out a Social Impact Assessment study in consultation with them, in such manner and from such date as may be specified by such Government by notification. (Section 4 of Act)

Rule 3 sub-section (1) of the HP RTFCTLARR Rules, 2015 states that the State Government shall, for the purpose of the Act, issue a notification for carrying out Social Impact Assessment in accordance with Part-B of FORM-I of these rules regarding the commencement of Social Impact Assessment and the same shall be made available in both Hindi and English to the concerned Panchayat or Municipality or Municipal Corporation, as the case may be, and in the concerned offices of the District Collector, the Sub-Divisional Magistrate and the Tehsil. A wide publicity will also be made in the affected area through publication in at least two daily newspapers circulated in the area, and also by affixing the notification at conspicuous places within the affected areas. Besides this, the notification shall also be uploaded on the website of the State Government: (HP RTFCTLARR Rules, 2015)

1.10.2 Process of land Acquisition[14]

- The government shall conduct a Social Impact Assessment (SIA) study, in consultation with the gram sabha in rural areas (and with equivalent bodies in case of urban areas).
- After this, the SIA report shall be evaluated by an expert group. The expert group shall comprise two non-official social scientists, two experts on rehabilitation, and a technical expert on the subject relating to the project.
- The SIA report will be examined further by a committee to ensure that the proposal for land acquisition meets certain specified conditions.
- A preliminary notification indicating the intent to acquire land must be issued within 12 months from the date of evaluation of the SIA Report.
- Subsequently, the government shall conduct a survey to determine the extent of land to be acquired.

[14] (Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013)

- Any objections to this process shall be heard by the Collector. Following this, if the government is satisfied that a particular piece of land must be acquired for public purpose, a declaration to acquire the land is made.
- Once this declaration is published, the government shall acquire the land.
- No transactions shall be permitted for the specified land from the date of the preliminary notification until the process of acquisition is completed

1.10.3 The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013[15]

The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013, (RTFCTLARR Act, 2013) replaces the Land Acquisition Act, 1894, which existed from colonial times. The new RTFCTLARR Act is an attempt to revamp and make the land acquisition process more effective by addressing the major lacunae in the old Land Acquisition Act.

The act seeks to harmonies the interests of land owners, industrialization/ growth of real estate and infrastructure industries and bring in transparency in the process of land acquisition. The objective of the act is thus in line with the requirements of modern times. The act, inter alia, contains provisions pertaining to mandatory rehabilitation and resettlement of those whose lands are acquired and payment of fair compensation to them. Significantly, the act provides for enhanced compensation to land owners in cases of land acquisition by the government for public purposes or for Public Private Partnership (PPP) projects that may aggregate to up to four times the market value in rural areas and up to twice the market value in urban areas. The Act has been hailed as beneficial and necessary to protect the interest of land holders and other affected persons.

1.10.3.1 Key Features of RTFCTLARR Act

The Act specifies provisions for land acquisition as well as R&R. Some of the major changes from the current provisions are related to (a) The process of land acquisition; (b) Rights of the people displaced by the acquisition; (c) Method of calculating compensation; and (d) Requirement of R&R for all acquisitions.

1.10.3.2 Compensation to Land Owners:

The compensation for land acquisition shall be determined as per the provisions of the RTFCTLARR Act, 2013.

[15] (Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013)

1.10.3.3 Process of Rehabilitation and Resettlement

Resettlement and Rehabilitation are two different activities.

- Resettlement is associated with the physical relocation or putting them to a new resettlement colony.
- Rehabilitation is associated with the restoration of the livelihood of the PAPs. Both these aspects put together involves the complete physical, social and cultural restoration.

The RTFCTLARR Act requires R&R to be undertaken in case of every acquisition. Once the preliminary notification for acquisition is published, an administrator shall be appointed. The Administrator shall conduct a survey and prepare the R&R scheme. This scheme shall then be discussed in the local bodies in case of urban areas. Any objections to the R&R scheme shall be heard by the administrator. Subsequently, the administrator shall prepare a report and submit it to the Collector. The Collector shall review the scheme and submit it to the Commissioner appointed for R&R. Once the Commissioner approves the R&R scheme, the government shall issue a declaration identifying the areas required for the purpose of R&R. The administrator shall then be responsible for the execution of the scheme. The Commissioner shall supervise the implementation of the scheme.

1.10.4 HP RTFCTLARR Rules 2015[16]

The Himachal Pradesh Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (Social Impact Assessment and Consent) Rules, 2015 were notified vide Notification of dated 09thApril,2015 and published in the Rajpatra (e-Gazette), Himachal Pradesh as required under section 112 of the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (Act No. 30 of 2013).

They extend to the whole of the State of Himachal Pradesh

Himachal Pradesh Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (Social Impact Assessment and Consent) Rules, 2015based on the Central Act, 2013 lays out the procedure for carrying out the social impact assessment study for the purpose of land acquisition in the State of Himachal Pradesh. The highlights of the rules are (A) Conducting SIA and SIMP in accordance with Form II and III (B) Conducting Public Hearings (C) Consent.

[16] (The Himachal Pradesh Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (Social Impact Assessment and Consent) Rules, 2015)

1.10.4.1 (A) Conducting SIA and SIMP

i. Form II: The Social Impact Assessment Report shall be submitted to the State Government within a period of six months from the date of its commencement and shall include the views of the affected families recorded in writing. This form elaborates the structure and the content of the SIA report.

ii. Form III: The Social Impact Management Plan enlists the ameliorative measures required to be undertaken for addressing the impact of the project and shall be submitted along with the Social Impact Assessment Report. This form provides a guideline on the content of the SIMP.

iii. The Form II and Form III are enclosed with this report in Appendix.

1.10.4.2 (B) Conducting Public Hearing -

i. Public hearings shall be organised in the affected areas to bring out the main findings of the Social Impact Assessment, seeking feedback on the findings and to seek additional information and views for incorporating the same in the final report.

ii. The date and venue of the public hearing will be announced and publicized three weeks in advance through public notifications and posters in all the villages within a radius of five kilo meters of the land proposed to be acquired, by advertisement in local newspapers, broadcasting in radio, and through direct communication with Gram Panchayat or Municipal Ward representatives besides uploading the information on the website of the State Government.

iii. The Social Impact Assessment report and the Social Impact Management Plan shall be made available in both Hindi and English to the concerned Panchayat or Municipality or Municipal Corporation, as the case may be, at village level or ward level in the affected areas and in the offices of the District Collector, the Sub-Divisional Magistrate, Tehsildars and shall also be uploaded on the website of the State Government.

iv. Representatives from the Requiring Body, designated Land Acquisition and Rehabilitation and Resettlement Functionaries, Public representatives, Local Voluntary Organisations and media shall also be invited to attend the public hearings.

v. The proceedings of the public hearing shall be video recorded and transcribed accordingly. This recording and transcription shall be submitted along with the final Social Impact Assessment Report and Social Impact Management Plan.

1.10.4.3 (C) Consent

The State Government, through the concerned District Collector shall obtain prior consent of the affected land owners in Part-A of Form-IV. At the same time State Government shall take

necessary steps for updating the records relating to land rights, title in the land and other revenue records in the affected areas, so that the names of land owners, occupants of the land and individuals be identified for initiating the prior consent process and land acquisition.

1.10.4.3.1 a) Consent of the Gram Sabha–

i. The District Collector shall in consultation with the representatives of the Gram Panchayat notify the date, timing and venue for holding the meeting of Gram Sabha in the affected areas three weeks in advance and conduct public awareness campaigns to motivate members of the Gram Sabhas to participate in the said meeting.

ii. The names and signatures of all the members who attended the meeting shall be taken and kept in the records.

iii. The quorum shall be the same as prescribed in the Himachal Pradesh Panchayati Raj Act, 1994 (Act No. 4 of 1994), of the total members of the Gram Sabha for considering the consent as valid.

iv. A resolution shall be passed with majority, in Part-B of Form-IV giving or withholding consent for the proposed acquisition and the resolution shall contain the negotiated terms and conditions for Rehabilitation and Resettlement, compensation, impact management and mitigation that the Requiring Body has committed and which have been signed by the District Collector or by the designated district officer along with the representative of the Requiring Body.

1.10.4.3.2 b) Consent of the Affected Land owners.

A signed declaration shall be obtained during affected land owners meeting in the presence of district officers, competent authority of requiring body and SIA team, whether he or she gives or withholds consent for the acquisition of land involved. This entire meeting will also be video recorded and complete proceedings will be documented in writing.

The outcome of the consent process will be made available in the office of Gram Panchayat and on the web site of the State Government.

2 Team composition, Approach, Methodology and Schedule of the Social Impact Assessment

2.1 Team Details

The composition of Social Impact Assessment team is given in Table 2-1 which is responsible to carry out the Social Impact Assessment Study. Each member of the team is an expert in his field and has undertaken numerous such studies before.

Table 2-1: SIA Team Details

S. No	Name	Qualification	Gender	Expertise
1	Dr. Ranveer Singh	PhD economic & M. Phill in Agriculture economist	Male	Retd as HOD of Agri-economics research centre, HPU Shimla, SIA Expert, Baseline survey for the entire Satluj basin was completed under him.
2	Raman Sharma	MA Sociology	Male	Expert in Survey & Data Analysis, Impact Assessment & Community Mobilization
3	Jitender Sharma	MBA	Male	Expert Social Mobilization
4	Viral Misra	B. Tech Civil Engg, Masters in Planning with specialization in Urban and Regional planning	Male	Expert in Urban & Regional Planning, EIA, SIA and R&R (Project Manager and Team Leader)
5	Gauri Srivastava	B. Arch, Masters in Planning with specialization in Urban Planning & Housing	Female	Expert in Housing & R&R and gender expert (Project coordinator)
6	M.R. Sharma	Bachelors in Social work	Male	Survey & Statistical Researcher
7	Pratibha	Master of Arts	Female	Survey & Statistical Researcher, and Gender Specialist
8	Sachin Chauhan	M.Com	Male	I.T. expert and data analyst
9	Meenakshi Bharadwaj	M.A Sociology	Female	Investigator & Gender Specialist

Following is the list of field surveyors who participated in the primary survey:

Table 2-2: List of Surveyors

S. No	Name	Qualification	Gender	Designation
1	Labh Singh	MSW	Male	Surveyor
2	Parveen	MSW	Male	Surveyor
3	Rakesh Kumar	B. Com	Male	Surveyor
4	Vishal Thakur	B.A.	Male	Surveyor
5	Mukesh Kumar	Diploma (ITI)	Male	Surveyor
6	Pankaj	B.Sc.	Male	Surveyor
7	Vijay Kumar	Diploma (Mechanical)	Male	Surveyor
8	Mohammad	Sociology	Male	Surveyor
9	Rahul	MSW	Male	Surveyor
10	Rahul	Sociology	Male	Surveyor
11	Rajendar Thakur	MBA	Male	Surveyor

2.2 Description and Rationale for the Methodology and Tools Used

2.2.1 Aim

The aim of the study is to conduct a social impact assessment study in accordance to Himachal Pradesh Right to Fair Compensation and Transparency in Land Acquisition Rehabilitation and Resettlement (Social Impact Assessment and Consent) Rules, 2015.

2.2.2 Objective

The following are the objectives of the Study:

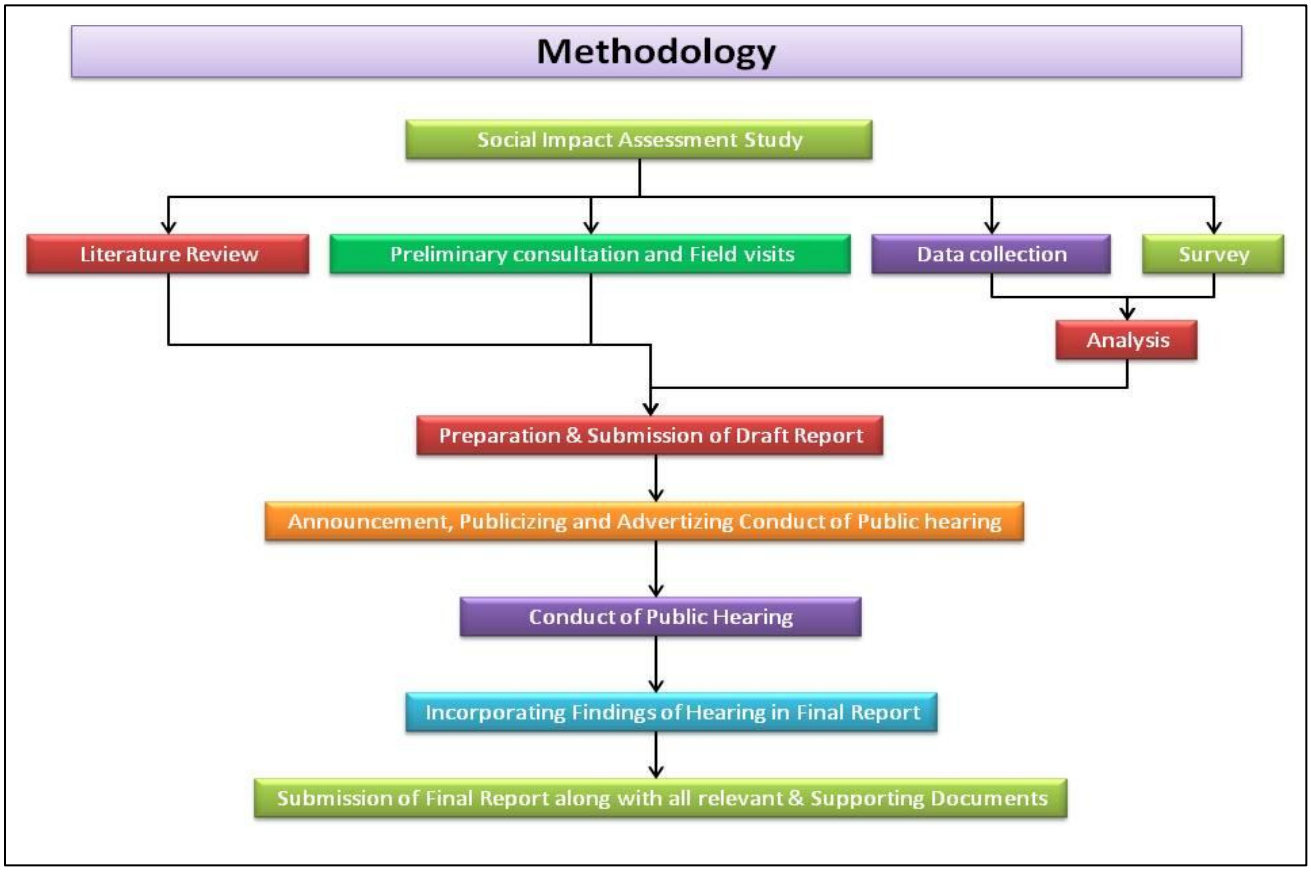
1. Assessment as to whether the proposed acquisition serves the public purpose as per the criteria listed under section 2 of RTFCTLARR Act, 2013.
2. Estimation of affected families and the number of families among them likely to be displaced.
3. Extent of land, public and private, houses, settlements and other common properties likely to be affected by the proposed acquisition.
4. Whether the extent of land proposed for acquisition is the absolute bare minimum extent needed for the project.
5. Whether land acquisition at alternate place has been considered and found not feasible.

6. Study of social impacts of the project, and nature and cost of addressing them and the impact of these cost on the overall costs of the project vis-à-vis the benefits of the project.
7. Preparation of socio-economic and cultural profile of the affected area and resettlement site (if any) as per FORM-II of the HPRTFCTLARR rules,2015.
8. Preparation of a Social Impact Management Plan as per Form III of HPRTFCTLARR rules,2015.

2.2.3 Approach and Methodology

The methodology adopted to conduct social impact assessment and to prepare SIMP is described below. The SIA was prepared in accordance with the RTFCTLARR Act 2013 and HP RTFCTLARR Rules, 2015. Figure below presents the approach and methodology of SIA study in the form of flow chart.

Figure 2: Study Methodology



**Source: Team SIA*

Given below is the detailed methodology that will be adopted to carry out the study.

1. **Analyze Project Context**

- Literature Review
- Secondary data

2. **Identification and Analysis of Stakeholders**

- Secondary data
- Primary data

✓ Site Analysis

✓ Primary Survey (Qualitative and Quantitative Analysis of Various Social, Economic and Environmental Parameters through Indicator Analysis)

3. **Identify Social factors and variables**

- Primary Survey (Qualitative and Quantitative Analysis)
- Focus Group Discussion (Stakeholder Representatives, Concerned Authorities/ Officers)
- Stakeholder Consultation

4. **Data Analysis and Priority Assessment**

- Analysis of Primary and Secondary Data Collected
- Inferences drawn from Focus Group Discussions
- Inferences drawn from Stakeholder Consultation
- Observations from Site Survey

5. **Consult Stakeholders and Develop Mitigation Plans**

- Conducting FGDs and Public Hearings
- Development of Mitigation Plans in pursuance of findings and inferences from FGDs and Public Hearings

6. **Implement Mitigation Plans and Public participation**

- In coordination with implementing agency, concerned authorities/ officers and public participation

7. **Ensure Monitoring with Active Stakeholder Participation and Modify It**

2.2.4 Rationale for The Methodology

Carrying SIA is a time bound study and concerns interest of people who are financially, economically, socially dependent on the land getting acquired for the upcoming project. Above methodology is adopted to carry out the study and ensure, in consultation with institutions of local self-governance and Gram Sabhas established under the Constitution, a humane, participative, informed and transparent process for land acquisition for the upcoming Sunni Hydro Power Project and provide just and fair compensation to the affected families whose land has been proposed to be acquired or are affected by this acquisition and make adequate provisions for such affected persons for their rehabilitation and resettlement and for ensuring that cumulative outcome of the acquisition should be that affected persons become partners in development leading to an improvement in their post-acquisition social and economic status.

2.2.4.1 Identification of the Stakeholders to be Consulted for SIA

A list of all major stakeholders was prepared which would directly or indirectly be affected by the project. The list was then finally divided into three broad categories namely:

1) **Primary Stakeholders:** These included the titleholders of the land to be acquired, their families, those who claim their partnership in the property and those having any kind of livelihood/dependency on the land being acquired.
2) **Secondary Stakeholders:** These include business entities, civil societies/ political/religious/NGOs, Yuvak and Mahila Mandals and local residents of the area. These stakeholders would not be affected by the acquisition directly but there may be an indirect impact on them due to the project.
3) **Institutional Stakeholders:** They include Government; Semi-Government institutes such as Panchayats, DC Office, Police etc. which may directly or indirectly be involved or be impacted by this project.

Identification of the stakeholders is followed by Desk Review. Documents such as RTFCTLARR Act 2013 and HP RTFCTLARR Rules, 2015, R&R Policy, Revenue Maps, District Census Hand Book, District Gazetteer, Maps, Government Employment Schemes and service sectors in which people in the project area are involved were collected from government

and non-government sources and reviewed. Collection and review of such pertinent data was primarily to develop understanding about the socio-economic conditions of the concerned area and availability of infrastructure facilities and service delivery system.

2.3 Tools to Collect Information for The Social Impact Assessment

Information to carry out the study was collected from both Primary and Secondary Sources. These sources are discussed in detail in following section:

- **Data from Secondary Sources**

Secondary sources information was collected from a number of quarters such as from Census data, Statistical hand books, concerned departments and other literature. These sources of information complemented the primary data which was elicited through field survey from the affected people and other stakeholders. An understanding was created about the physical, social, economic and cultural set-up of the project area before undertaking detailed field investigations.

- **Primary Source**

Primary data was collected through house hold surveys, field visits and FGDs. Questionnaires and schedules for household survey and focused group discussions were prepared by SIA team and pre tested before finalization to check any possible gap. The questionnaire was administered by professional surveyors/enumerators who were imparted with training by the team leader of SIA. They were taken to the project site for a day for knowing the project area. The emphasis was laid on quality of the data so that the conclusion arrived at would be authentic and reliable. Data collected from the survey was digitized after due scrutiny and logical checks for processing and production of output tables.

- **Preparation of Study tools**

In order to collect authentic information about the primary stakeholders and intensity of impact on them a structured questionnaire was prepared. The questionnaire covered wide range of qualitative and quantitative information. A draft questionnaire was developed and submitted to the HP SIAU for suggestions and modification. The questionnaire was finalized after pre-testing in the field.

Schedules were prepared to conduct Focused Group Discussions with various stakeholders at Panchayat level to collect information regarding status of available social and physical infrastructure in villages, loss of any common property due to acquisition, education status, health status, employment status, role of women in decision making, etc. including positive and negative project impacts perceived by various stakeholders, their suggestions to enhance the positive impacts and mitigate the negative impacts.

- **Primary Survey**

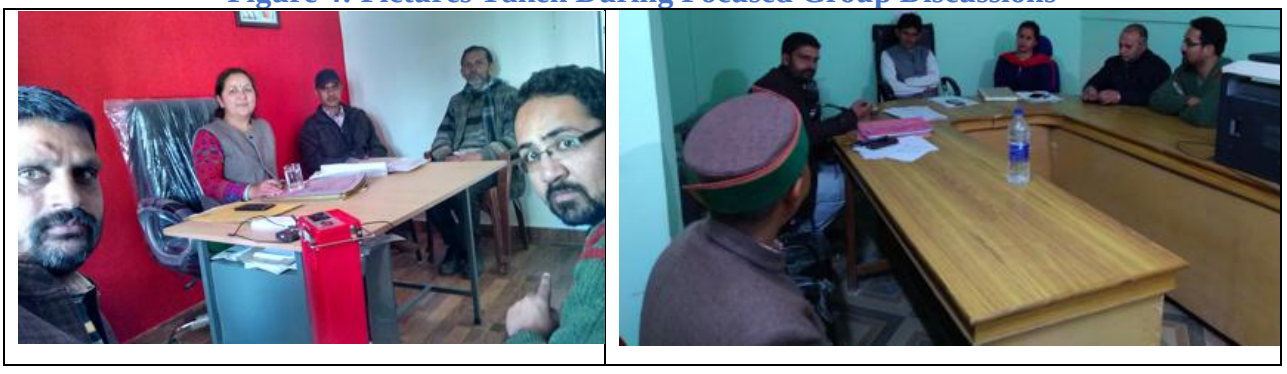
A survey of primary stakeholders was carried out with the help of a pre structured questionnaire. The aspects covered in the questionnaire were identification particulars of PAFs, social profile, family details, occupation, source of income, family expenditure, household assets, information on affected structure, commercial/self-employment activities, employment pattern, opinion and views of PAFs on project and resettlement and rehabilitation. Most part of the questionnaire has been pre-coded except those reflecting the opinion and views of PAFs, which have been left open-ended.

Figure 3: Pictures Taken During Primary Survey

- **Focused Group Discussion**

One of the aspects of the study was consultations with stakeholders, people's representatives and community leaders. Consultations opened up the line of communication between the stakeholders and the SIA Team. This helped in identifying the impacts perceived by the community.

Figure 4: Pictures Taken During Focused Group Discussions






- **Supervision of Data Collection and Ground Verification**

Supervision of data collection was undertaken by the Core team members and simultaneously ground verification was conducted for five percent of the households covered under socio-economic survey.

2.4 Sampling methodology

For the study, the team aimed to cover all the PAFs as per the list obtained from the Revenue Department. The primary data was generated using both quantitative and qualitative techniques:

- **Quantitative Techniques:** Pre-tested structured questionnaires for HH Survey among primary stakeholders.
- **Qualitative Techniques:** The qualitative techniques included Participatory Rural Appraisal (PRA), Livelihood Analysis, Preference Ranking, Focus Group Discussion (FGD) and Public Consultations.

2.5 Overview of information and data sources used

SIA and SIMP was prepared based on following data and statistics, information collected through field visits and stakeholder consultations as per FORM-II of Right to Fair Compensation and Transparency in Land Acquisition Rehabilitation and Resettlement (Social Impact assessment and Consent) Rules, 2015. Given below are the detail of data sources used to collect the necessary data:

Table 2-3: Overview of information and data sources used

S. No	Information	Primary Source	Secondary Source
A	**Socio-economic and cultural parameters**		
1.	Demographic details of the population in the project area		Census,2011
	Age, gender, caste, religion	Primary Survey	Census,2011
	Literacy, health and nutritional status	Primary Survey	Census,2011
2.	Poverty levels	Primary Survey, FGDs	
3.	Vulnerable groups	Primary Survey	
4.	Kinship patterns and women's role in the family	Primary Survey	
5.	Social and cultural organization.	FGDs	
6.	Administrative organization.	FGDs	Concerned Government Departments
7.	Political organization.	FGDs	Concerned Government Departments
8.	Civil society organizations and social movements.	FGDs	Concerned Government Departments
9.	Land use and livelihood	Primary Survey, Field survey	Land Records, Jamabandi Documents
	Agricultural and non-agricultural use	Primary Survey, Field survey	Land Records, Revenue Maps, Jamabandi Documents
	Livestock	Primary Survey	
	Formal and informal work and employment.	Primary Survey, FGDs	SECC data
	Household division of labour and women's work	Primary Survey	
	Migration	Primary Survey, FGDs	

S. No	Information	Primary Source	Secondary Source
	Household income levels	Primary Survey	
	Livelihood preferences	Primary Survey, Stake holder consultation	
	Food security	Primary Survey, Stake holder consultation, FGDs	
10.	Local economic activities	Primary Survey, Stake holder consultation, FGDs	
	Formal and informal, local industries	Primary Survey, Stake holder consultation, FGDs	
	Access to credit	Primary Survey, Stake holder consultation, FGDs	
	Wage rates	Primary Survey, Stake holder consultation, FGDs	
	Specific livelihood activities women are involved in	Primary Survey, Stake holder consultation, FGDs	
11.	Factors that contribute to local livelihoods	Stake holder consultation, FGDs	
	Access to natural resources	Stake holder consultation, FGDs, Field Survey	
	Common property resources Private assets	Stake holder consultation, FGDs, Field Survey	
	Roads, transportation	Stake holder consultation, FGDs, Field Survey	
	Irrigation facilities	Stake holder consultation, FGDs, Field Survey	
	Access to markets	Stake holder consultation, FGDs, Field Survey	
	Livelihood promotion programmes	Stake holder consultation, FGDs, Field Survey	
	Co-operatives and other livelihood-related associations	Stake holder consultation, FGDs, Field Survey	
12.	Quality of the living environment	Stake holder consultation, FGDs, Field Survey	
	Perceptions, aesthetic qualities, attachments and aspirations	Primary Survey, Stake holder consultation, FGDs	
	Settlement patterns	Primary Survey, FGDs	Land Records, Revenue

S. No	Information	Primary Source	Secondary Source
			Maps, Jamabandi Documents
	community and civic spaces	FGDs, Stake holder consultation	
	Sites of religious and cultural meaning	FGDs, Field Survey	
	Physical infrastructure (including water supply sewerage systems etc.)	Stake holder consultation, FGDs, Field Survey	
	Public service infrastructure (schools, health facilities, anganwadi centers, public distribution system)	Stake holder consultation, FGDs, Field Survey	
	Safety, crime, violence	Stake holder consultation, FGDs, Field Survey	
	Social gathering points for women.	Stake holder consultation, FGDs, Field Survey	
B	**Key impact areas**		
1	Impacts on land, livelihoods and income	Primary Survey, FGDs	
	Level and type of employment	Primary Survey, FGDs	
	Intra-household employment patterns	Primary Survey, FGDs	
	Income levels	Primary Survey, FGDs	
	Food Security	Primary Survey, FGDs	
	Standard of living	Primary Survey, FGDs	
	Access and control over productive resources	Primary Survey, FGDs	
	Economic dependency, or vulnerability	Primary Survey, FGDs	
	Disruption of local economy	Primary Survey, FGDs	
	Impoverishment risks	Primary Survey, FGDs	
	Women's access to livelihood alternatives	Primary Survey, FGDs	
2	Impact on physical resources	Stake holder consultation, FGDs, Field Survey	
	Impacts on natural resources, soil, air, water, forests	Stake holder consultation, FGDs, Field Survey	
	Pressure on land and common property natural resources for livelihoods	Stake holder consultation, FGDs, Field Survey	
3	Impacts on private assets, public services and utilities	Stake holder consultation, FGDs, Field Survey	
	Capacity of existing health and education	Stake holder consultation,	

S. No	Information	Primary Source	Secondary Source
	facilities	FGDs, Field Survey	
	Capacity of housing facilities	Stake holder consultation, FGDs, Field Survey	
	Pressure on supply of local services.	Stake holder consultation, FGDs, Field Survey	
	Adequacy of electrical and water supply, roads, sanitation and waste management system	FGDs, Field Survey	
	Impact on private assets such as bore wells, temporary sheds etc.	Primary Survey, FGDs	
4	Health impacts	Primary Survey, FGDs, Stakeholder Consultation	
	Health impacts due to project activities with a special emphasis on: (i) Impact on women's health (ii) Impact on the elderly	Primary Survey, FGDs, Stakeholder Consultation	
5	Impacts on culture and social cohesion	Primary Survey, FGDs, Stakeholder Consultation	
	Demographic changes		Census Data
	Shifts in the economy-ecology balance	Primary Survey, FGDs, Stakeholder Consultation	
	Impacts on the norms, beliefs, values and cultural life	Primary Survey, FGDs, Stakeholder Consultation	
	Crime and illicit activities	Primary Survey, FGDs, Stakeholder Consultation	
	Stress of dislocation	Primary Survey, FGDs, Stakeholder Consultation	
	Impact of separation of family cohesion	Primary Survey, FGDs, Stakeholder Consultation	
6	Impact at different stages of the project cycle.	Primary Survey, FGDs, Stakeholder Consultation	

S. No	Information	Primary Source	Secondary Source
	Pre-construction phase • Interruption in the delivery of services • Drop in productive investment • Land speculation • Stress of uncertainty	Primary Survey, FGDs, Stakeholder Consultation	
	Construction phase • Displacement and relocation • Influx of migrant construction workforce • Health impacts on those who continue to live close to the construction site	Primary Survey, FGDs, Stakeholder Consultation	
	Operation phase • Reduction in employment opportunities compared to the construction phase • Economic benefits of the project • Benefits on new infrastructure	Primary Survey, FGDs, Stakeholder Consultation	
	De-commissioning phase • Loss of economic opportunities • Environmental degradation and its impact on livelihoods	Primary Survey, FGDs, Stakeholder Consultation	
	Direct and indirect impacts	Primary Survey, FGDs, Stakeholder Consultation	
	Differential impacts • Vulnerability mapping and impact on women, children, the elderly and the different abled	Primary Survey, FGDs, Stakeholder Consultation	

S. No	Information	Primary Source	Secondary Source
	Cumulative impacts • Measurable and potential impacts of other projects in the area along with the identified impacts for the project in question • Impact on those not directly in the project area but based locally or even regionally.	Primary Survey, FGDs, Stakeholder Consultation	

**Source: Team SIA*

2.6 Schedule of consultations with key stakeholders and brief description of public hearings conducted

Public hearings will be conducted after submission of the draft report and consequently the schedules of consultations with key stakeholders and description will be incorporated in the final report.

3 Land Assessment

This chapter focuses on the details of total land to be acquired by the Sunni Dam HEP including the location, total land requirement for various activities under the project and intended use of the land to be purchased under different panchayats. Available maps and primary sources including the primary survey are used to explore the nature, present use and classification of the land. A brief description on the ownership pattern, transfer and use of land for the last three years was also assessed.

3.1 Information from the Land Inventories and Primary Sources

The details of the purpose or intended use of the land to be acquired under Sunni HEP in different panchayats across Shimla and Mandi district is given in the below table:

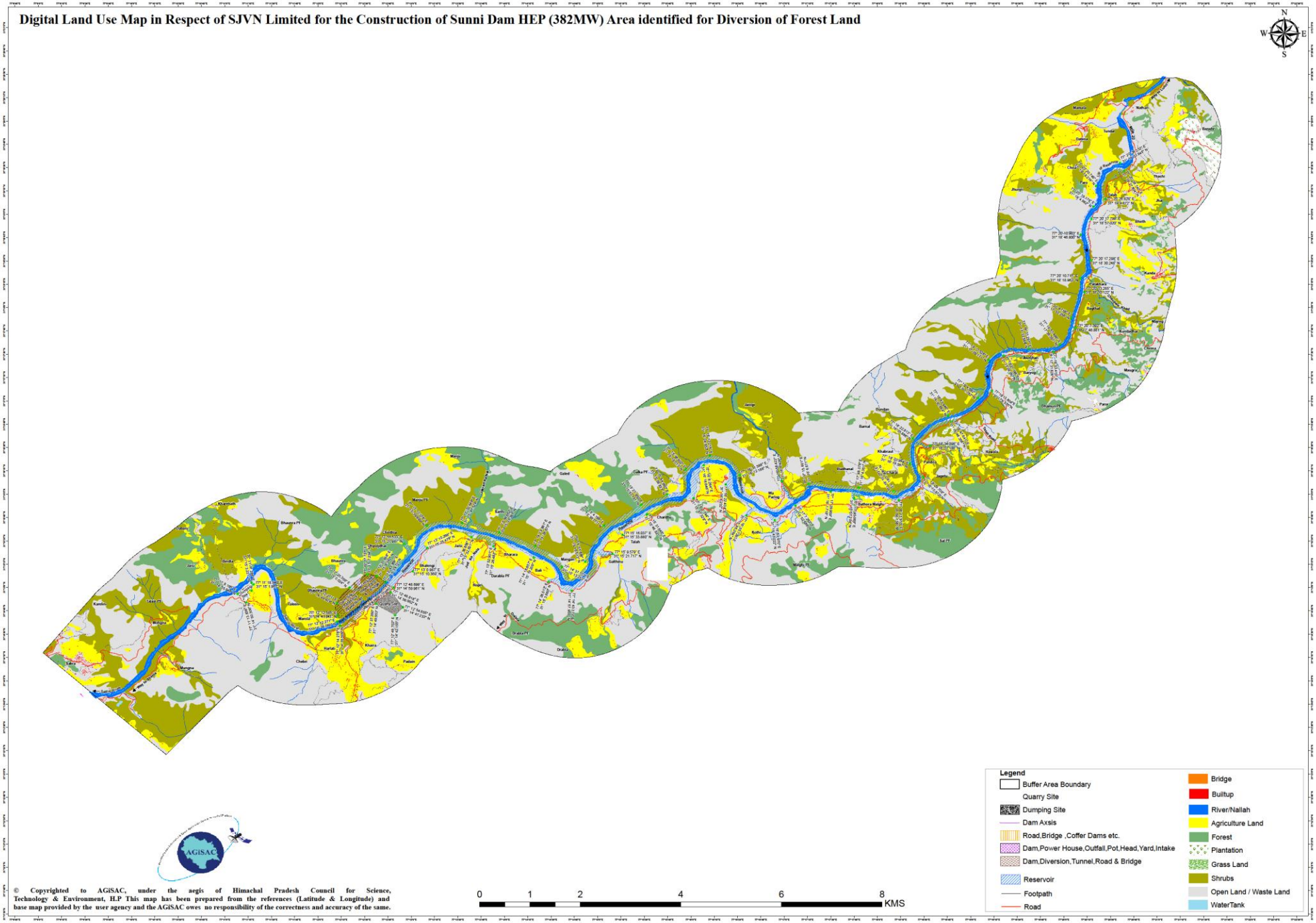
Table 3-1: Land Inventories

Name of Distt.	Name of Division	Name of Panchyat	Name of Village	Forest Land(ha)	Private Land (ha)	Total Land(ha)	No. of owner Land	No of structures to be acquired
Shimla	Shimla	Chabri	Lunsu	4-2235	1-1729	5-3964	83	---
			Khera	9-0884	1-0148	10-1032	329	1
				10-0556	---	10-0556		-
				10-3264	---	10-3264		-
				2-0605	8-9541	11-0146		-
		Karyali	Jaishi	18-2007	3-7634	21-9641	306	6
			Bharara	17-5203	6-1109	23-6312	229	19
		Ogli	Talah	23-5863	3-2225	26-8088	54	1
			Ogli	22-1604	4-7889	26-9493	112	5
			Kothi	6-3146	0-5522	6-8668	33	1
			Malgi	5-5998	8-5650	14-1648	217	2
		Bag	Bathora	7-2771	3-8662	11-1433	156	2
			Pandhoa	15-0423	0-4448	15-4871	20	3
			Grehna	6-5505	0-6941	7-2446	3	1
Total in Shimla Division				**158-0064**	**43-1498**	**201-1562**	**1542**	**41**
	Kumarsain/ Kothgarh	Mogra	Jhunjan	13-3032	0-8678	14-1710	64	1
			Majrog	11-8470	0-2365	12-0835	17	1
		Banahar	Bhutt	2-7544	-	2-7544	-	-
			Talah	9-4813	-	9-4813	-	-
Total Kotgarh Division				37-3859	1-1043	38-4902	81	2
Total in Shimla Distt.				195-3923	44-2541	239-6464	1623	43

Name of Distt.	Name of Division	Name of Panchyat	Name of Village	Forest Land(ha)	Private Land (ha)	Total Land(ha)	No. of owner Land	No of structures to be acquired
Mandi	Karsog	Bindla	Bhoura	02-0000	-	02-0000	98	-
				30-8900	-	30-8900	-	-
				11-4338	2-9055	14-3393	-	-
			Balog	13-0163	1-7213	14-7376	22	2
		Sartyola	Jakleen	10-1163	0-4981	10-6144	14	-
			Mangan	20-6737	-	20-6737	-	-
		Parlog	Fafan	16-6807	0-6308	17-3115	13	3
			Khanouch	4-1160		4-1160	-	-
			Parlog	11-0502	1-1722	12-2224	13	-
			Beludhank	37-9211	1-9823	39-9034	42	2
		Shout	Kharyali	25-7963	0-0321	25-8284	22	-
		Nanj	Choa	2-1234		2-1234	-	-
			Tundol	5-9849	-	5-9849	-	-
Total in Mandi Distt.				**191-8027**	**8-9423**	**200-7450**	**224**	**7**

**Source: Department of Land Records & Revenue*

Map 2.1: Land use Map of Project Area



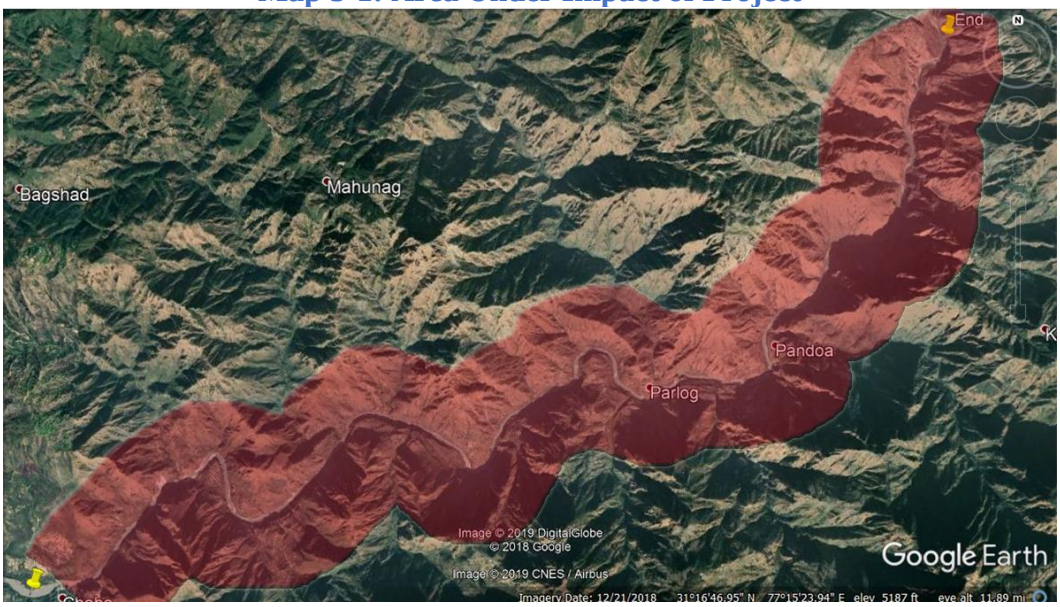
3.2 Entire area of impact under the influence of the project

The total land requirement for the Sunni HEP is 44,03,889 sq. m. Out of total, 38,71,915 sq. m is Forest Land and 5,31,974 sq. m is Private Land. Table given below shows the total government and private land under impact and its intended use:

Table 3-2:Area requirement Under Various Project Components

S No.	Component	Forest Land (sq. m)	Private Land (sq. m)	Total (sq. m)
1	Reservoir Area	31,85,471	4,20,546	36,06,017
2	Dam Complex and powerhouse	3,28,900	0	3,28,900
3	Quarry site	1,03,264	0	1,03,264
4	Dumping site	42,235	11,729	53,964
5	Road Bridges & Job facilities (Incl. office)	1,91,440	10,148	2,01,588
6	Colony Area	20,605	89,551	1,10,156
	Total	**38,71,915**	**5,31,974**	**44,03,889**

Map 3-1: Area Under Impact of Project



3.3 Total Land requirement for the project

The selected land measures 44,03,889 Ha in total. It covers a total of 20 villages across two districts namely Shimla and Mandi accommodating 788 families and a total population of 3,687. Given below is the breakup of the land being acquired under different heads in both the districts:

Table 3-3: Land requirement for project

S. No.	Component	District Shimla (Ha)			District Mandi (Ha)			Total Land (District Shimla and Mandi) (5+8)
		Government Land	Private Land	Total Land	Government Land	Private Land	Total Land	
1	2	3	4	5	6	7	8	9
1	Dumping	4-22-35	1-17-29	5-39-64	-	-	-	5-39-64
2	Road & Bridge	9-08-84	1-01-48	10-10-32	02-00-00	-	02-00-00	12-10-32
3	Dam & Power House	10-05-56	-	10-05-56	30-89-00	-	30-89-00	40-94-56
4	Quarry	10-32-64	-	10-32-64	-	-	-	10-32-64
5	Colony	2-06-05	8-95-41	11-01-46	-	-	-	11-01-46
6	Reservoir	159-63-79	33-11-23	192-75-02	158-91-27	8-94-23	167-85-50	360-60-52
Total		**195-39-23**	**44-25-41**	**239-64-64**	**191-80-27**	**8-94-23**	**200-74-50**	**440-39-14**

**Source: Satluj Jal Vidyut Nigam (SJVN)*

3.4 Land Already Purchased, Alienated, Leased/Acquired, And the Intended Use for Each Plot of Land Required for The Project

The Requiring Body has not purchased or taken lease of any land for the project activities.

However, the intended use of the proposed land for acquisition is provided in the table below:

Table 3-4: Use of Acquired Land

Name of Distt.	Name of Division	Name of Panchyat	Name of Village	Total Land(ha)	Intended Use
Shimla	Shimla	Chabri	Lunsu	5-3964	Dumping
			Khera	10-1032	Road & Bridge
				10-0556	Dam
				10-3264	Quarry
				11-0146	Colony
		Karyali	Jaishi	21-9641	Reservoir
			Bharara	23-6312	Reservoir
		Ogli	Talah	26-8088	Reservoir
			Ogli	26-9493	Reservoir
			Kothi	6-8668	Reservoir
			Malgi	14-1648	Reservoir
		Bag	Bathora	11-1433	Reservoir
			Pandhoa	15-4871	Reservoir
			Grehna	7-2446	Reservoir
Total in Shimla Division				**201-1562**	
	Kotgarh/ Kumarsain	Mogra	Jhunjan	14-1710	Reservoir
			Majrog	12-0835	Reservoir
		Banahar	Bhutt	2-7544	Reservoir
			Talah	9-4813	Reservoir
Total Kotgarh/ Kumarsain Sub Division				38-4902	
Total in Shimla Distt.				**239-6464**	
Name of Distt.	**Name of Division**	**Name of Panchyat**	**Name of Village**	**Total Land(ha)**	**Components**
Mandi	Karsog	Bindla	Bhoura	02-0000	Road & Bridge
				30-8900	Dam & P/H
				14-3393	Reservoir
			Balog	14-7376	Reservoir
		Sartyola	Jakleen	10-6144	Reservoir
			Mangan	20-6737	Reservoir
		Parlog	Fafan	17-3115	Reservoir
			Khanouch	4-1160	Reservoir
			Parlog	12-2224	Reservoir
			Beludhank	39-9034	Reservoir
		Shout	Kharyali	25-8284	Reservoir
		Nanj	Choa	2-1234	Reservoir
			Tundol	5-9849	Reservoir
Total in Mandi Distt.				**200-7450**	

**Source: Satluj Jal Vidyut Nigam (SJVN)*

3.5 Quantity and location of land proposed to be acquired for the project

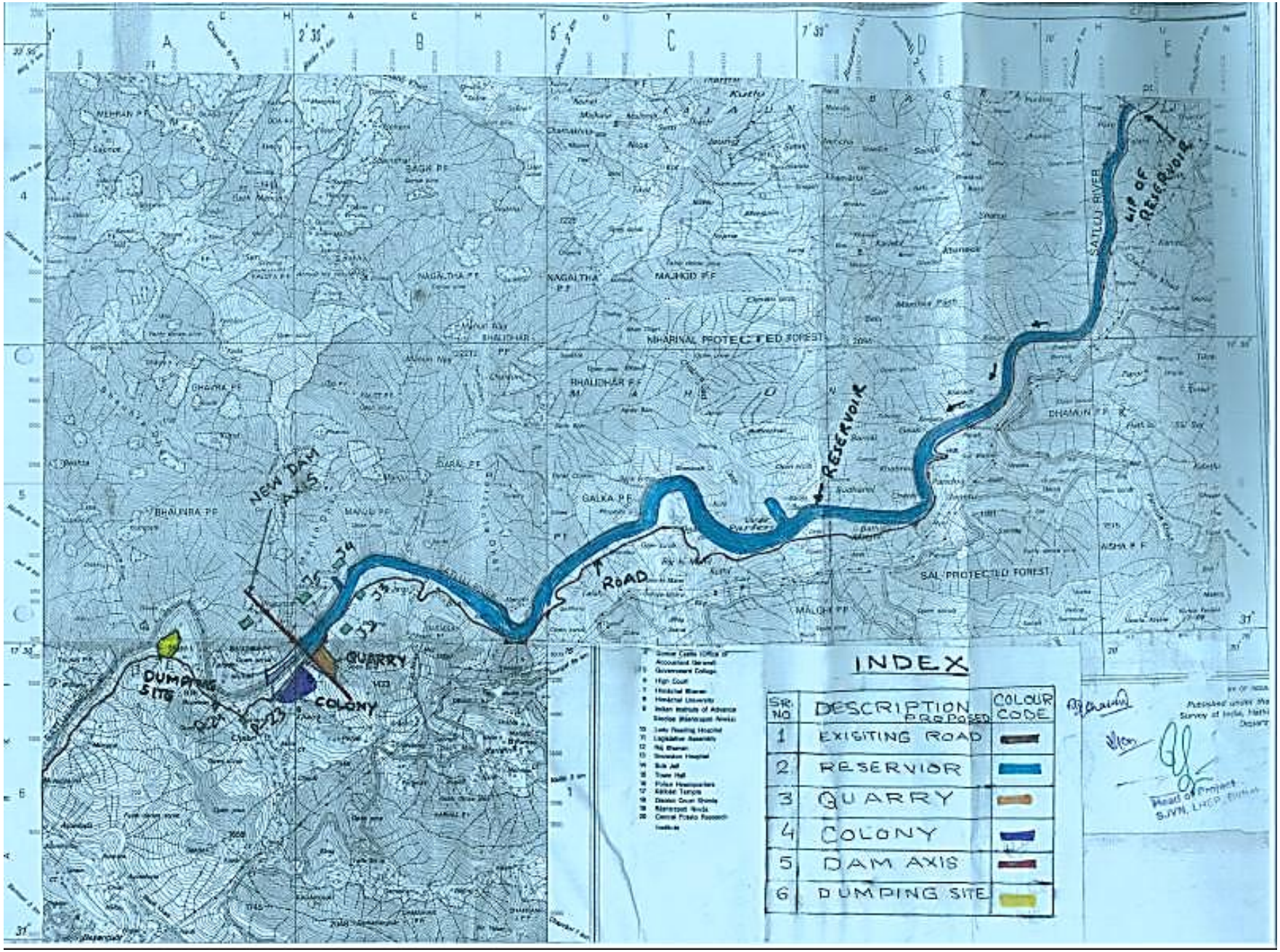
Sunni Dam HEP requires acquisition of 53.1964 Ha of private land across 20 villages of Shimla and Mandi districts comprising a total of 755 khasras. Given below is a detailed list of quantity and location of the land proposed for acquisition:

Table 3-5: Quantity of Land Under Acquisition

Name of Distt.	Name of Panchayat	S. No.	Name of Village	Private Land (ha)	Total No of Khasras
Shimla	Chabri	1.	Lunsu	1.1729	7
		2.	Khera	9.9689	120
	Karyali	3.	Jaishi	3.7634	100
		4.	Bharara	6.1109	71
	Ogli	5.	Talah	3.2225	35
		6.	Ogli	4.7889	61
		7.	Kothi	0.5522	3
		8.	Malgi	8.565	135
	Bag	9.	Bathora	3.8662	47
		10.	Pandhoa	0.4448	12
		11.	Grehna	0.6941	2
	Mogra	12.	Jhunjan	0.8678	16
		13.	Majrog	0.2365	5
Mandi	Bindla	14.	Bhoura	2.9055	65
		15.	Balog	1.7213	37
	Sartyola	16.	Jakleen	0.4981	7
	Parlog	17.	Fafan	0.6308	11
		18.	Parlog	1.1722	8
		19.	Beludhank	1.9823	11
	Shout	20.	Kharyali	0.0321	2
Total				**53.1964**	**755**

**Source: Satluj Jal Vidyut Nigam (SJVN)*

Map 3-2: Location for Proposed Acquisition



3.6 Nature, Present Use and Classification of Land

Out of the total private land which is getting acquired across both the districts under the project, 63% is cultivated and 37% is uncultivated. In Shimla district out of the total land under acquisition 59% of land is cultivated and 41% of land under acquisition is uncultivated. Similarly, in Mandi district out of the total land under acquisition 83% of land is cultivated and 17% of land is uncultivated. Table below gives cropping pattern and types of crops in both the districts:

Table 3-6: Present Use of Land Under Acquisition

S. No.	District	Category	Type of land	Area (Ha)
1	Mandi	Cultivated	Dhani Avval	4-49-64
2			Dhani Dhoyam	0-22-14
3			Barani Avval	01-37-13
4			Barani Dhoyam	1-25-39
5			Bhagicha Varani Faldhar	0-08-72
Total Cultivated				**7-43-02**
6	Mandi	Uncultivated	Banjar Kabale Kashat	0-42-61
7			Khadetar	00-00-65
8			Bani	0-71-70
9			Gher Mumkin	0-36-25
Total Uncultivated				**01-51-21**
10	Shimla	Cultivated	Kyar Avval	4-79-74
11			Kyar Dhoyam	3-68-43
12			Bakhal Avval	9-69-53
13			Bakhal Dhoyam	7-59-31
14			Ba. Ba. Avval Faldar	0-2-96
15			Ba.Ba.Dhoyam Faldar	0-17-60
16			Ba.Ba.Dhoyam Bila Faldar	0-07-41
Total Cultivated				**26-24-98**
17	Shimla	Uncultivated	Banjar Kadim	6-53-08
18			Banjar Jadheed	0-24-93
19			Ghasani	9-84-60
20			Gher Mumkin	1-37-82
Total Uncultivated				**18-00-43**
Total				**53-19-64**

**Source: Satluj Jal Vidyut Nigam (SJVN)*

3.6.1 Irrigation Pattern

Out of total 53.19Ha of land under acquisition, only 9.44Ha of land is irrigated and rest 43.75Ha of land is Unirrigated. Table given below shows distribution of irrigated and Unirrigated land in villages under acquisition across Shimla and Mandi district:

Table 3-7: Irrigation Pattern of the land under acquisition

S. No	District	Village	Irrigated land (Ha)	Unirrigated Land (Ha)	Total Land (Ha)
1	Shimla	Ludsu	-	1-17-29	1-17-29
2		Kaira	-	9-96-89	9-96-89
3		Jaishi	1-30-35	2-45-99	3-76-34
4		Bharada	0-70-79	5-40-30	6-11-09
5		Talaah	-	3-22-25	3-22-25
6		Ogli	-	4-78-89	4-78-89
7		Kothi	0-54-31	0-00-91	0-55-22
8		Malgi	0-89-77	7-66-73	8-56-50
9		Bathora	1-09-42	2-77-20	3-86-62
10		Pandoa	-	0-44-48	0-44-48
11		Grehna	-	0-69-41	0-69-41
12		Jhujhan	-	0-86-78	0-86-78
13		Majrog	0-18-15	0-05-50	0-23-65
Total in Shimla			**4-72-79**	**39-52-62**	**44-25-41**
1	Mandi	Bhaunra	2-12-95	00-77-60	2-90-55
2		Balog	1-58-46	0-13-67	1-72-13
3		Jaklin	0-22-13	0-27-68	0-49-81
4		Fafaan	-	0-63-08	0-63-08
5		Parlog	0-78-24	0-38-98	1-17-22
6		Beludhank	-	1-98-23	1-98-23
7		Kharyali	-	0-03-21	0-03-21
Total in Mandi			**4-71-78**	**4-22-45**	**8-94-23**
Total			**09-44-57**	**43-75-07**	**53-19-64**

**Source: Satluj Jal Vidyut Nigam (SJVN)*

3.7 Size of Holdings, Ownership Patterns

Out of total 1847 title holders in district Shimla and Mandi whose land/property is getting acquired for the project, 73 % are males and 27% are females. Table given below shows a distribution of village wise khasras having single and joint owners:

Table 3-8: Holding Size and Pattern

Name of Distt.	Name of Panchayat	S. No.	Name of Village	Total No of Khasras	Total area of Khasras (Ha)	No of Khasras with Single Owners	No of Khasras with Joint owners	Total No of Title Holders
Shimla	Chabri	1.	Lunsu	7	1.1729	0	7	83
		2.	Khera	120	9.9689	3	117	329
	Karyali	3.	Jaishi	100	3.7634	15	85	306
		4.	Bharara	71	6.1109	1	70	229
	Ogli	5.	Talah	35	3.2225	8	27	54
		6.	Ogli	61	4.7889	7	54	112
		7.	Kothi	3	0.5522	0	3	33
		8.	Malgi	135	8.565	2	133	217
	Bag	9.	Bathora	47	3.8662	1	46	156
		10.	Pandhoa	12	0.4448	3	9	20
		11.	Grehna	2	0.6941	0	2	3
	Mogra	12.	Jhunjan	16	0.8678	1	15	64
		13.	Majrog	5	0.2365	0	5	17
Mandi	Bindla	14.	Bhoura	65	2.9055	4	61	98
		15.	Balog	37	1.7213	2	35	22
	Sartyola	16.	Jakleen	7	0.4981	0	7	14
	Parlog	17.	Fafan	11	0.6308	3	8	13
		18.	Parlog	8	1.1722	2	6	13
		19.	Beludhank	11	1.9823	2	9	42
	Shout	20.	Kharyali	2	0.0321	0	2	22
Total				**755**	**53.1964**	**54**	**701**	**1847**

**Source: Land Records, Revenue Department*

As shown in the table above out of total 755 khasras in 20 villages under acquisition, 54 khasras have single owners and 701 khasras have joint owners.

Table 3-9: Ownership Pattern

S. No	District	Total Owners	Joint Ownership	Single ownership
1	Shimla	1623	1584	39
2	Mandi	224	8	8
Total		1847	1592	47

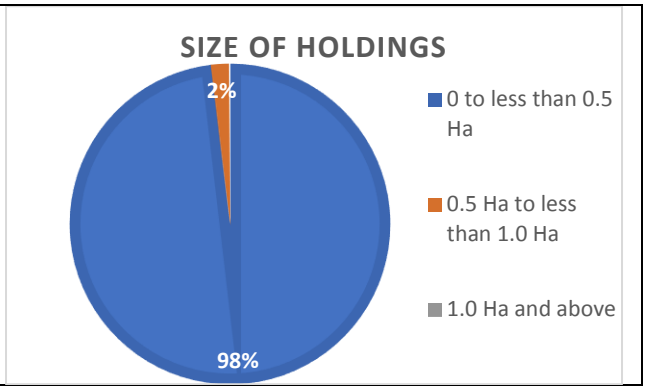
**Source: Land Records, Revenue Department*

Out of total 1847 titleholders, 1592 (97%) are joint owners and 47 (3%) are single owners.

There is a preponderance of small land holdings in the entire project area. The average size of the holding is 0.0705Ha. Out of total 755 khasras, 98% have area less than 0.5Ha, only 2% have area between 0.5Ha to 1.0Ha and only one khasra has area more than 1.0 Ha which is getting acquired for the project.

Table 3-10: Size of Holdings

Category	No. Of Holdings
0 to less than 0.5 Ha	741
0.5 Ha to less than 1.0 Ha	13
1.0 Ha and above	1
Total	755



**Source: Department of Land Records & Revenue*

3.8 Land Distribution and Number of Residential Houses

There are total 1623 and 224 titleholders in Shimla and Mandi districts respectively. Total 614 Khasras having a total area of 44.25Ha from district Shimla and 141 Khasras having a total area of 8.94Ha from district Mandi are getting acquired for the Sunni Project. Total 38 residential houses with 146 owners are coming under acquisition, 31 from district Shimla and 7 from district Mandi.

Table given below gives a detailed distribution of land (village wise) in both the districts:

Table 3-11: Land Distribution and Number of Residential Houses

S. No	District	Village	Total No of Khasras	Total No of Titleholders	No of Houses	No of Owners whose house is getting acquired	Total Land (Ha)
1	Shimla	Ludsu	7	83	-	-	1-17-29
2		Kaira	120	329	1	28	9-96-89
3		Jaishi	100	306	2	11	3-76-34

S. No	District	Village	Total No of Khasras	Total No of Titleholders	No of Houses	No of Owners whose house is getting acquired	Total Land (Ha)
4		Bharada	71	229	18	36	6-11-09
5		Talaah	35	54	1	1	3-22-25
6		Ogli	61	112	3	8	4-78-89
7		Kothi	3	33	1	1	0-55-22
8		Malgi	135	217	1	7	8-56-50
9		Bathora	47	156	-	-	3-86-62
10		Pandoa	12	20	2	11	0-44-48
11		Grehna	2	3	1	3	0-69-41
12		Jhujhan	16	64	1	15	0-86-78
13		Majrog	5	17	-	-	0-23-65
Total in Shimla			**614**	**1623**	**-**	**121**	**44-25-41**
1	Mandi	Bhaunra	65	98	-	-	2-90-55
2		Balog	37	22	2	2	1-72-13
3		Jaklin	7	14	-	-	0-49-81
4		Fafaan	&	13	3	13	0-63-08
5		Parlog	11	13	-	-	1-17-22
6		Beludhank	&	42	2	10	1-98-23
7		Kharyali	8	22	-	-	0-03-21
Total in Mandi			**141**	**224**	**7**	**25**	**8-94-23**
Total			**755**	**1847**	**38**	**146**	**53-19-64**

**Source: Satluj Jal Vidyut Nigam (SJVN)*

3.9 Land Prices and recent changes in ownership and transfers

The circle rates for the last three years (2016-17, 2017-18 and 2018-19) were obtained from the Revenue Department for the below mentioned categories: [17]

[17] (Himachal Pradesh Department of Revenue, n.d.)

1. **Category-I (0-25 mtr):** Property/Land in which any point of the concerned Khasra Number or part thereof is land up to a distance of 25 meters from a road.
2. **Category-II(20% < Base Rate)(25-50 mtr):** Property/Land in which no point of the concerned Khasra Number or part thereof is 25 to 50 meters from such road.
3. **Category-III(40% < Base Rate)(50-100 mtr):**Property/Land in which no point of the concerned Khasra Number or part thereof is 50 to 100 meters from such road.
4. **Category-IV(50% < Base Rate)(100-1000 mtr):** Property/Land in which no point of the concerned Khasra Number or part thereof is 100 to 1000 meters from such road.
5. **Category-V(60% < Base Rate)(>1000 mtr):** Property/Land in which no point of the concerned Khasra Number or part thereof is 1000 meters or more from such road.

The various rates are available for each sub-category of cultivated and non-cultivated lands situated at varied distance from the National Highway, State Highway or Other Roads.
The prices for cultivated and non-cultivated lands in different villages under the respective Patwar Circle are presented in the below table. The presented circle rates are highest among the prevailing rates over the last three years.

Table 3-12: Circle rates of project area for period 1-04-2018 to 31-03-2019

S.No.	District	Patwar Circle	Panchayat	Village	Area Unit	Road Type	Category-I (0-25 mtr)		Category-II(20% < Base Rate)(25-50 mtr)		Category-III(40% < Base Rate)(50-100 mtr)		Category-IV(50% < Base Rate)(100-1000 mtr)		Category-V(60% < Base Rate)(>1000 mtr)	
							Cultivated	UnCultivated	Cultivated	UnCultivated	Cultivated	UnCultivated	Cultivated	UnCultivated	Cultivated	UnCultivated
1	Mandi	Talehad	Bindla	Bhaunra	Sq. Metre	National Highway	0	0	0	0	0	0	0	0	0	0
						State Highway	0	0	0	0	0	0	0	0	0	0
						Other Road	1532	1277	1226	1022	919	766	766	638	613	511
2		Talehad		Balog	Sq. Metre	National Highway	0	0	0	0	0	0	0	0	0	0
						State Highway	0	0	0	0	0	0	0	0	0	0
						Other	1532	1277	1226	1022	919	766	766	638	613	511

S.No.	District	Patwar Circle	Panchayat	Village	Area Unit	Road Type	Category-I (0-25 mtr)		Category-II(20% < Base Rate)(25-50 mtr)		Category-III(40% < Base Rate)(50-100 mtr)		Category-IV(50% < Base Rate)(100-1000 mtr)		Category-V(60% < Base Rate)(>1000 mtr)	
							Cultivated	UnCultivated	Cultivated	UnCultivated	Cultivated	UnCultivated	Cultivated	UnCultivated	Cultivated	UnCultivated
						Road										
3	Shimla	Parlog	Parlog	Fafaan	Sq. Metre	National Highway	0	0	0	0	0	0	0	0	0	0
						State Highway	0	0	0	0	0	0	0	0	0	0
						Other Road	863	719	690	575	518	431	431	360	345	288
4		Parlog		Parlog	Sq. Metre	National Highway	0	0	0	0	0	0	0	0	0	0
						State Highway	0	0	0	0	0	0	0	0	0	0
						Other Road	863	719	690	575	518	431	431	360	345	288
5		Parlog		Beludhank	Sq. Metre	National Highway	0	0	0	0	0	0	0	0	0	0
						State Highway	0	0	0	0	0	0	0	0	0	0
						Other Road	583	486	467	389	350	292	292	243	233	194
6		Parlog	Shout	Kharyali	Sq. Metre	National Highway	0	0	0	0	0	0	0	0	0	0
						State Highway	0	0	0	0	0	0	0	0	0	0
						Other Road	558	465	446	372	335	279	279	232	223	186
7		Sartyola	Sartyola	Jakleen	Sq. Metre	National Highway	0	0	0	0	0	0	0	0	0	0
						State Highway	0	0	0	0	0	0	0	0	0	0
						Other Road	1122	935	898	748	673	561	561	468	449	374
8		Karyali	Karyali	Bharda	Sq. Metre	National Highway	1692	1410	1354	1128	1015	846	846	705	677	564
						State	1410	1175	1128	940	846	705	705	588	564	470

S.No.	District	Patwar Circle	Panchayat	Village	Area Unit	Road Type	Category-I (0-25 mtr)		Category-II(20% < Base Rate)(25-50 mtr)		Category-III(40% < Base Rate)(50-100 mtr)		Category-IV(50% < Base Rate)(100-1000 mtr)		Category-V(60% < Base Rate)(>1000 mtr)	
							Cultivated	UnCultivated	Cultivated	UnCultivated	Cultivated	UnCultivated	Cultivated	UnCultivated	Cultivated	UnCultivated
						Highway										
						Other Road	1128	940	902	752	677	564	564	470	451	376
9		Karyali		Jaishi	Sq. Metre	National Highway	1692	1410	1354	1128	1015	846	846	705	677	564
						State Highway	1410	1175	1128	940	846	705	705	588	564	470
						Other Road	1128	940	902	752	677	564	564	470	451	376
10		Kangal	Mogra	Majrog	Sq. Metre	National Highway	857	714	685	571	514	428	428	357	343	286
						State Highway	714	595	571	476	428	357	357	298	286	238
						Other Road	571	476	457	381	343	286	286	238	228	190
11		Kangal		Jhujhan	Sq. Metre	National Highway	857	714	685	571	514	428	428	357	343	286
						State Highway	714	595	571	476	428	357	357	298	286	238
						Other Road	571	476	457	381	343	286	286	238	228	190
12		Chebri	chebri	Lunsu	Sq. Metre	National Highway	1692	1410	1354	1128	1015	846	846	705	677	564
						State Highway	1410	1175	1128	940	846	705	705	588	564	470
						Other Road	1128	940	902	752	677	564	564	470	451	376
13		Chebri		Khaira	Sq. Metre	National Highway	1692	1410	1354	1128	1015	846	846	705	677	564
						State Highway	1410	1175	1128	940	846	705	705	588	564	470
						Other Road	1128	940	902	752	677	564	564	470	451	376
14		gl	gl	la	Sq.	National	2527	2106	2022	1685	1516	1264	1264	1053	1011	847

S.No.	District	Patwar Circle	Panchayat	Village	Area Unit	Road Type	Category-I (0-25 mtr)		Category-II(20% < Base Rate)(25-50 mtr)		Category-III(40% < Base Rate)(50-100 mtr)		Category-IV(50% < Base Rate)(100-1000 mtr)		Category-V(60% < Base Rate)(>1000 mtr)	
							Cultivated	UnCultivated	Cultivated	UnCultivated	Cultivated	UnCultivated	Cultivated	UnCultivated	Cultivated	UnCultivated
					Metre	Highway										
						State Highway	2106	1755	1685	1404	1264	1053	1053	878	842	702
						Other Road	1685	1404	1348	1123	1011	842	842	702	674	562
15		Ogli		Ogli	Sq. Metre	National Highway	2527	2106	2022	1685	1516	1264	1264	1053	1011	847
						State Highway	2106	1755	1685	1404	1264	1053	1053	878	842	702
						Other Road	1685	1404	1348	1123	1011	842	842	702	674	562
16		Ogli		Malgi	Sq. Metre	National Highway	2527	2106	2022	1685	1516	1264	1264	1053	1011	847
						State Highway	2106	1755	1685	1404	1264	1053	1053	878	842	702
						Other Road	1685	1404	1348	1123	1011	842	842	702	674	562
17		Ogli		Kothi	Sq. Metre	National Highway	2527	2106	2022	1685	1516	1264	1264	1053	1011	847
						State Highway	2106	1755	1685	1404	1264	1053	1053	878	842	702
						Other Road	1685	1404	1348	1123	1011	842	842	702	674	562
18		Sainj	Bag	Bathora	Sq. Metre	National Highway	2527	2106	2022	1685	1516	1264	1264	1053	1011	847
						State Highway	2106	1755	1685	1404	1264	1053	1053	878	842	702
						Other Road	1685	1404	1348	1123	1011	842	842	702	674	562
19		Sainj		Pandhoa	Sq. Metre	National Highway	2527	2106	2022	1685	1516	1264	1264	1053	1011	847
						State Highway	2106	1755	1685	1404	1264	1053	1053	878	842	702
						Other	1685	1404	1348	1123	1011	842	842	702	674	562

S.No.	District	Patwar Circle	Panchayat	Village	Area Unit	Road Type	Category-I (0-25 mtr)		Category-II(20% < Base Rate)(25-50 mtr)		Category-III(40% < Base Rate)(50-100 mtr)		Category-IV(50% < Base Rate)(100-1000 mtr)		Category-V(60% < Base Rate)(>1000 mtr)	
							Cultivated	UnCultivated	Cultivated	UnCultivated	Cultivated	UnCultivated	Cultivated	UnCultivated	Cultivated	UnCultivated
						Road										
20		Sainj		Grehna	Sq. Metre	National Highway	983	819	786	655	590	491	491	410	393	328
						State Highway	820	683	656	546	492	410	410	342	328	273
						Other Road	655	546	524	437	393	328	328	273	262	218

**Source: Department of Revenue and Land Records*

The SIA team did not come across any changes in the ownership over a period of last three years. As compared to the list provided by the HP SIAU, the only exception is in case of death of any landowner, the ownership of land has got automatically transferred to their children/wife. These changes in ownership have not been recorded with the Revenue Department till date.

Many of the current landowners shared that after the marriage of their sister/s, the brothers are the practical owners of the land as they are protecting the land and also producing agricultural products. According to many respondents, it is one of main sources of their livelihoods and dividing the land further would leave them economically vulnerable. They also shared that the sisters are engaged in farming on the land of their marital family. Although in many cases, the sisters have verbally transferred the ownership to their brothers, none of the transfers are registered with the Revenue Department.

4 Estimation and Enumeration of Affected Families and Assets

4.1 Directly affected persons

The proposed acquisition of 53.1964 Ha private land is directly affecting 1847 people across 20 villages of Shimla and Mandi districts. Given below is a list of numbers of people getting directly affected by the acquisition in each village:

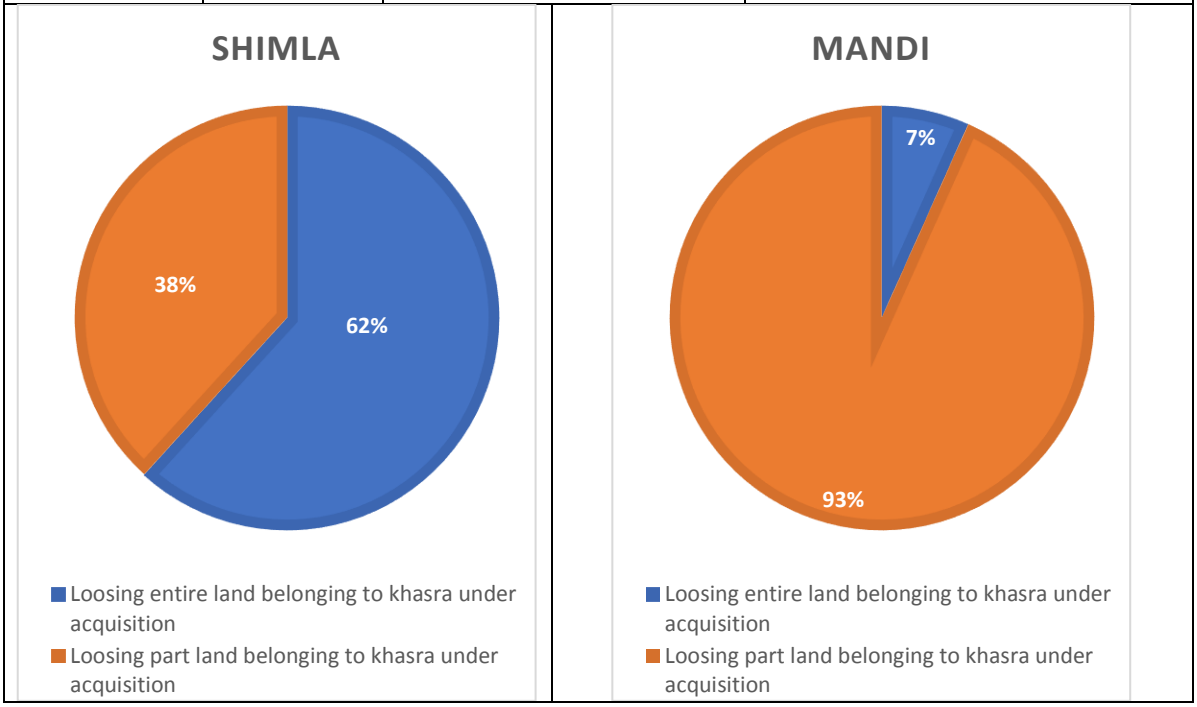
Table 4-1: Directly Affected PAPs

Name of Distt.	Name of Panchayat	S. No.	Name of Village	Total area of Khasras (Ha)	Total No of Title Holders
Shimla	Chabri	1.	Lunsu	1.1729	83
		2.	Khera	9.9689	329
	Karyali	3.	Jaishi	3.7634	306
		4.	Bharara	6.1109	229
	Ogli	5.	Talah	3.2225	54
		6.	Ogli	4.7889	112
		7.	Kothi	0.5522	33
		8.	Malgi	8.565	217
	Bag	9.	Bathora	3.8662	156
		10.	Pandhoa	0.4448	20
		11.	Grehna	0.6941	3
	Mogra	12.	Jhunjan	0.8678	64
		13.	Majrog	0.2365	17
Mandi	Bindla	14.	Bhoura	2.9055	98
		15.	Balog	1.7213	22
	Sartyola	16.	Jakleen	0.4981	14
	Parlog	17.	Fafan	0.6308	13
		18.	Parlog	1.1722	13
		19.	Beludhank	1.9823	42
	Shout	20.	Kharyali	0.0321	22
Total				**53.1964**	**1847**

**Source: Satluj Jal Vidyut Nigam (SJVN)*

Table 4-2:Number of People Loosing Complete Khasra

S. No	District	Total Owners	Loosing entire land belonging to Khasra under acquisition	Loosing part land belonging to Khasra under acquisition
1	Shimla	1623	1002	621
2	Mandi	224	15	209
Total		1847	1045	802



**Source: Department of Revenue and Land Records*

In Shimla district, out of total 1623 titleholders 1002 (62%) will loose entire parcel of land under acquisition and 621 (38%) will loose only part of it. In Mandi district, out of total 224 titleholders 15 (7%) will loose entire parcel of land under acquisition and 209 (93%) will loose only part of it. However, they all have additional land either in the same panchayat or in some other panchayat. Thus, none of them are completely dependent on the land getting acquired which is why they preferred to have cash as compensation for the land which is getting acquired. Also, out of the total 966 titleholders who were interviewed during the primary survey, 18 (2%) responded that the remaining parcel of land would not remain useful after acquisition of part of their land and 948(98%) responded that the remaining parcel of land will remain useful after acquisition.

Out of total 1847 titleholders, 146 (8%) are losing their houses in acquisition and they demanded for project assisted relocation preferably anywhere in the same gram panchayat.

**Note: It should be mentioned here that, the final estimation of the land losers losing 100% land/ loosing part of their land/ loosing shelter should be conducted by the competent authorities of the State govt.*

4.1.1 Tenants/ Occupiers

No tenants in the land proposed for acquisition were reported during survey. All the affected families use the houses for staying with their families and the land to be cultivated by themselves.

4.1.2 Schedule tribes and traditional forest dwellers

There is no affected family falling in the ST category or traditional forest dwellers who have lost any of their forest rights.

4.1.3 Dependence on common property resources

During interviews and FGDs it was found that most of the villagers had dependency on the forest land being acquired, for collection of cattle fodders and fire wood. Also, this land is used as grazing grounds by the villagers. Many villagers demanded alternatives to be provided for the forest land being acquired esp. villages JhunJhun and Majrog of Mogra Panchayat. Also, Cremation grounds of most of the villages will be lost under the acquisition, for which the villagers have requested to provide them with alternate cremation grounds.

Apart from PAPs, most of the panchayats including villagers whose land is not being acquired also had high dependency on the forest being acquired for the purpose of fodder and fire-wood. During FGDs with Panchayats this issue was one of the major concerns of the villagers from the proposed acquisition. Similarly, they were concerned about the cremation grounds that will be submerged by the project. They have demanded to be provided with equivalent alternative forest resources and alternative cremation grounds to meet their requirements.

4.1.4 Land Assigned by State Government

There are no people who have been assigned land by the State Government under any of its schemes and such land is under acquisition

4.1.5 Dependence on land for livelihood

Out of the total 53.1964 Ha if land under acquisition, 33.68 Ha (63%) land is cultivable and only 9.46 Ha (18%) land is irrigated. All owners of this cultivable land shared that they have been earning part of their livelihoods from agriculture for more than 3 years prior to acquisition.

4.2 Inventory of Productive Assets and Significant Land

During the primary survey a detailed inventory of available assets with PAPs was prepared by SIA team like vehicles, house hold equipment, utilities on their land, livestock, trees, etc. Status of available assets not only indicates standard of living in the area but is also an indicator of affordability of the PAPs. Given bellow is a detailed inventory of various available assets with 1345 respondents who are getting affected by the project:

Table 4-3: Inventory of Productive Assets

S. No	Category	Description	No. Of PAPs	% of PAP
1.	Vehicle	Truck	3	0.22%
2.		Trolleys	2	0.15%
3.		Car	95	7.06%
4.		Bike/ Scooter	17	1.26%
				0.00%
5.	House Hold Equipment	Refrigerator	847	62.97%
6.		Washing Machine	168	12.49%
7.		Ceiling Fan	305	22.68%
8.		Air Conditioner	7	0.52%
9.		Room Heater	96	7.14%
10.		Table Fan	60	4.46%
11.		TV	1180	87.73%
12.		Radio	223	16.58%
13.		Computer	38	2.83%
14.		Mobile Phones	1233	91.67%
15.		Microwave/ Oven	2	0.15%
16.		Geyser	21	1.56%

**Source: Primary Survey*

Almost 14824 fruit bearing trees are getting affected by the proposed acquisition and almost 26691 non-fruit bearings trees are under the impact of acquisition. Almost 130 dug wells, 3 water taps, 2 handpumps, 7 existing water, 9 electric poles, 3 water supply pipelines, 4 toilets and 4 kitchens presently functional will go under acquisition.

Table 4-4: Inventory of Assets on Land

S. No.	Utilities on Land	Under Impact (In Nos.)
1.	No. of Fruit Bearing Trees	14824
2.	Number of Non-Fruit Bearing Trees	26691
3.	Dug Wells	130

S. No.	Utilities on Land	Under Impact (In Nos.)
4.	Water tap	3
5.	Water tank	7
6.	Hand pump	2
7.	Water supply Pipeline	3
8.	Electric pole transmission Line	9
9.	Toilets	4
10.	Kitchen	4

**Source: Primary Survey*

Table given below lists down all the livestock owned by the PAPs in the project area.

Table 4-5: Inventory of Livestock

Livestock	Count
Cow	1442
Buffalo	8
Sheep	19
Goat	67
Poultry Birds	23
Ox/Bull	122
Khacchar	2

**Source: Primary Survey*

From the Survey, apart from private Land, other significant land where the villagers had economic and social dependency was forest land coming under acquisition and land used as cremation ground on the banks of the river Satluj.

5 Socio-Economic And Cultural Profile

5.1 Demographic details of the population in project villages

As per Census of India 2011, the total population in the 20 villages where land is being acquired for upcoming Sunni HEP is 3230 and the total number of households is 670. Out of the total population in these villages there are 1634 (51%) are males and 1596 (49%) are females. Detailed distribution of households and population is given in the table below:

Table 5-1: Demographic Details of Project Area

District Name	Name	No of Households	Total Population	Total Male	Total Female
Shimla	Majrog	16	79	42	37
Shimla	Jhunjan	18	94	47	47
Shimla	Lunsu	52	258	136	122
Shimla	Khaira	38	179	91	88
Shimla	Jaishi	60	327	165	162
Shimla	Bharara	62	356	161	195
Shimla	Talah	24	137	72	65
Shimla	Ogli	52	255	124	131
Shimla	Kothi	28	159	80	79
Shimla	Malgi	34	137	75	62
Shimla	Bathora	58	259	119	140
Shimla	Pandoa	36	128	57	71
Shimla	Ghrema	47	225	121	104
Mandi	Baloug	3	11	7	4
Mandi	Belu Dhank	71	295	164	131
Mandi	Bhora	14	85	44	41
Mandi	Fafan	9	39	20	19
Mandi	Jaklin	10	55	32	23
Mandi	Kharyali	0	0	0	0
Mandi	Parlog	38	152	77	75
Total		**670**	**3230**	**1634**	**1596**

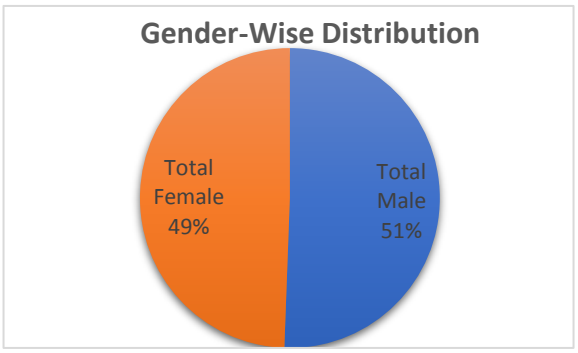
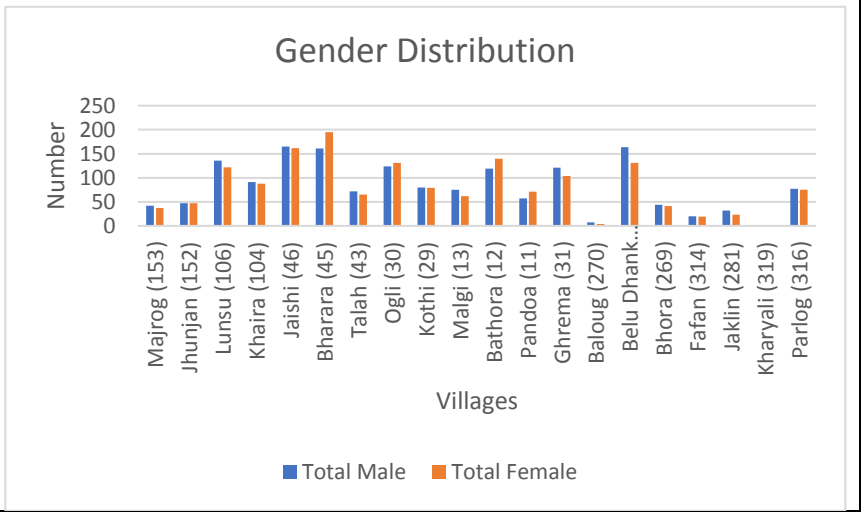


Figure 5: Gender-Wise Distribution in Project Areas



**Source: Census, 2011.*

5.1.1 Demographic Details of Project Affected People

As per primary survey, the total population of 1034 project affected households of 20 villages where land is being acquired for upcoming Sunni HEP is 4683. Out of the total 4683 people 2398 (51%) are males and 2285 (49%) are females. Sex ratio in project affected households is 953. Detailed distribution of households and population is given in the table below:

Table 5-2:Demographic Details of Project Affected People

S. No.	District	Village	Total Male	Total Female	Total Population	No. Of HH
1.	Mandi	Balog	23	18	41	11
2.	Mandi	Beludhank	83	58	141	36
3.	Mandi	Bhora	119	154	273	53
4.	Mandi	Fafaan	14	13	27	8
5.	Mandi	Jakleen	2	3	5	1
6.	Mandi	Kharyali	105	102	207	30
7.	Mandi	Parlog	52	30	82	10
8.	Shimla	Bathora	168	121	289	76
9.	Shimla	Bharada	313	305	618	147
10.	Shimla	Grehna	18	34	52	13
11.	Shimla	Jaishi	410	334	744	189
12.	Shimla	Jhunjhun	122	139	261	38
13.	Shimla	Khera	479	480	959	204

S. No.	District	Village	Total Male	Total Female	Total Population	No. Of HH
14.	Shimla	Kothi	17	27	44	15
15.	Shimla	Lunsu	42	28	70	11
16.	Shimla	Majrog	8	7	15	6
17.	Shimla	Malgi	28	51	79	18
18.	Shimla	Ogli	255	247	502	99
19.	Shimla	Pandoa	87	91	178	44
20.	Shimla	Talaah	53	43	96	25
Total			**2398**	**2285**	**4683**	**1034**

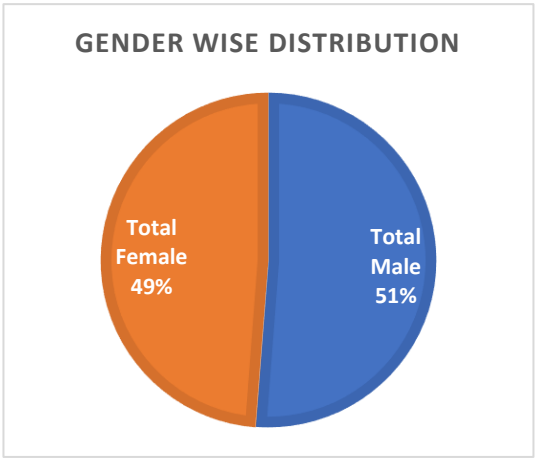
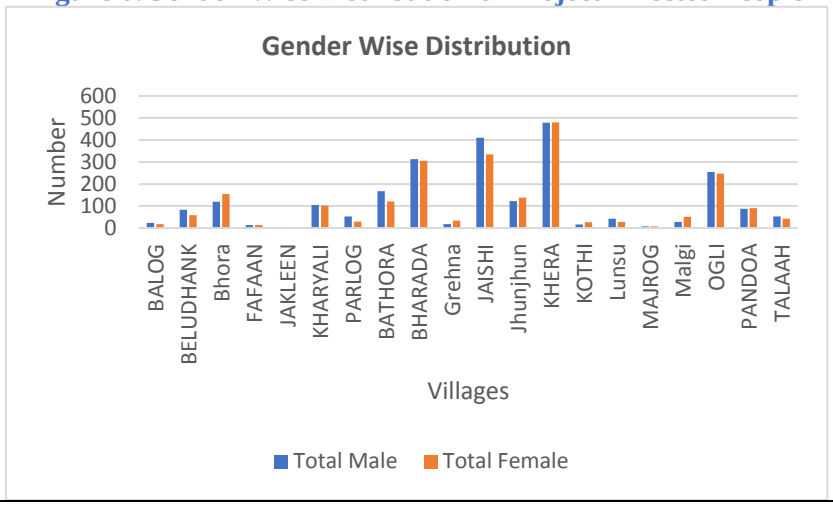


Figure 6:Gender-Wise Distribution of Project Affected People



**Source: Primary Survey.*

5.1.2 Sex Ratio

According to Census 2011, sex ratio across these 20 villages is 976 females per thousand males which is more than the state average of 972 but less than State's Rural sex ratio of 986. Child sex ratio of project villages is 1079 which is more than the state's child sex ratio of 909 and the state's rural average of 986. Out of the total population falling in the age group of 0 to 6 years, 52% are females and 48% are males[18]. Given below is a village wise detailed distribution of child population:

[18] (Census, 2011)

Table 5-3: Child Population in Project Area

S. No	District Name	Name	Child Population (Population in the age group 0-6 Person)		
			Total	Male	Female
1.	Shimla	Majrog	11	6	5
2.	Shimla	Jhunjan	9	6	3
3.	Shimla	Lunsu	17	9	8
4.	Shimla	Khaira	26	15	11
5.	Shimla	Jaishi	44	28	16
6.	Shimla	Bharara	50	22	28
7.	Shimla	Talah	17	11	6
8.	Shimla	Ogli	28	12	16
9.	Shimla	Kothi	23	8	15
10.	Shimla	Malgi	13	8	5
11.	Shimla	Bathora	18	5	13
12.	Shimla	Pandoa	23	6	17
13.	Shimla	Grehna	14	4	10
14.	Mandi	Baloug	0	0	0
15.	Mandi	Belu Dhank	35	16	19
16.	Mandi	Bhora	12	7	5
17.	Mandi	Fafan	2	2	0
18.	Mandi	Jaklin	2	1	1
19.	Mandi	Kharyali	0	0	0
20.	Mandi	Parlog	22	10	12
Total			**366**	**176**	**190**

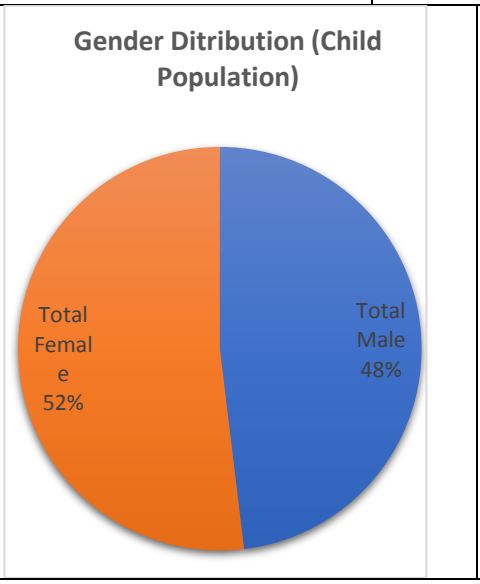
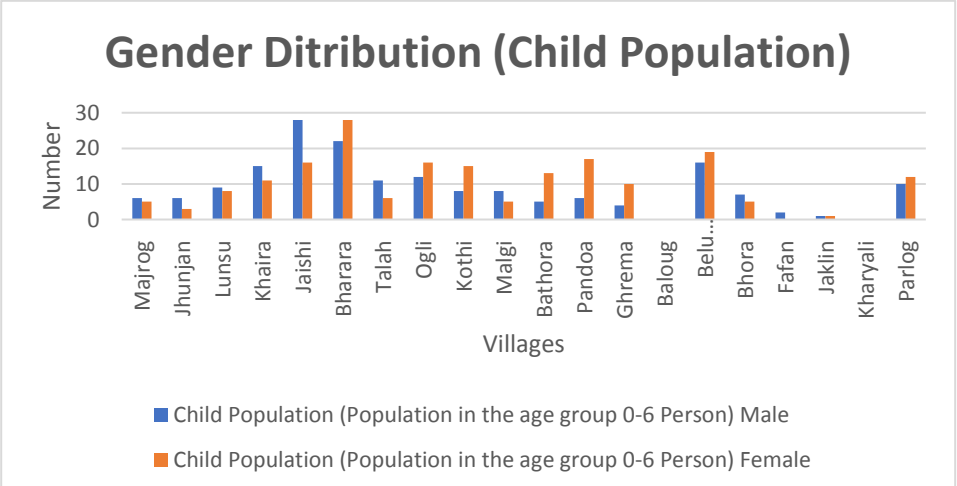


Figure 7: Child Gender Distribution in Project Area



**Source: Census, 2011.*

5.1.3 Social Groups

According to Census 2011, there are total 644 schedule cast persons out of which 314 are males and 330 are females in the project area. There are no schedule tribes in the area under impact.

Table 5-4: Scheduled Castes population in Project Area

S. No	District Name	Name	Scheduled Castes population		
			Total	Male	Female
1.	Shimla	Majrog	22	11	11
2.	Shimla	Jhunjan	0	0	0
3.	Shimla	Lunsu	27	12	15
4.	Shimla	Khaira	0	0	0
5.	Shimla	Jaishi	167	84	83
6.	Shimla	Bharara	85	34	51
7.	Shimla	Talah	45	21	24
8.	Shimla	Ogli	34	15	19
9.	Shimla	Kothi	58	26	32
10.	Shimla	Malgi	27	17	10
11.	Shimla	Bathora	21	10	11
12.	Shimla	Pandoa	16	8	8
13.	Shimla	Grehna	42	21	21
14.	Mandi	Baloug	0	0	0
15.	Mandi	Belu Dhank	50	27	23
16.	Mandi	Bhora	4	3	1
17.	Mandi	Fafan	0	0	0
18.	Mandi	Jaklin	0	0	0
19.	Mandi	Kharyali	0	0	0
20.	Mandi	Parlog	46	25	21
Total			**644**	**314**	**330**

**Source: Census, 2011.*

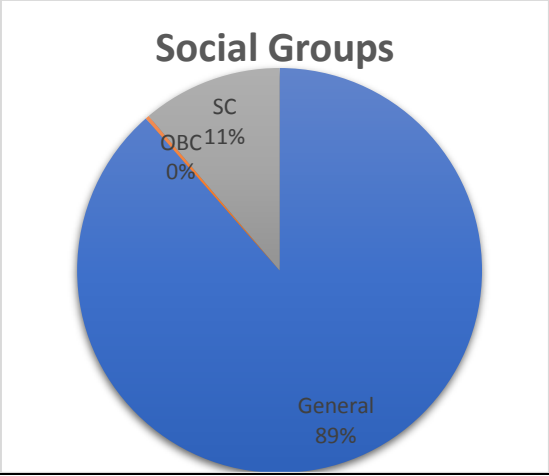
5.1.3.1 Social Groups in Project Affected People

As per the primary survey, out of total 4683 PAPs, 4145 (89%) fall in the general category, 524 (11%) are schedule castes and 14 (0.3%) of them belong to other backward class. Given below in the table is a detailed village wise distribution of PAPs into different social groups across 20 villages where land is getting acquired for the upcoming Sunni Dam HEP:

Table 5-5: Social Groups in PAPs

S. No.	District	Village	General	OBC	SC	Total
1	Mandi	BALOG	41			41
2	Mandi	BELUDHANK	141			141
3	mandi	Bhaunra	268		5	273
4	Mandi	FAFAAN	5		22	27
5	Mandi	JAKLEEN	5			5
6	Mandi	KHARYALI	195		12	207
7	Mandi	PARLOG	79	3		82
8	Shimla	BATHORA	275		14	289
9	Shimla	BHARADA	591		27	618
10	Shimla	Grehna	52			52
11	Shimla	JAISHI	586	10	148	744
12	Shimla	Jhujhan	261			261
13	Shimla	khaira	944		15	959
14	Shimla	KOTHI	3		41	44
15	Shimla	Lunsu	70			70
16	Shimla	MAJROG	15			15
17	Shimla	Malgi	79			79
18	Shimla	OGLI	346	1	155	502
19	Shimla	PANDOA	93		85	178
20	Shimla	TALAAH	96			96
Grand Total			**4145**	**14**	**524**	**4683**

Figure 8: Social Groups in PAPs



**Source: Primary Survey.*

5.1.4 Literacy

As per the census of India 2011, literacy rate of Himachal Pradesh is 83% and literacy rate of Himachal Pradesh Rural is 82%. Out of the total population of 3230 in project area only 2367 (73%) of population is literate which is less than the state's overall average and state's rural average. Out of this 2367 literate population 1319 (56%) are male and 1048 (44%) are female. Among the remaining illiterate population of 863 (27%), 548 (63%) are female and 315 (37%) are male[19]. Given below in the table is a detailed village wise distribution of literacy status:

Table 5-6: Literacy Status in Project Area

S. No.	District Name	Name	Literates			Illiterate		
			Total	Male	Female	Total	Male	Female
1.	Shimla	Majrog	50	27	23	29	15	14
2.	Shimla	Jhunjan	71	35	36	23	12	11
3.	Shimla	Lunsu	214	120	94	44	16	28
4.	Shimla	Khaira	127	69	58	52	22	30
5.	Shimla	Jaishi	235	124	111	92	41	51
6.	Shimla	Bharara	263	129	134	93	32	61
7.	Shimla	Talah	90	50	40	47	22	25
8.	Shimla	Ogli	192	103	89	63	21	42
9.	Shimla	Kothi	119	67	52	40	13	27
10.	Shimla	Malgi	105	59	46	32	16	16
11.	Shimla	Bathora	201	103	98	58	16	42
12.	Shimla	Pandoa	76	44	32	52	13	39
13.	Shimla	Grehna	174	109	65	51	12	39
14.	Mandi	Baloug	9	7	2	2	0	2
15.	Mandi	Belu Dhank	207	136	71	88	28	60
16.	Mandi	Bhora	64	34	30	21	10	11
17.	Mandi	Fafan	25	16	9	14	4	10
18.	Mandi	Jaklin	36	24	12	19	8	11
19.	Mandi	Kharyali	0	0	0	0	0	0
20.	Mandi	Parlog	109	63	46	43	14	29
Total			**2367**	**1319**	**1048**	**863**	**315**	**548**

[19] (Census, 2011)

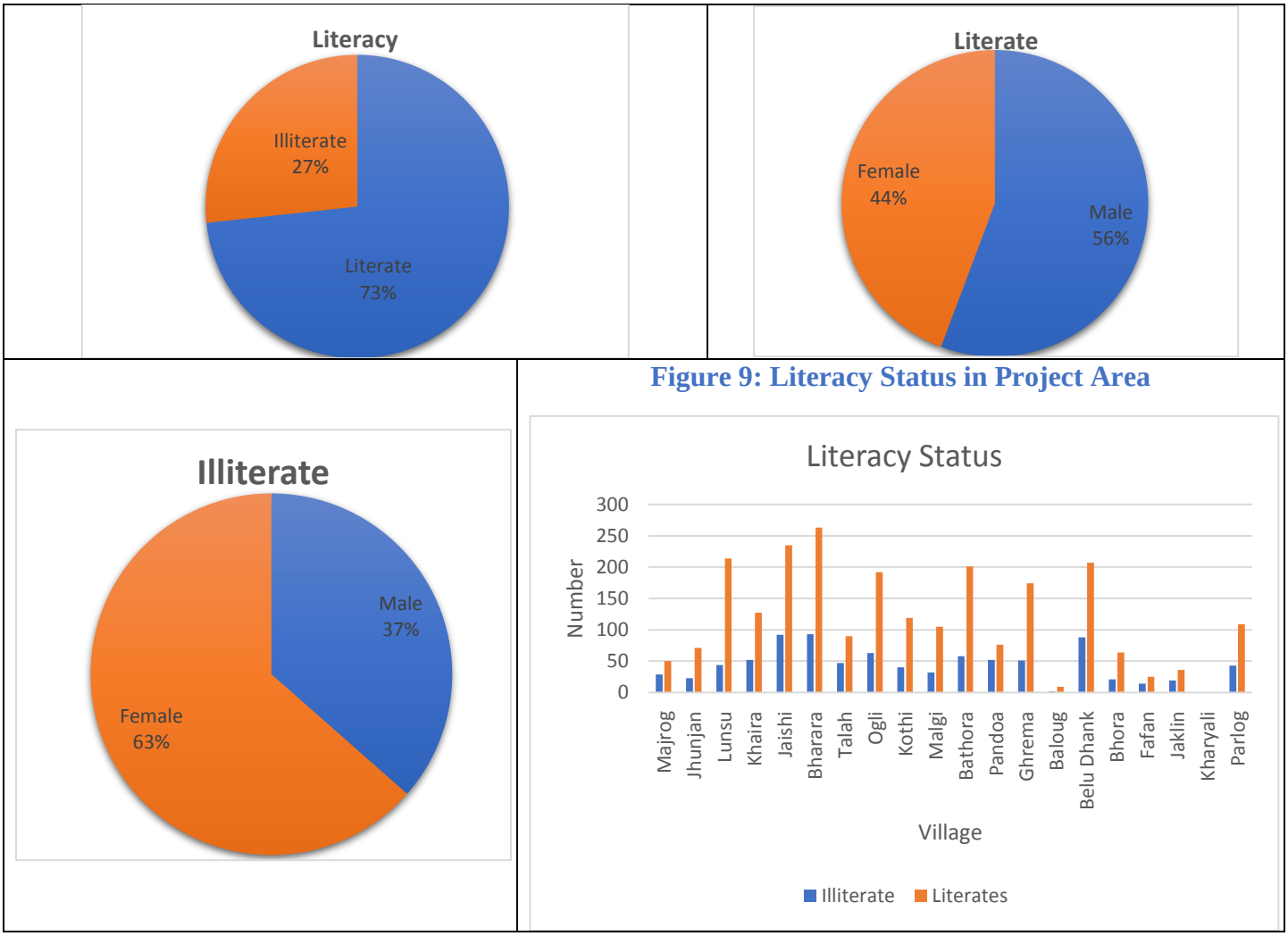


Figure 9: Literacy Status in Project Area

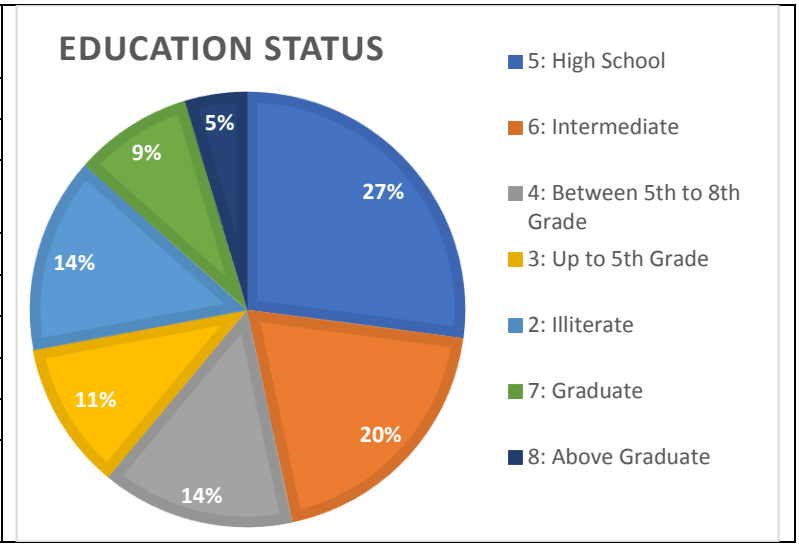
**Source: Census, 2011.*

5.1.4.1 Literacy Status of PAPs

As per the primary survey, out of the total 4683 PAPs , 1240 (27%) are high school passouts, 897 (20%) are intermediate pass outs, 658 (14%) have done schooling between 5th to 8th grade, 504 (11%) have done schooling upto 5th grade, 403 (9%) of them are graduates, 211 (5%) are post graduates, 104 (2%) are literates and 666 (14%) are illiterartes. Given below in the table is the status of literacy among PAPs:

Table 5-7: Literacy Status of PAPs

S. No	Education	Female	Male	Total
1.	High School	491	749	1240
2.	Intermediate	326	571	897
3.	Between 5th to 8th Grade	328	330	658
4.	Up to 5th Grade	300	204	504
5.	Illiterate	467	199	666
6.	Graduate	174	229	403
7.	Above Graduate	95	116	211
8.	Literate	34	70	104
Total		**2215**	**2468**	**4683**



**Source: Primary Survey*

5.2 Economic Profile

As per the Census 2011, out of total 3230 people in project villages, 1990 (62%) is the total work force (Main + Marginal). Out of this workforce of 1990, 1053 (53%) are males and 937 (47%) are females.[20]

Table 10: Work Force in Project Area

S. No.	District Name	Name	Total Population	Work Force		
				Total	Male	Female
1.	Shimla	Majrog	79	52	27	25
2.	Shimla	Jhunjan	94	74	36	38
3.	Shimla	Lunsu	258	173	99	74
4.	Shimla	Khaira	179	117	60	57
5.	Shimla	Jaishi	327	218	103	115
6.	Shimla	Bharara	356	224	100	124
7.	Shimla	Talah	137	87	42	45
8.	Shimla	Ogli	255	161	70	91
9.	Shimla	Kothi	159	104	55	49
10.	Shimla	Malgi	137	55	46	9
11.	Shimla	Bathora	259	79	68	11
12.	Shimla	Pandoa	128	78	36	42

[20] (Census, 2011)

S. No.	District Name	Name	Total Population	Work Force		
				Total	Male	Female
13.	Shimla	Grehna	225	152	82	70
14.	Mandi	Baloug	11	7	5	2
15.	Mandi	Belu Dhank	295	218	126	92
16.	Mandi	Bhora	85	45	24	21
17.	Mandi	Fafan	39	28	15	13
18.	Mandi	Jaklin	55	34	18	16
19.	Mandi	Kharyali	0	0	0	0
20.	Mandi	Parlog	152	84	41	43
Total			**3230**	**1990**	**1053**	**937**

**Source: Census, 2011.*

5.2.1 Main Working Population

As per the Census 2011, out of the total 1990 work force in project villages, 1281 (64%) fall in the category of Main Working Population that is people who are employed for more than 180 days in a year. Out of this 1281, 754 (59%) are males and 527 (41%) are females. Given below in the table is a village wise classification of main working population into different categories like cultivators, agricultural labourers, house hold industries population and others.[21]

Table 5-8:Main Working Population in Project Area

S. No.	District Name	Name	Total Work Force	Main Cultivator Population			Main Agricultural Labourers Population			Main Household Industries Population			Main Other Workers Population			Total Main Working Population		
				Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
1.	Shimla	Majrog	52	30	18	12	0	0	0	0	0	0	6	5	1	36	23	13
2.	Shimla	Jhunjan	74	20	17	3	0	0	0	0	0	0	10	9	1	30	26	4
3.	Shimla	Lunsu	173	144	72	72	0	0	0	0	0	0	29	27	2	173	99	74
4.	Shimla	Khaira	117	106	51	55	0	0	0	0	0	0	11	9	2	117	60	57
5.	Shimla	Jaishi	218	0	0	0	0	0	0	0	0	0	23	19	4	23	19	4
6.	Shimla	Bharara	224	0	0	0	0	0	0	0	0	0	28	22	6	28	22	6
7.	Shimla	Talah	87	51	17	34	0	0	0	2	2	0	12	11	1	65	30	35

[21] (Census, 2011)

S. No.	District Name	Name	Total Work Force	Main Cultivator Population			Main Agricultural Labourers Population			Main Household Industries Population			Main Other Workers Population			Total Main Working Population		
				Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
8.	Shimla	Ogli	161	119	40	79	0	0	0	3	3	0	24	17	7	146	60	86
9.	Shimla	Kothi	104	1	1	0	0	0	0	0	0	0	21	17	4	22	18	4
10.	Shimla	Malgi	55	40	36	4	0	0	0	0	0	0	8	6	2	48	42	6
11.	Shimla	Bathora	79	63	54	9	0	0	0	0	0	0	8	7	1	71	61	10
12.	Shimla	Pandoa	78	57	26	31	2	0	2	0	0	0	18	10	8	77	36	41
13.	Shimla	Grehna	152	141	74	67	7	4	3	0	0	0	4	4	0	152	82	70
14.	Mandi	Baloug	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15.	Mandi	Belu Dhank	218	192	110	82	2	1	1	0	0	0	3	3	0	197	114	83
16.	Mandi	Bhora	45	0	0	0	0	0	0	0	0	0	3	1	2	3	1	2
17.	Mandi	Fafan	28	28	15	13	0	0	0	0	0	0	0	0	0	28	15	13
18.	Mandi	Jaklin	34	32	16	16	0	0	0	0	0	0	2	2	0	34	18	16
19.	Mandi	Kharyali	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20.	Mandi	Parlog	84	18	18	0	0	0	0	0	0	0	13	10	3	31	28	3
Total			**1990**	**1042**	**565**	**477**	**11**	**5**	**6**	**5**	**5**	**0**	**223**	**179**	**44**	**1281**	**754**	**527**

**Source: Census, 2011.*

Out of the total Main working population, 1042 (81.34%) are cultivators, 11 (0.86%) are agricultural labourers, 5 (0.39%) are involved in household industries and 223 (17.41%) are categorized as other workers.

Table 5-9: Classification of Main Working Population in Project Area

S. No.	Category	Total	Male	Female
1	Main Cultivator Population	81.34%	74.93%	90.51%
2	Main Agricultural Labourers Population	0.86%	0.66%	1.14%
3	Main Household Industries Population	0.39%	0.66%	0.00%
4	Main Other Workers Population	17.41%	23.74%	8.35%
5	Total Main Working Population	100.00%	100.00%	100.00%

**Source: Census, 2011.*

5.2.2 Marginal Workers

As per the Census 2011, out of total 1990 work force in project villages, 709 (36%) persons are marginally employed that is employed for less than 180 days every year. Out of this 709, 299 (42%) are males and 410 (58%) are females. Given below in the table is a village wise classification of marginal working population into different categories like cultivators, agricultural labourers, house hold industries population and others.[22]

Table 5-10: Marginal Workers in Project Area

S. No.	District Name	Name	Total Work Force	Marginal Workers														
				Cultivator			Agriculture Labourers			Household Industries			Other Workers			Total		
				Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
1.	Shimla	Majrog	52	16	4	12	0	0	0	0	0	0	0	0	0	16	4	12
2.	Shimla	Jhunjan	74	42	10	32	0	0	0	1	0	1	1	0	1	44	10	34
3.	Shimla	Lunsu	173	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4.	Shimla	Khaira	117	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.	Shimla	Jaishi	218	122	18	104	36	31	5	1	1	0	36	34	2	195	84	111
6.	Shimla	Bharara	224	124	22	102	24	19	5	2	2	0	46	35	11	196	78	118
7.	Shimla	Talah	87	21	11	10	0	0	0	0	0	0	1	1	0	22	12	10
8.	Shimla	Ogli	161	15	10	5	0	0	0	0	0	0	0	0	0	15	10	5
9.	Shimla	Kothi	104	81	36	45	1	1	0	0	0	0	0	0	0	82	37	45
10.	Shimla	Malgi	55	6	4	2	0	0	0	1	0	1	0	0	0	7	4	3
11.	Shimla	Bathora	79	8	7	1	0	0	0	0	0	0	0	0	0	8	7	1
12.	Shimla	Pandoa	78	0	0	0	0	0	0	0	0	0	1	0	1	1	0	1
13.	Shimla	Grehna	152	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14.	Mandi	Baloug	7	7	5	2	0	0	0	0	0	0	0	0	0	7	5	2
15.	Mandi	Belu Dhank	218	21	12	9	0	0	0	0	0	0	0	0	0	21	12	9
16.	Mandi	Bhora	45	42	23	19	0	0	0	0	0	0	0	0	0	42	23	19
17.	Mandi	Fafan	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

[22] (Census, 2011)

S. No.	District Name	Name	Total Work Force	Marginal Workers														
				Cultivator			Agriculture Labourers			Household Industries			Other Workers			Total		
				Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
18.	Mandi	Jaklin	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19.	Mandi	Kharyali	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20.	Mandi	Parlog	84	52	12	40	1	1	0	0	0	0	0	0	0	53	13	40
Total			**1990**	**557**	**174**	**383**	**62**	**52**	**10**	**5**	**3**	**2**	**85**	**70**	**15**	**709**	**299**	**410**

**Source: Census, 2011.*

Out of the total marginal working population of 709, 557 (78.56%) are cultivators, 62 (8.74%) are agricultural labourers, 5 (0.71%) are involved in household industries and 85 (11.99%) are doing some other work.

Table 5-11: Classification of Marginal Workers in Project Area

Marginal Workers				
S. No.	**Category**	**Total**	**Male**	**Female**
1	Cultivator	78.56%	58.19%	93.41%
2	Agriculture Labourers	8.74%	17.39%	2.44%
3	Household Industries	0.71%	1.00%	0.49%
4	Other Workers	11.99%	23.41%	3.66%
5	**Total**	**100.00%**	**100.00%**	**100.00%**

**Source: Census, 2011.*

5.2.3 Non-Working Population

As per the Census 2011, out of total 3230 people in project villages, 1240 (38%) fall in the category of non-working population. Out of this 1240 non-working population, 47% (581) are males and 53% (659) are females.

Table given below shows a village wise distribution of non-working population in the project area:

Table 5-12: Non-Working Population in Project Area

S. No.	District Name	Name	Total Population	Non-Working Population		
				Total	Male	Female
1.	Shimla	Majrog	79	27	15	12
2.	Shimla	Jhunjan	94	20	11	9
3.	Shimla	Lunsu	258	85	37	48
4.	Shimla	Khaira	179	62	31	31
5.	Shimla	Jaishi	327	109	62	47
6.	Shimla	Bharara	356	132	61	71
7.	Shimla	Talah	137	50	30	20
8.	Shimla	Ogli	255	94	54	40
9.	Shimla	Kothi	159	55	25	30
10.	Shimla	Malgi	137	82	29	53
11.	Shimla	Bathora	259	180	51	129
12.	Shimla	Pandoa	128	50	21	29
13.	Shimla	Grehna	225	73	39	34
14.	Mandi	Baloug	11	4	2	2
15.	Mandi	Belu Dhank	295	77	38	39
16.	Mandi	Bhora	85	40	20	20
17.	Mandi	Fafan	39	11	5	6
18.	Mandi	Jaklin	55	21	14	7
19.	Mandi	Kharyali	0	0	0	0
20.	Mandi	Parlog	152	68	36	32
Total			**3230**	**1240**	**581**	**659**

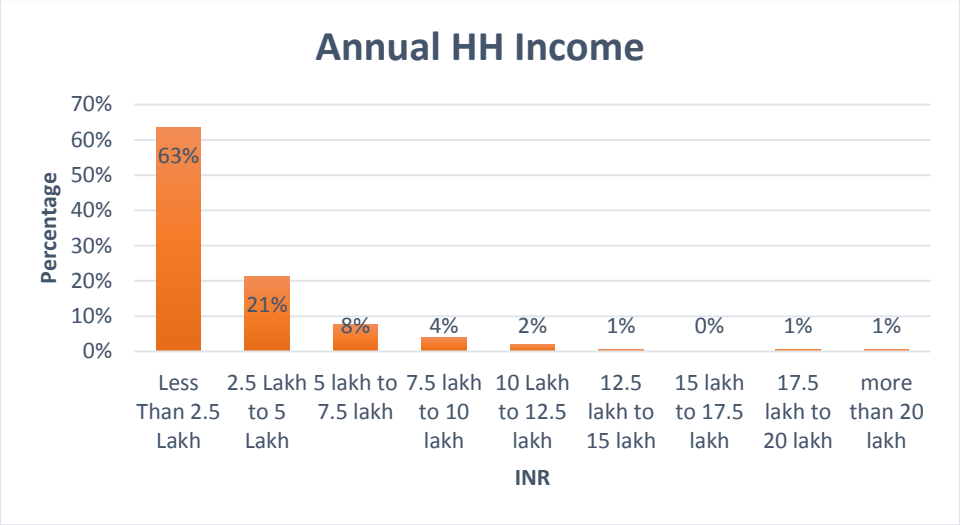
**Source: Census, 2011.*

5.3 Income and Poverty Levels

Main source of income in the project area is Primary Sector. As per the primary survey, out of total 1034 project affected households, 651 (63%) have annual house hold income less than 2.5 lakhs rupees. Almost 217 (21%) have house hold income between 2.5 lakh to 5 lakh rupees annually. 83 (8%) of them have their house hold income between 5 lakh to 7.5 lakh annually, almost 21 (2%) have it between 10 lakh to 12.5 lakh and remaining 62 (6%) have their annual house hold income more than 12.5 lakh rupees.

Almost 82 (2%) of the PAPs in the project area fall in the category of BPL population.

Figure 11: Annual House Hold Income of PAPs



**Source: Primary Survey.*

Indebtedness: As per the analysis of survey data of primary stakeholders it was found that the indebtedness is low among the PAPs. Only 10 people shared about taking loans. Out of those ten people, 5 took loan for agricultural purposes, 2 took it to invest in their business, followed by 1 respondent who took a loan for construction of his home, 1 person took loan to buy Private/Commercial car and 1 person has taken loan for his daughter's marriage.

5.4 Vulnerable groups

Vulnerable groups are the groups which would be vulnerable under any circumstances (e.g. where the adults are unable to provide an adequate livelihood for the household for reasons of disability, illness, age, gender or some other characteristic), and groups whose resource endowment is inadequate to provide sufficient income from any available source.[23]

The vulnerable groups that face discrimination include- Women, old age, physical and mental disability, People suffering from some major illness etc. Sometimes each group faces multiple barriers due to their multiple vulnerabilities. For example, in a patriarchal society, disabled women face double discrimination of being a woman and being disabled.

The table given below summarizes the status of vulnerable households/ individuals in the project area:

[23] (Aggarwal)

Table 5-13: Vulnerable Groups in Project Area

S. No	Vulnerable Groups	Total PAPs	Title Holders
1.	Women Headed Households	400	391
2.	Households Headed by physically handicapped person	25	25
3.	BPL Persons	82	80
4.	Widow Women	141	93
5.	Divorced Women	11	11
6.	PWD Females	23	20
7.	PWD Males	17	17
8.	People Suffering from Polio	3	3
9.	People Suffering from Paralysis	3	3
10.	People Suffering from Other Major Illness	5	3
11.	SC Category	524	164
12.	Elderly Persons	633	399

**Source: Primary Survey*

Out of the total 1034 households, 400 (39%) are headed by females out of which 391 are titleholders. 25 (2%) households are headed by a physically handicapped person in the project area.

Also, among the PAPs, 82 (2%) belong to BPL category out of which 80 are titleholders. State's average percentage of BPL population is 8.06% and state's rural average is 8.48%[24].

141 women are widows out of which 93 are titleholders, 11 women are divorced, 23 females and 17 males are physically challenged and 11 persons are suffering from major illness including Polio and Paralysis. 524 people belong to SC category out of which 164 are titleholders. 633 persons are above 60 years of age out of which 399 are titleholders.

5.5 Land use and livelihood

Out of the total land of 53.1964 Ha under acquisition, 33.68 Ha (63%) of land is cultivated and 19.52 Ha (37%) of land is uncultivated. Only 9.45 Ha (18%) of the total land under acquisition is irrigated and rest 43.75 Ha (82%) is unirrigated. In the table given below is the district wise distribution of cultivated/uncultivated and irrigated/unirrigated land under acquisition:

Table 5-14: Land use in Project Area

District	Cultivated	Uncultivated	Total	Irrigated	Unirrigated	Total
	Area of private land under acquisition (Ha)					
Mandi	7.4302	01.5121	8.9423	4.7178	4.2245	8.9423
Shimla	26.2498	18.0043	44.2541	4.7279	39.5262	44.2541

[24] (Planning Commission)

District	Cultivated	Uncultivated	Total	Irrigated	Unirrigated	Total
	Area of private land under acquisition (Ha)					
Total	33.68	19.5164	53.1964	09.4457	43.7507	53.1964

**Source: Primary Survey*

Cropping pattern of an economy indicates the relative importance given by the farmers, to various crops, at a given point of time. The cropping pattern in a region changes in accordance to changes in economic, institutional, infrastructural and technological factors along with limited land resources. Out of the total PAPs in the project area, almost 91% are using their land for cultivation which is one of their sources of livelihood as well. Out of these 91%, almost 93% of them are involved in multi-cropping as per the season. Given below are details of various crops grown by the PAPs in various seasons:

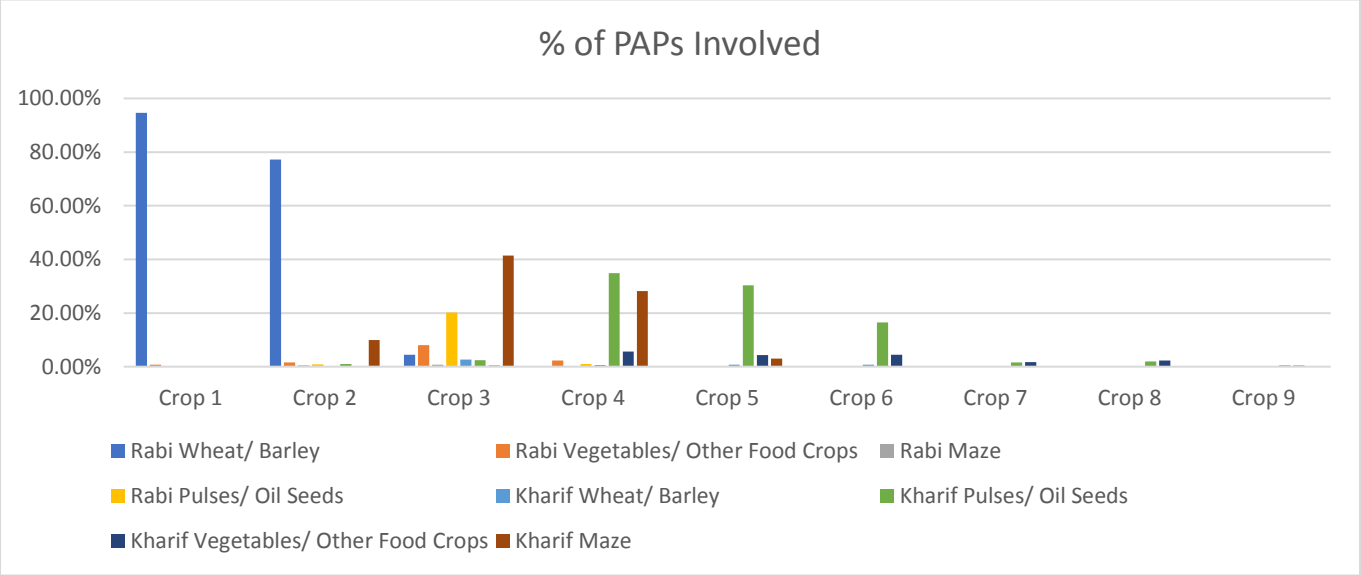
Table 5-15: Major Crops in Project Area

S. No	Season	Name of Crop	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5	Crop 6	Crop 7	Crop 8	Crop 9
			% of PAPs Involved								
Agriculture											
1	Rabi	Wheat/ Barley	94.64%	77.16%	4.50%	0.09%	0.00%	0.00%	0.00%	0.00%	0.00%
2		Vegetables/ Other Food Crops	0.78%	1.56%	8.05%	2.34%	0.00%	0.09%	0.00%	0.00%	0.00%
3		Maze	0.00%	0.52%	0.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
4		Pulses/ Oil Seeds	0.00%	0.87%	20.24%	0.95%	0.00%	0.00%	0.00%	0.00%	0.00%
5	Kharif	Wheat/ Barley	0.00%	0.17%	2.60%	0.61%	0.69%	0.78%	0.00%	0.09%	0.00%
6		Pulses/ Oil Seeds	0.09%	0.96%	2.43%	34.86%	30.28%	16.44%	1.56%	1.90%	0.52%
7		Vegetables/ Other Food Crops	0.00%	0.00%	0.43%	5.62%	4.33%	4.50%	1.64%	2.25%	0.35%
8		Maze	0.00%	9.95%	41.44%	28.20%	3.03%	0.17%	0.00%	0.00%	0.00%
Horticulture											
1.	Horti culture	Apple	0.00%	0.00%	0.09%	0.00%	0.52%	0.78%	0.78%	0.17%	0.00%
2.		Palam	0.00%	0.17%	0.00%	0.00%	0.00%	0.00%	0.00%	0.17%	0.35%
3.		Guava	0.00%	0.00%	0.09%	0.17%	0.00%	0.00%	0.00%	0.00%	0.00%
4.		Pomegranate	0.00%	0.00%	0.43%	0.09%	0.00%	0.17%	0.87%	0.43%	0.09%
5.		Mango	0.00%	0.00%	0.00%	0.26%	0.09%	0.09%	0.17%	0.52%	0.35%

6.		Lemons	0.00%	0.00%	0.61%	0.69%	0.61%	0.09%	0.35%	0.35%	0.52%
7.		Peach	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.17%

**Source: Primary Survey*

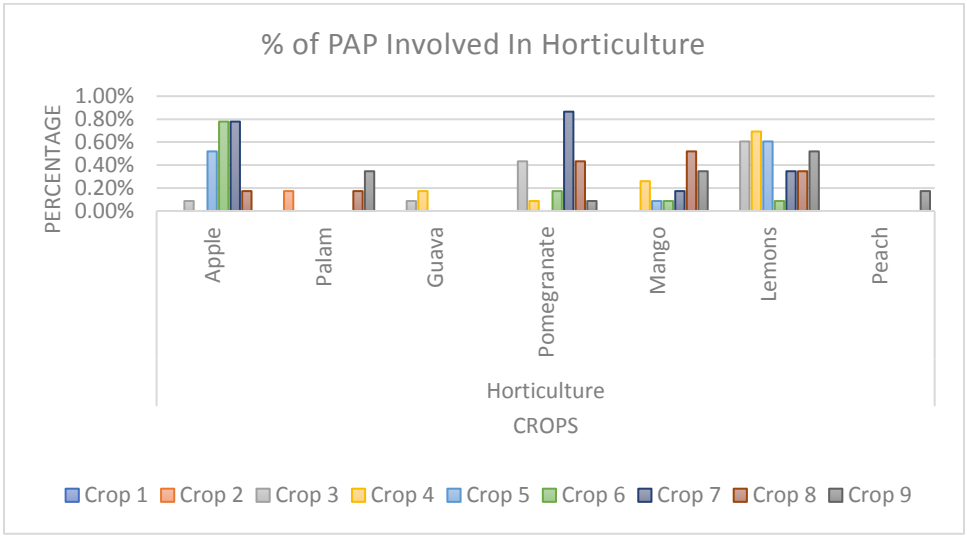
Figure 12: Major Crops Grown by PAPs



**Source: Primary Survey*

Major crops of Rabbi season (October to February) are Wheat and Oil seeds. In Kharif season (July to September) corns, pulses, oil seeds and vegetables are grown mostly.

Figure 12: PAPs Involved Growing Horticulture Crops



Source: Primary Survey

Less than 1% of the PAPs are involved in Horticulture with Apple, Guava, Plum, Pomegranate, Mango as main products.

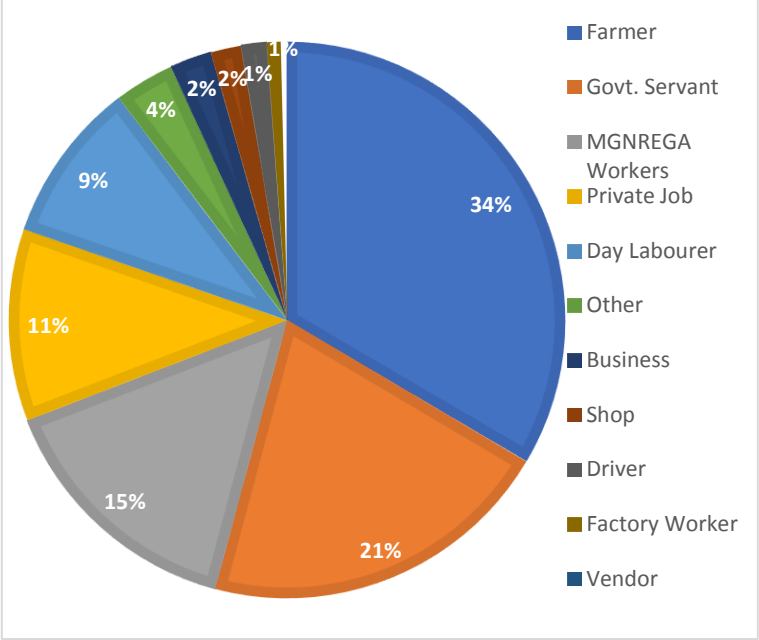
5.6 Local economic activities

Out of total 4683 PAPs, 2433 (52%) are working. Out of this 2433 815 (33.5%) are farmers, 503 (20.7%) are government servants, 364 (15%) are working under MGNREGA scheme, 272 (11.2%) are doing private jobs, 228 (9.4%) are day labourers and remaining 251 (10.3%) are doing some other work including shopkeepers, drivers, factory workers, vendors, construction workers and ragmans. Given below is a list of main economic activities in the project area.

Table 5-16: Local Economic Activities in Project Area

S. No	Economic Activity	Female	Male	Total	% of Total Working Population
1	Farmer	193	622	815	33.5%
2	Govt. Servant	95	408	503	20.7%
3	MGNREGA Workers	329	35	364	15.0%
4	Private Job	41	231	272	11.2%
5	Day Labourer	18	210	228	9.4%
6	Other	28	57	85	3.5%
7	Business	9	50	59	2.4%
8	Shop	10	33	43	1.8%
9	Driver	2	34	36	1.5%
10	Factory Worker	17	2	19	0.8%
11	Vendor	3	1	4	0.2%
12	Construction Worker	1	3	4	0.2%
13	Ragman		1	1	0.0%
Total		**746**	**1687**	**2433**	**100%**

Figure 13: Local Economic Activities in Project Area



Source: Primary Survey

5.7 Factors that contribute to local livelihoods

Many social and natural factors contribute to the choices and availability of livelihood options like education, sex ratio, social status of women, availability of infrastructure, including agro-climatic conditions, institutional conditions of an area, availability of natural resources, connectivity to neighboring areas, location and topography.

The agrarian structure of a region describes the relative position of different category of farmers with respect to ownership and operation of land. Since land constitutes as an important income-generating asset of the PAPs, a change in the agrarian structure due to land holding pattern would reflect relative prosperity or destitution of different sections of project villages.

Since 25% of the PAPs are farmers therefore climatic conditions and factors affecting agriculture hold key factor affecting the local livelihood. Climatic conditions are the primary influents controlling the distribution of agricultural patterns. The influences of climate on human activity are so vital and varied that farmers have consciously sought to know and understand it for the sake of their survival.

In a situation when land area is more or less fixed but population is growing and the development process does not lead to a proportionate transfer of growing population from agriculture to non-agriculture, then the absolute number of persons and households dependent on agriculture will inevitably increase. This will lead to an increase in the number of marginal farmers and landless agricultural labourers proportionately during the course of development. In fact, the given structure sets a precondition to the manner in which the productive resource would be utilized in a region. The rate of adoption of technological innovations is markedly influenced by the existing structure of land holdings. In turn, the structure itself gets transformed under the effect of technology.

In rural Himachal Pradesh, the land ownership distribution presents a typical character, in that a vast majority of farmers are marginal and a very few can be regarded big by any standard. The distribution follows a skew pattern. Such a pattern gives a picture of uneven distribution of land holdings among different strata and indicates a high degree of inequality. An important feature of Himachal Pradesh's agrarian structure is the continuing predominance of the small level peasantry, both in number and area.

It is generally agreed that agricultural growth depends upon rural infrastructure such as the spread and quality of irrigation, land development, extent of rural electrification and the spread of rural roads. As with the level of human skills, good infrastructure not only increases the productivity of existing resources going into production and therefore helps growth, it also helps to attract more investment, which can be expected to increase growth further.

5.8 Kinship patterns

In Himachal Pradesh, land rights are only passed onto from one generation to the next. As per the state rules, any migrant cannot buy a land in the “Devbhoomi”. Therefore, the land here is an

ancestral property and it only gets distributed to the children/wife equally unless their Will says otherwise.

In many cases, it is observed that the names of the present land owners not yet updated with the Revenue Department even after the demise of the original landowner. In case of death of any landowner, the ownership of land gets automatically transferred to their children/wife.

During the primary survey, many of the current landowners in project area shared that after the marriage of their sister/s, the brothers are the practical owners of the land as they are protecting the land and also producing agricultural products. According to many respondents, it is one of major sources of their livelihoods and dividing the land further would leave them economically vulnerable. They also shared that the sisters are engaged in farming of the land of their marital family. Although in many cases, the sisters have verbally transferred the ownership to their brothers, none of the transfers are registered with the Revenue Department.

5.9 Administrative, political and civil society organizations

The following organizations were found to have their footprint in the project area

Administrative Organization

1. Panchayat
2. Patwar office
3. IPH
4. Electricity Department
5. Agriculture Department
6. Public Works Department (PWD)

Political Organization

1. BJP
2. Congress
3. CPM

Community based and Civil Society Organization

1. Temple Committee
2. Mahila mandals
    a) Jagriti Mahila mandl Khera
    b) Mahila mandal Ogli
    c) Durga Mahila Mandal Jaishi
    d) Jagriti Mahila Mandal Beludhank
    e) Mahila Mandal Bkhera

f) Jay kaleshwar Mahila Mandal pandohra

3. Yuva Jagran Manch and Yuvak Mandal
   a) Yuvak Mandal Khera
   b) Yuvak Mandal Ogli
   c) Yuvak Mandal Jaishi
   d) Yuvak Mandal Beludhank
   e) Yuvak Mandal Bkhera
   f) Yuvak Mandal pandohra

5.10 Regional Dynamics and Historical Change Processes

In order to understand the regional dynamics and historical change processes of the project area, we need to understand the history and dynamics of the two districts i.e Shimla and Mandi.

District Shimla

The present Shimla district comprises of the 19 small erstwhile Shimla Hill States which were merged with Himachal Pradesh in 1948 and constituted part of the Mahasu district. Apart from these states, the hilly areas of erstwhile Patiala State and areas of Kotkhai, Kotgarh, Shimla town and Jutogh Cantonment
of the provincial government were also included in the district after independence at different stages.

Almost all the erstwhile princely states of Shimla district were subjected to the Gorkha invasions during the beginning of the 19th Century and there were free in the year 1815 when the Gorkha were defeated by
the Britishers and driven out to Nepal. Consequently, the areas belonging to the respective rulers were
restored to them under specific terms. As all the states were of small size both in terms of area and population, these remained under the direct control of the then Superintendent of Punjab Hills States.
These rulers were free in the internal affairs of their states. Almost all the states were founded by the adventurists from plains after the 8th century A.D.

the nearest Urban local body i.e Sunni was created as Notified Area Committees in 1991 Census along with Narkanda, Jubbal, Kotkhai and Chaupal.

District Mandi

Mandi district was formed by the amalgamation of the erstwhile princely states of Mandi and Suket on the formation of Himachal Pradesh on 15th April, 1948. Dr. J. Hutchinson and Dr. Vogel have accounted in the political history of the states that like most of the other hill states,

Mandi takes its names from its capital which is situated on the left bank of the Beas. Mandi is a Hindi word, meaning market and it may possibly be connected with the Sanskrit word ‘mandapika’ meaning an open hall or shed and might have been derived from Sanskrit root ‘mand’ meaning to adorn or distribute.

Sunni is the nearest municipality to the project area located about 25 km from Khaira village (dam site). The State capital Shimla is located 44 km from the project area. The area is connected via MDR 22 which runs parallel to the river.

5.11 Quality of the living Environment

The project area lies on a mountainous topography of the lower Himalayan belt. The region is blessed with rich green environment with deciduous pine forests and rural background. the main economy of the project area is agrarian. Being in the lower Himalayan belt, the area does not face any extremes of temperature in summers nor winters. The average annual temperature ranges from 22-26° C with peak summer temperature reaching around 35-40 °C and the peak minimum temperature reaching 2-5°C during winters. The area also harbors a good amount of wildlife. During the surveys it was observed that the area frequently witnesses sittings of wild animals like leopards, wild bores, Himalayan Monals, red jungle fowl (Jungli murga), foxes, rabbits etc. Conclusively, the overall the quality of living environment as per rural standards of the state can be categorized as good with ample resource of water from Satluj, clean air and thick forest cover.

6 Social Impacts

6.1 Framework and approach to identifying impacts

SIA seeks to assess, in advance, the social repercussions that are likely to follow from projects undertaken to promote development, such as dams, mines, industries, highways, ports, airports, urban development and power projects. It is a tool that can help decision-makers to foresee the likely negative impacts of their actions so that steps necessary to prevent or at least to contain them could be taken in time. As an aid to the decision-making process, SIA provides information on social and cultural factors that need to be taken into account in any decision that directly or indirectly affects the lives of people in the project area.

According to Inter-Organizational Committee on Principles and Guidelines for Social Impact Assessment (IOCPGSIA 2003), a conventional way of conceptualizing social impacts changes to the following:

- People's way of life – that is, how they live, work, play and interact with one another on day to day basis;
- Their culture – that is, their shared beliefs, customs, values and language or dialect;
- Their community – its cohesion, stability, character, services and facilities;
- Their political system – the extent to which people are able to participate in decisions that affect their lives, the level of democratization that is taking place, and the resources provided for this purpose;
- Their environment – the quality of the air and water people use; the availability and quality of food they eat; the level of hazard or risk, dust and noise they are exposed to; the adequacy of sanitation, their physical safety, and their access to and control over resources;
- Their health and wellbeing – health is a state of complete physical, mental, social and spiritual wellbeing and not merely the absence of diseases or infirmities;
- Their personal and property rights – particularly whether people are economically affected, or experience personal disadvantage which may include a violation of their civil liberties;
- Their fears and aspirations – their perceptions about their safety, their fears about the future of their community, and their aspirations for their future and future of their children;
- The process of conducting Social Impact Assessment was designed in a manner which involved all stakeholders in systematic approach to assess the impact of proposed acquisition. The framework & approach to identifying the impacts is shown in following steps.
- Step 1: Background study and case studies
- Step 2: Identification of different PAPs
- Step 3: Preparation of primary survey questionnaire
- Step 4: Conduction of primary survey and FGDs with various Stakeholders

- Step 5: Analysis of data collected
- Step 6: Identifying various impacts and their intensity in project area.

6.2 Description of impacts at various stages of the project

Acquisition of land proposed for the hydro-electric project will have a direct and indirect bearing on livelihood, employment, income, production, health & well-being and quality of life of the community, socio-cultural systems and environment. It may raise doubts and fears about property rights and aspirations. Development projects affect different groups differently.
Many people tend to benefit while some loose. Often, impacts are particularly severe for vulnerable groups viz. women-headed households, widows, persons with physical or mental disability, BPL families, people belonging to reserved categories and elderly persons.

There is a general optimism for the upcoming Sunni HEP project in the area. The study found that 91% of the primary stakeholders were willing to surrender their land for acquisition provided appropriate compensation is paid and only 8% resisted the acquisition process. During the FGDs with Panchayats, the villagers and secondary stakeholders were also found to have a very positive opinion towards the project as it would bring an overall development to the entire area in terms of infrastructure development (both Social and Physical) and increase in employment and business opportunities. Also, they anticipated the increase in land prices of the area which would be a beneficial factor for them.

However, they were also apprehensive about the negative impacts that may rise from the project if not properly mitigated. There were concerns regarding the rise in disputes among stakeholders for receiving the compensation and that the vulnerable groups may be left out or be cheated. Also, since on receiving the compensation amount, there would be a change in the financial condition of the PAFs which in turn would alter their purchasing capacity and would also increase the risk of fund miss-management as many of the landowners are not properly educated, especially regarding financial management. The project area may also experience rise in cases of frauds and cheats once the compensation amount is distributed. There are also chances of changes in cultural practices and traditions because of changes in the spending pattern.

Due to the acquisition, there would also be loss of public infrastructure like ropeways, bridges, cremation grounds, roads, existing irrigation facilities including IPH Infrastructure and also loss of common property resources like drinking water sources, Gharats, forests, grazing grounds etc. A total of 78 structures are getting acquired for the Sunni HEP. These include 38 residential structures, 1 school in village Parlog of Mandi district, 3 pumphouses, 12 Gharats, 1 bridge in Malgi village of Shimla district, 6 ropeways 9 electric poles, 3 water taps, 2 handpumps and 3

water supply pipelines. The details of the loss to infrastructure and assets has been discussed in chapter 4. The PAPs as well as the villagers were concerned about how alternates would be provided to them by the acquiring body such that it would not hamper their daily routine. The villagers have dependency on the adjoining grazing land and forest for cattle fodder and firewood.

During the construction phase of the project, the stakeholders had a positive outlook towards the project as it would generate good direct and indirect employment and business opportunities for them. Due to in migration they would witness increased consumption of goods which would benefit the local economy. However, they also showed concerns regarding the in migration of labour for the project as it would raise the pressure on existing infrastructure like health facilities, educational facilities, roads etc. There may be chances of rise in conflicts among the locals and the in-migrants and the stakeholders also opined that there are chances in rise in crime rates and anti-social activities in the area because of migration. The area may also witness cultural mixing. Further, there would also be problem of traffic, air and noise pollution because of the heavy transport vehicles, material transport and construction. The area may also witness rise in health problems due to construction activities and quarrying.

During the post construction phase, the stakeholders opined that the area may witness reduced pollution and better living environment. Due to funds like LADA the area would also witness further development. A cultural stability may also be witnessed during this stage. However, they also highlighted some negative impacts which may arise during this phase such as, due to drop in construction activities there would be less employment and business opportunities for locals and may also lead to unemployment to the temporary work force involved in the project.

The area may witness sudden fall in local economy and low consumption of goods and services due to out migration of the temporary workers involved in construction stage. Consequently, People may face difficulty in maintaining the living standards set forth due to the increased income level during construction phase.

Table below summarizes various possible social, economical and cultural impacts found by the study at different stages of project cycle:

Table 6-1: Impacts During Various Stages of Project

Stage	Social Impacts	Economic Impacts	Cultural Impacts
Pre-Construction Stage	• Disputes among stakeholders for receiving compensation may arise. • Doubts and fear of the upcoming changes such as rise in water levels,	• Prices of land in surrounding area may increase due to upcoming project. • Sudden change in financial	With change of spending pattern of people getting benefitted due to upcoming project, there would be an

Stage	Social Impacts	Economic Impacts	Cultural Impacts
	humidity, increased landslides etc. • Loss of cremation grounds • Loss of common property such as drinking water resources, gharats, etc will have adverse effect on quality of life.	condition of the PAFs due to the compensation awarded, their purchasing capacity may change and would also increase the risk of fund miss-management. • Loss of infrastructure such as ropeways, existing irrigation facilities, etc will have negative impact on the economy of project affected and surrounding areas. The acquisition of forest land will negatively impact the villagers since they have high dependency for collection of fodder and firewood.	impact on cultural practices and traditions.
Construction Stage	In-migration of construction workers and technical staff will increase burden on existing health care centers, hygiene. Migration may increase pressure on the existing Educational Institutes also. Social divide may be created between people who are getting benefitted from the project and people who remain unaffected. Living standards of the habitants may improve due to the overall development of the area because of the upcoming project. A sense of safety and security may decrease among locals as a result of in-migration. Conflict may rise with outsiders and area may see rise in crime and anti-social activities. The area may witness rise in health problems and diseases due to construction, quarrying etc. Heavy transportation during construction phase may lead to increased air and noise pollution in the	Increased employment and business opportunities for the locals and PAFs. Increased disposable income with the locals. Increased economic activities and consumption patterns. Due to in-migration the area would witness increased consumption of goods and services thereby benefitting the local business.	Due to In-migration people will come from other states and bring their own culture, beliefs, religious practices, clothing patterns etc. which may impact existing cultural practices and traditions of the local habitants.

Stage	Social Impacts	Economic Impacts	Cultural Impacts
	adjoining villages.		
Post-Construction Stage	Pollution caused by construction activities will reduce and the area may witness better living environment. People may face difficulty in maintaining the living standards set forth due to the increased income level during construction phase.	Due to drop in construction activities there would be less employment and business opportunities for locals and may also lead to unemployment to the temporary work force involved in the project. The area may witness sudden fall in local economy due to out migration of the temporary workers involved in construction stage. Due to funds like LADA area may witness further improvement in infrastructure development even after construction phase.	Cultural stability maybe seen during this phase.

**Source: Primary Survey*

6.3 Indicative list of impacts areas

The impacts can be positive or negative. In this project it has been found through surveys and discussions that people expect land acquisition will give them better monetary compensation which inturn would help them in improving their well-being. Though the affected families felt that the loss of land and livelihood etc. would be irreparable. The objective of the household survey was to generate an inventory of social impacts on the project affected families, type and ownership of property, type of impact and its magnitude and details of affected property. The major findings and magnitude of impacts are discussed in the following sections.

6.3.1 Impacts on Landowners

The proposed project requires land for catchment area, dumping area, roads, establishment of power sub-stations, construction of administrative buildings, etc. Under the current land acquisition 1045 titleholders loosing 100% of their land belonging to the Khasra under acquisition and 802 titleholders are loosing part of their land belonging to the Khasra under acquisition out of which 746 (93%) reported that the remaining piece of land will still be usable for them.

Only 19 land owner responded that they do not own any other land in the same or any other panchayat apart from what was coming under acquisition either partly or wholly. Out of these 19 landowners, 10 landowners are loosing their entire parcel of land from the acquisition and have opted for project assisted relocation within the same Gram Panchayat. Out of the remaining 9 landowners, 3 opted for compensation in form of cash for land, 6 opted for compensation in form of land for land preferably within the same Gram Panchayat. Only 2 out of these 9 landowners reported that the remaining piece of land would be usable even after acquisition.

There are 38 residential structures coming under acquisition out of which 18 structures are in Bharara village. Table 6-2 gives the village wise details of residential structures coming under acquisition.

96% have reported to practice agriculture/horticulture on the land being acquired with varying intensity. The anticipated impacts will be loss of land which will deprive the affected families of their agricultural income and alter the way of life. Further, the project involves construction work which will affect the adjacent landowners and others due to air and water pollution.

However, out of the total land requirement of 440.39 Ha for the project. Only 53.196 Ha (12%) of private land is coming under acquisition which is the bare minimum alternative. Out of this 53.196 Ha the total cultivable land is 33.68 Ha (63.3%) and the remaining 19.516 Ha is uncultivable Further details of studying less displacing alternatives, and acquisition of minimal land is discussed in chapter 7

6.3.2 Impacts on livelihoods and income

The primary livelihood activity on the land being acquired is agriculture and horticulture. Although none of the stakeholders are completely dependent on agriculture as their main income source. The study found that most of the stakeholders have atleast one family member working in the service sector which serves as their main source of income. However, 819 of the landowners reported that agriculture does play crucial role in maintaining their overall family income. Details of income of PAFs have already been discussed in above chapter.

Also, no tenants/lessees were found during the survey. the stakeholders reported that since the landholding size is small, all agriculture/horticulture work is carried out by the family itself. Seasonally agriculture labour is also employed for a short duration but this labour is temporary and often migrating.

The total loss of agriculture/ horticulture income due to proposed acquisition was calculated to be **Rs. 2,00,59,115.**

Given below is a table listing out major agriculture/ horticulture production in the affected area:

Table 6-2: Agriculture/ Horticulture Production in Affected Area

Category	Type of Crop	Total Production (Kg)
Agriculture	Wheat/ Barley	281291
	Maize	202522
	Pulses/ Oil Seeds	114461
	Vegetables/ Other Food Crops	41361
Horticulture	Apple	10985
	Lemon	3095
	Mango	1652
	Palam	13200
	Pomegranate	1210
	Other	420
Total		**670197**

**Source: Primary Survey.*

6.3.3 Impacts on physical resources

6.3.3.1 Loss of Private Assets

Residential structures located near the river channel would be affected due to the proposed construction activity or submergence. A total of 38 residential structures are getting acquired for the Sunni HEP. 18 out of the 38 residential structures are falling in Bharada village. It was also found that the total ownership on these 38 structures is 146. Apart from residential structures 4 toilets and 4 kitchen are also coming under the acquisition as independent structures. Among other assets attached to the land under acquisition, a total of 14,824 fruit bearing trees, 26,691 non-fruit bearing trees and 7 water tanks are also getting impacted due to the proposed acquisition.

The table below gives the village wise details of the residential structures and assets attached to it being lost due to the proposed acquisition.

It should be noted that the figures of fruit and non-fruit bearing trees is as per respondents. However, the actual number of the trees will be enumerated and the actual value will be assessed by the competent authorities

Table 6-3: Loss of structures

District	Village	Residential Structures	Independent toilet structures	Independent Kitchen structures	Water Tanks	Fruit bearing trees	Non-fruit bearing trees
Mandi	BALOG	2					
Shimla	BATHORA	0				1651	2370

District	Village	Residential Structures	Independent toilet structures	Independent Kitchen structures	Water Tanks	Fruit bearing trees	Non-fruit bearing trees
Mandi	BELUDHANK	2				422	170
Shimla	BHARADA	18	1	1	1	1513	1988
Mandi	Bhora	0				1470	250
Mandi	FAFAAN	3	1	1	2	16	100
Shimla	Grehna	1					75
Shimla	JAISHI	2				1470	2048
Mandi	JAKLEEN	0				50	100
Shimla	Jhujhun	1	1	1	3	320	765
Mandi	KHARYALI	0				250	1169
Shimla	KHERA	1				4198	10806
Shimla	KOTHI	1				25	460
Shimla	Lunsu	0				170	
Shimla	MAJROG	0					47
Shimla	Malgi	1				131	240
Shimla	OGLI	3	1	1	1	955	3533
Shimla	PANDOA	2				510	910
Mandi	PARLOG	0				1330	740
Shimla	TALAAH	1				343	920
Total		**38**	**4**	**4**	**7**	**14824**	**26691**

**Source: Primary Survey*

6.3.4 Impact on Biodiversity and Environment

Biological resources are among the most important resources impacted by such huge projects. A detailed baseline study of these resources is essential to estimate the magnitude of potential impacts and to avoid or mitigate any loss caused by the proposed project. It is necessary to have separate detailed Environment Impact Assessment (EIA) done to identify the specific impacts on the flora and fauna in the forest areas of the proposed project.

Further, the total forest land coming under the project is 387.19 Ha. During the study it was found that the villagers were dependent on the forests for collection of fodder and fire wood would now be lost and therefore equivalent alternatives need to be provided.

Many of the respondents also speculated that there would also be increased humidity due to creation reservoir and consequent rise in water levels, risk of water borne diseases, rise in air and noise pollution, possible rise in water pollution due to construction, rise in traffic esp. heavy vehicular traffic etc.

6.3.5 Impacts on public services and utilities

Loss of access to commonly owned assets (forestlands, water bodies, grazing lands, gharats, cremation grounds and so on) is often overlooked and uncompensated, particularly for the asset less as they are considered to be providing indirect benefits to the community which could not be quantified. But absence of the same do affect the quality of life of the community.

Since the acquisition of land is taking place linearly along the river therefore, apart from private land the adjoining forest area is also coming under the project on both banks. The study found that the villagers have dependency on forests for collection of cattle fodder and collection of firewood. Moreover, these areas are also used by villagers as grazing grounds. The dependency on forests was found most in Mogra panchayat.

Similarly, 40 public assets are also being lost under the proposed acquisition which include 1 school in village Parlog of Mandi district, 3 pumphouses, 12 Gharats, 1 bridge in Malgi village of Shimla district, 6 ropeways, 9 electric poles, 3 water taps, 2 handpumps and 3 water supply pipelines.

Since there would be loss of pumphouses and also natural springs in many of the villages, it would impact their existing irrigation and drinking water facilities. Similarly, due to loss of electric poles, the areas would be vulnerable to electricity blackout unless proper alternate measures are taken beforehand to provide electricity to the villages before removing the existing poles.

The acquisition of Ropeways and bridges for the project would create a sharp reduction in the accessibility to the main roads and the connectivity between the villages situated on the opposite side of the river bank. In addition, cremation grounds would be submerged in most of the villages since they are located mostly on river banks. Loss of these utilities would bear a direct negative impact on the economic and socio-cultural lives of the affected population.
Besides this, there will be increased movement of people, material, equipment and in-migration during the construction phase which will create an extra load on the available infrastructure such as roads, existing health and educational facilities etc. which therefore need to be strengthened beforehand.

The table below gives the village wise details of the loss of public services and utilities due to the proposed acquisition.

Table 6-4: Loss of public services and utilities

District	Village	Schools	Pump house	Gharaat	Bridge	Rope way	Electric poles	Water Supply Pipeline	Hand Pump	Water Tap
Shimla	Lunsu	0	0	0	0	0	0	0	0	0
Shimla	Khaira	0	0	0	0	0	4	0	0	0
Shimla	Jaishi	0	0	4	0	1	0	0	0	0
Shimla	Bharada	0	1	1	0	1	1	1	1	1
Shimla	Talaah	0	0	0	0	1	0	0	0	0
Shimla	Ogli	0	1	2	0	1	0	0	0	0
Shimla	Kothi	0	1	0	0	0	0	0	0	0
Shimla	Malgi	0	0	1	1	0	0	0	0	0
Shimla	Bathora	0	0	2	0	0	0	0	0	0
Shimla	Pandoa	0	0	1	0	0	0	0	0	0
Shimla	Grehna	0	0	0	0	1	0	0	0	0
Shimla	Jhujan	0	0	0	0	1	3	2	1	2
Shimla	Majrog	0	0	1	0	0	0	0	0	0
Mandi	Bhaunra	0	0	0	0	0	0	0	0	0
Mandi	Balog	0	0	0	0	0	0	0	0	0
Mandi	Jaklin	0	0	0	0	0	0	0	0	0
Mandi	Fafaan	0	0	0	0	0	1	0	0	0
Mandi	Parlog	1	0	0	0	0	0	0	0	0
Mandi	Beludhank	0	0	0	0	0	0	0	0	0
Mandi	Khariyali	0	0	0	0	0	0	0	0	0
Total		**1**	**3**	**12**	**1**	**6**	**9**	**3**	**2**	**3**

**Source: Primary Survey*

6.3.6 Impacts on health, culture and social cohesion

The study found that there may occur impact on health of villagers in the project area due to increased humidity, vulnerability to water borne diseases, increased air and noise pollution, increased stress on existing health facilities.

The respondents were also apprehensive about chances of rise in conflicts among the locals and the in-migrants. They opined that there are chances in rise in crime rates and anti-social activities in the area because of migration. The area may also witness cultural mixing. However, due to in migration the area would also witness increased consumption of goods which would benefit the local economy

6.3.7 Gender based impacts

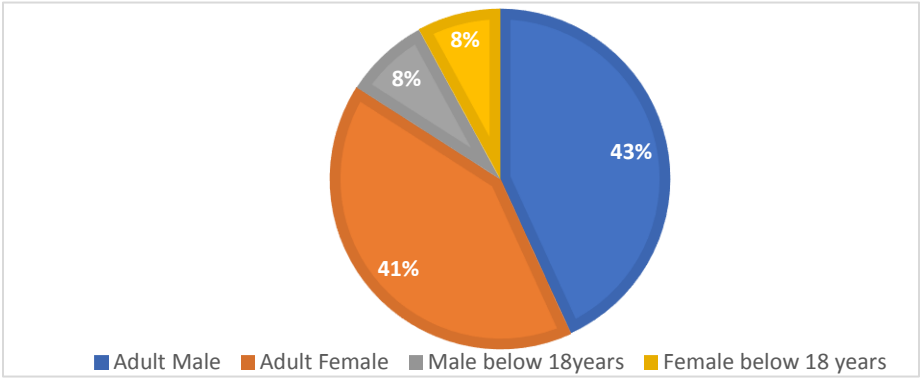
Gender Equality: Since the project area is mainly agrarian, main source of livelihood activities are dependent on land. One of the possible impacts of proposed acquisition of land can be unavailability of work opportunities to the females in project area due to the loss of land. Even if the females are educated, they do not prefer to go out of the village to earn livelihood. Another impact possible is degradation of economic status of females since many of them don't have any legal claim on papers over the land hence they might will not qualify for compensation of land-loss and they fall in the category of indirectly affected PAPs. Table given below gives a sex wise distribution of PAPs in the project area:

Since the project area is mainly agrarian, one of the main sources of livelihood activities are land dependent. During the study it was observed that women of the household too participate in carrying out the agricultural activities in the area along with men. Apart from agriculture, during the day women were found to be more involved in carrying out other activities such as maintenance of cattle and poultry, collection of cattle fodder and firewood for the household etc. Although these activities play a crucial role towards the economic wellbeing of any household, however to quantify the same becomes difficult. Out of the total 4683 PAPs, 2285 are women out of which 798 women are title holders. There are 141 widows among the PAPs out of which 93 widows are also title holders to the land. Women especially widows are highly vulnerable and require particular attention during award of compensation. A list of total widows among PAPs and those who are title holders as well, that have been identified during the survey has been given in annexures.

Table 6-5: Gender wise distribution of PAPs in the project area

Adult Male	Adult Female	Male below 18years	Female below 18 years	Total Male	Total Female	Total
2022	1915	376	370	2398	2285	4683
**Source: Primary Survey*						

Figure 6-1: Gender wise distribution of PAPs in the project area



**Source: Primary Survey*

6.4 Impacts as Perceived by the PAPs

Consultation with the affected landowners was the starting point to address involuntary issues, concerning resettlement. People affected by this project have apprehensions regarding their loss due to land acquisition.

During the Primary Survey, the respondents shared that there would be some positive impacts due to the Sunni HEP activities. These includes an increase in the employment and income opportunities- within the project and in the ambit of the forward and backward linkages. The increase in the value of land is another big positive according to the respondents. Majority of them also believed that it will create scope for increase in business opportunities. Also, some of them are hopeful that due to a better road network there would be an increase in the average vehicular speed and increased frequency of transportation services. Most of the PAPs were also positive about the overall development especially infrastructural development (social and physical) that would occur in the project villages due to the upcoming HEP.

The respondents also seemed to be worried about some of the negative impacts. The main among these was the loss of land. This in itself carries a huge impact on their livelihoods, way of life and social relationships. Next impacts are related to the influx of in-migrants from different parts of the state or from different states- that may instigate conflict between the locals and the outsiders, an intrusion to their culture and social life, more pressure on the existing natural resources and on the infrastructure.

Further, due to the acquisition of forest land on which the villagers were dependent for collection of fodder and fire wood would now be lost and therefore equivalent alternatives need to be provided.

There would also be increased humidity due to creation reservoir and rise in water levels, risk of water borne diseases, rise in air and noise pollution, possible rise in water pollution due to

construction, rise in traffic esp. heavy vehicular traffic etc. The increase in the vehicle speed and more cars on the roads would lead to more road accidents.

The loss of ropeways used by villagers to cross Satluj would be lost which would have a major impact on the social, economic and cultural life of villager on both banks. The villagers were also concerned related to the impacts which would be created due to loss of cremation grounds.

Another major concern was the impact on the villages due to loss of their drinking water resources such as IPH infrastructure, natural springs, streams and bavdis and also loss of Gharats.

Few of the respondents also opined that the chances of contracting HIV/AIDS and risks of trafficking would be increased.

The table below captures the responses received during the household survey:

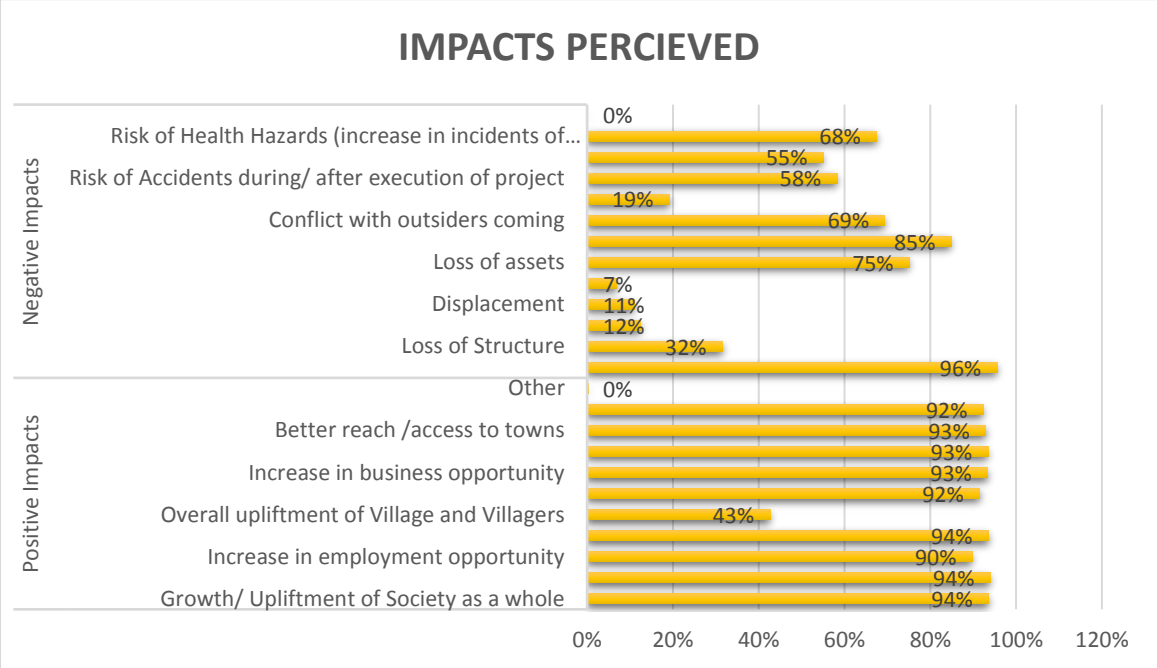
Table 6-6: Impacts Perceived by the PAPs

S. No	Type of Impact	Description	% of Responses
1	Positive Impacts	Growth/ Upliftment of Society as a whole	94%
2		Better utilization of existing natural resources for public	94%
3		Increase in employment opportunity	90%
4		Betterment of economic Status	94%
5		Overall upliftment of Village and Villagers	43%
6		Availability of Better Services	92%
7		Increase in business opportunity	93%
8		Increase in land price	93%
9		Better reach /access to towns	93%
10		Better Quality of Life	92%
11		Other	0%
12	Negative Impacts	Loss of Land	96%
13		Loss of Structure	32%
14		Loss of Livelihood	12%
15		Displacement	11%
16		Risk of Financial Safety	7%
17		Loss of assets (both private and	75%

S. No	Type of Impact	Description	% of Responses
		public)	
18		Increased Pollution	85%
19		Conflict with outsiders coming	69%
20		Degradation of quality of Life	19%
21		Risk of Accidents during/ after execution of project	58%
22		Pressure on existing infrastructure	55%
23		Risk of Health Hazards (increase in incidents of HIV/AIDS and Trafficking etc.)	68%
24		Other	0%

**Source: Primary Survey*

Figure 6-2: Impacts Perceived by the PAPs



**Source: Primary Survey*

Apart from the negative impacts, people are also optimistic about the positive impacts that the project will bring along with. They are hopeful to get better job opportunities because of the upcoming project, growth/ upliftment of society as a whole, better utilization of existing natural resources for public, betterment of economic status, increase in business opportunity and land prices, better connectivity with neighboring towns and better quality of life overall.

Apart from loss of land, structure and assets, people showed their concern for increased level of pollution due to construction activities, loss of livelihood, risk on financial safety, conflicts with outsiders coming to their villages for construction work, risk of health hazards, pressure on existing infrastructure and risk of accidents during construction period.

Apart from the above, people believe that biggest challenge they will face because of the proposed acquisition will be:

1. Less land available for agriculture in village.
2. Selection and preparation of new land for agricultural activity.
3. Getting cultivable land in compensation with good fertility
4. Loss of fruit bearing trees.

To cope up with the possible challenges and difficulties, the following mitigation measures were proposed by the PAPs and during FGDs held with panchayats:

1. Better connectivity in terms of roads, bridges and digital network including upgradation of village and link roads to all weather metalled roads
2. Proper drainage facilities in all panchayats of the project area
3. Job opportunities in upcoming HEP project for PAPs.
4. Development of village in terms of infrastructure, services and facilities.
5. Better school and higher education facility within village.
6. Technical education institutions for the project area and surroundings
7. Compensation against acquired land with increased circle rates.
8. Better health care including ambulance services, ambulance roads, better infrastructure of PHCs, clinics and hospitals facilities with in village.
9. Vocational training centres for income restoration.
10. Provide Skill upgradation trainings to the working-class population under various government schemes
11. Continuous check on pollution level caused by proposed project.
12. Business opportunities for local villagers in upcoming project and otherwise such as contracts for construction, supply and transportation.
13. Street lighting in all panchayats of the project area
14. Electricity at special subsidized rates to PAPs and panchayats being affected by the project.
15. Proper Irrigation facility in all project affected Panchayats.
16. Assistance/ Loan from other ongoing development scheme

6.5 Awareness about the Sunni Dam Hydro Electrical Project

During the primary survey, on an average, 87% respondents that they were partially aware about the upcoming Hydro Electric Project, its purpose and compensation they are eligible for. 8% said they are completely aware and 5% told that they are not at all aware about the project, its purpose and eligible compensation they are eligible for.

Table 6-7: Awareness about the Sunni Dam Hydro Electrical Project

Awareness	Awareness about the Hydro Electric Power Project	Awareness about project purpose	Awareness regarding eligible compensation
Completely	8%	8%	5%
Partially	87%	87%	87%
Not at All Aware	5%	5%	8%
Total	**100%**	**100%**	**100%**
**Source: Primary Survey*			

During the survey 99.5% of respondents expressed their interest in getting to know more about the project, its purpose, benefits to individuals/ families/village on whole, compensation they are eligible for and possible positive/ negative impacts on the individuals/ families/village.

Table 6-8: Major Source of Information About the Project for PAPs

Source of Information	
Radio	2%
Newspaper	2%
Govt Officials	17%
Other Villagers	78%
Other	1%
**Source: Primary Survey*	

It was also found during the primary survey that 78% of PAPs got to know about the project through other villagers, 17% got to know about it through some government officials, 2% got the information about the project and proposed acquisition through radio and newspaper each.

6.6 Consent for the Project

During the survey, 91% people said that they have no objection over the upcoming Sunni HEP project or proposed acquisition, 8% on the other hand expressed their objection over the proposed acquisition of the land for HEP project and remaining 1% were not sure about it.

Table 6-9: Any objection regarding acquisition By PAPs

Yes	8%
No	91%
Can't Say	1%
Total	**100%**
**Source: Primary Survey*	

6.7 Compensation Preferences

During the survey, 83% of land losers responded that they want cash as compensation against the land they are losing and remaining 17% demanded for land against land as compensation.

54% of the structure losers demanded for cash and 46% demanded structure against structure as compensation.

100% of the asset losers demanded for cash compensation against their loss.

Table 6-10: Compensation Preferences By PAPs

Compensation Preferences	Opted by Land loser	Opted by Structure loser	Opted by Assets loser
Cash	83%	54%	100%
Land	17%	0	0
Structure	0	46%	0
Total	100%	100%	100%
**Source: Primary Survey*			

All the PAPs unanimously demanded cash compensation in single payment.

6.8 Use of Cash Compensation Received

During the primary survey, almost 61% PAPs said that they will use the cash compensation received to buy a land for agriculture or new house, almost 25% said that they will save it in bank for future use, 2 % responded that they would like to invest it in some other business, almost 12% people said that they are not yet sure how they will use the compensation received and less than 1% expressed their interest in buying a new house with compensation amount received.

Table 6-11: Use of Compensation Received

Use of Compensation Received	% of Responses
1. By buying a land for agriculture/ shelter	61.41%
2.By buying a house	0.23%

3.By saving it for future in bank	24.52%
4.By investing it in some other business	1.93%
5. Not decided	11.92%
**Source: Primary Survey*	

7 Analysis of costs and benefits and recommendations on acquisition

In this chapter final conclusions regarding assessment of public purpose, less displacing alternatives, minimum land requirements, viability and extent of mitigation measures are discussed along with nature and intensity of social impacts. Finally, the chapter aims to capture the tentative overall benefits of the proposed project and the proposed acquisition and compared with the impacts being inflicted on the direct stakeholders of the project area like PAPs, project affected panchayats and adjoining area, thereby giving a final recommendation of whether the acquisition should go through or not.

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7.1 Assessment of Public Purpose

The strategy followed in Himachal Pradesh for exploitation of hydroelectric power is to produce as much energy as possible with minimum cost and with minimum environment negative impacts. The speedy exploitation of hydroelectric power potential will definitely improve the economic health of the State because 12 percent free power plus 1.5% LADF (Local Area Development Fund) of the project cost, on all new installations will increase the resources of the state to a significant extent. The need for hydroelectric projects also arises from the need, to fulfill a steady increase in peak electricity demand and the growing energy deficit in the Northern Region.[25]

The Sunni Dam Hydro Electrical Project (382MW) is a run of river type development proposed scheme in order to harness optimal hydel potential river of Satluj. SJVN Limited is the implementing agency for the same. The project is aimed at bridging the gap in power supply in the Northern Region and increasing the State's revenue by exploiting maximum energy resources with minimum hazardous and minimum social-environmental impacts on the local habitants.

Expected power generation of Sunni HEP would be 1381.77 GWH per year. The total project cost is estimated to be 2,911.85 crores. The expected revenue from the project in its first year of commencement would be 648 crores in the first year and 608 crores in subsequent years. The project is estimated to generate a total of permanent/regular employment of 310 persons and a temporary employment of 56,57,500 person-days during its pre-construction phase, construction phase and after the commencement of the project. This employment would be generated for skilled, semi-skilled and unskilled labourers. As per the HP govt. rules, 70% of the employment should be reserved for the residents of Himachal Pradesh. In this case, PAFs would be given priorities for the employment generated at the project level.

[25] (Department of MPP and Power, 2019)

As per Section 2 sub-section 1(b) of the RTFCTLARR Act, 2013 the Sunni Dam Hydro-Electrical Project (382 MW) is well justified under the definition of infrastructure projects (energy generation) for public purpose.

7.2 Less Displacing Alternatives & Minimum Land Requirement

The Sunni Dam hydro electrical project is part of The Luhri Project which contemplates construction of three dams in three stages viz. Luhri Hydro-Electric Project Stage-I (210 MW), Luhri Hydro Electric Project Stage-II (163 MW) and Sunni Dam Hydro-Electrical Project (382 MW).

On the downstream of Sunni Dam HEP lies the 800 MW Kol Dam HEP. On the upstream of the Luhri project lies the 412 MW Rampur HEP which in-turn utilizes water discharged from the further upstream 1500 MW Nathpa-Jhakri project.

Conclusively, there are currently 6 HEPs commissioned consecutively on the Satluj river between Nathpa-Jhakri and Kol Dam over a stretch of approximately 250 km. Since the Sunni Dam HEP is part of the Luhri project and lies between the Kol Dam and Luhri Stage-II HEP, therefore, leaving limited scope for any alternative location for the project.

However, alternatives regarding the Layout of the project has been studied in detail to finalize the best location for Dam and power house. After studying the alternative proposals with different geotechnical aspects, location, capacity, and nature, the present proposal with a capacity of 382 MW and the Dam site at Khaira village has been selected. The current project design was chosen after a critical consideration of minimum requirement of land acquisition and most viable engineering design. The total land required for the Sunni HEP is 440.3914 hectares of which only 53.1964 hectares will be acquired from the private land owners. This is just 12% of the total land requirement. Most of the land coming under acquisition is used for either agriculture or horticulture activities and only 38 residential structures are getting impacted from the proposed acquisition.

Hence all the efforts have been made to minimize acquisition of private land as well as minimal displacement due to the project activities.

7.3 Nature and Intensity of Social Impacts

An impact, if permanent in nature, will have same intensity during post construction phase as during pre-construction/ construction stage on the other hand temporary impacts will show a continuous decrease in intensity during following stages of project cycle. Any impact lasting even after the construction phase is considered as long-term impact and if it lasts only till the construction phase is going on, it is considered as short-term impact.

The table given below shows the nature and intensity of various identified impacts during different stages of project cycle:

Table 7-1: Nature and Intensity of Impacts

Impact Area	S. No.	Impact Identified	Stage of Project cycle	Nature of Impact	Intensity of Impact
Social	1.	Disputes among stakeholders for receiving compensation	Pre-Construction	Temporary	Short term
	2.	Social divide created between people who are getting benefitted from the project and people who remain unaffected.		Temporary	Short term
	3.	Impact on existing cultural practices and traditions of the local habitants due the in-migration.	Construction Phase	Temporary	Long term
Land/ Structure	4.	Loss of agricultural land	Construction phase	Permanent	Long term
	5.	Landlessness among PAPs		Permanent	Short term
	6.	Loss of shelter for PAPs		Permanent	Short term
	7.	Loss of public infrastructure like ropeways, bridges, gharats, roads, water pipelines, pumphouses, schools, etc.		Temporary	Short term
	8.	Loss of common property		Temporary	Short term
Livelihood/ Income	9.	Loss of agricultural income	Pre-Construction Phase	Permanent	Long term
	10.	Loss of livelihood option for people indirectly dependent on land being acquired. For eg: agricultural labourers, vendors, etc.		Temporary	Short term
	11.	Increased consumption of goods due to in migration benefitting the local economy.	Construction Phase	Temporary	Short term
	12.	Job opportunity for local villagers and PAPs in construction work.	Construction Phase	Temporary	Short term
	13.	Increase in land prices	Construction and Post Construc	Permanent	Long term

			tion Phase		
	14.	Sudden change in financial condition of the PAFs due to the compensation awarded, their purchasing capacity will change and would also increase the risk of fund miss-management.	Pre construction	Temporary	Short term
Physical Resources	15.	Loss of private assets like trees, water tanks, toilets and kitchens.	Construction Phase	Temporary	Short term
	16.	Increased pressure on existing infrastructure such as PHC, educational institutes, roads, etc.	Construction Phase	Temporary	Short term
Biodiversity/ enviornment	17.	Loss of forest land serving as primary source for fodder and firewood collection for people living in affected villages and neighboring areas.	Construction Phase and Post Construction	Permanent	Long term
	18.	Increased humidity due to construction of reservoir.	Construction Phase and Post Construction	Permanent	Long term
	19.	Increased level of air, water and noise pollution due to construction activity and quarrying.	Construction Phase	Temporary	Short term
Health	20.	Risk of water borne diseases due to increased pollution level.	Construction Phase	Temporary	Short term
	21.	Risk of Accidents during/ after execution of project	Construction Phase	Temporary	Short term
	22.	Risk of Health Hazards (increase in incidents of HIV/AIDS and Trafficking etc.)	Construction Phase	Temporary	Short term

Quality of life	23.	Rise in traffic esp. heavy vehicular traffic	Construction Phase	Temporary	Short term
	24.	Possible disputes among local villagers and migrants.	Construction Phase	Temporary	Short term
	25.	Compromised connectivity among various villages.	Construction Phase	Temporary	Short term
	26.	Degradation of irrigation facility.	Construction Phase	Temporary	Short term
	27.	Degradation in availability of drinking water due to loss of natural spring and pumphouses.	Construction Phase	Temporary	Short term
	28.	Loss in sense of social security due to in-migration.	Construction Phase	Temporary	Short term
	29.	Overall development of village.	Post construction	Permanent	Long term
**Source: Team SIA*					

As shown in the table above, most of the impacts are temporary and short term which if properly mitigated can be minimized.

7.4 Viability of the Suggested Mitigation Measures

The Mitigation measures suggested by the study have been discussed in details under the Social Impact Management Plan (SIMP). Based on the opinions and demands of the affected families, Panchayats and community as a whole and considering different aspects of the project and the involvement of the State Government, there are both positive as well as negative impacts of the project. While there is hope of development of the area due to the upcoming HEP, there are also visible fears and apprehensions in the community regarding the project.

The expected negative impacts by the Landowners include loss of land, increase in pollution levels, sudden drop in activities dependent on the private and forest land, influx of outside population resulting in rise of safety-security concerns, social conflicts etc. Due to project

activities and loss of public utilities, the residents of project affected villages and nearby area would face a difficulty in access to road communication, which will in turn affect the social relations between people of different Panchayats/villages and the families which will be displaced due to submergence. However, the suggested infrastructural mitigation measures if followed in a planned manner would almost negate these impacts to a bare minimum.

There is a general optimism about the positive impacts that would come through the implementation of this project such as increase in employment opportunities, land price, and increased scope for small and medium business ventures. better road network including better connectivity across both banks of the river, higher frequency and better-quality transportation services. The infrastructural facilities especially irrigation, drinking water, health, education, electricity and drainage will also be improved and the area will become a landmark in the HEP Map of Himachal Pradesh.

In addition, the expected revenue to the State from implementation of this project is about 604 crores per year thereby increasing the overall economic health of the State. Furthermore, due to the availability of funds like LADA and CSR, the project area would witness accelerated development during construction and post construction phases of the project.

Land acquisition and involuntary resettlement has been minimalised due to the selection of best available alternative site and project design among the possible alternatives. The current proposed acquisition will have the least adverse impact on the PAFs and communities in the project area.

Where the households (including communities) are losing assets, livelihoods or resources will be fully compensated and assisted so that they can improve, or at least restore to their former economic and social conditions.

Compensation, rehabilitation and resettlement support will be provided to the PAFs, that is, any person or household or business which on account of proposed project implementation would have theirs:

(a) Standard of living badly affected;
(b) Right, title or interest in any house, interest in, or right to use, any land including premises, agricultural and grazing land, commercial properties, tenancy, or right in annual or perennial crops and trees or any other fixed or moveable assets, acquired or possessed, temporarily or permanently;
(c) Income earning opportunities, business, occupation, work or place of residence or habitat adversely affected temporarily or permanently; or,

(d) Social and cultural activities and relationships affected or any other losses that may be identified during the process of resettlement planning.

All PAFs residing, working, doing business and / or cultivating land within the proposed project impacted areas including inventory of lost assets, are entitled to compensation proportionately for their lost assets (both land and non-land assets) and restoration of income and businesses; and will be provided with rehabilitation measures sufficient to assist them to improve or at least maintain their pre-project living standards, income-earning capacity and production levels.

The resettlement plans will be designed in accordance with the RTFCTLARR Act, 2013 and the HP RTFCTLARR Rules 2015 and the latest R&R policy.

Adequate budgetary support will be fully committed and made available by the project authorities to cover the costs of land acquisition (including compensation and income restoration measures) within the agreed implementation period.

Displacement would not occur before making provisions of compensation and of other admissible assistance required for relocation. Acquisition of assets, payment of compensation, and the resettlement and start of the livelihood rehabilitation activities of PAFs, will be completed prior to project construction activities. Livelihood and income restoration measures must also be in place but as these may take time, not necessarily completed prior to construction activities.

Having said that if requiring body and state government take appropriate measures to mitigate the various losses of the PAPs and the community at large and, considering the positive development and interests of the state, the project benefits will largely overshadow the adverse social cost of the project.

7.4.1 Final Recommendation

From the above analysis it is clear that the project benefits will be extended not only to the people of the affected area but also to the entire district and state. Infact the entire northern region stands to be benefited from this upcoming project. Implementation of the Sunni HEP project will bear both positive and negative impact on the project. However, If the proposed Mitigation Plan is followed, it will help mitigate the social impacts by minimizing the negative impacts and amplify the positive impacts, thereby overshadowing the adverse social costs.

Therefore keeping in mind the macro picture of this project which will benefit and contribute towards the development of the State and consequently the country as a whole, the study recommends that the proposed land acquisition for the Sunni Dam hydro-electrical project (382 MW) should be carried out, provided that all measures suggested mitigate the various identified impacts are followed judicially.

8 Social Impact Management Plan

8.1 Approach to mitigation

This Social Impact Management Plan (SIMP) has been prepared in accordance to the RFCTLARR Act, 2013 and the HP RTFCTLARR Rules,2015 with the aim to mitigate negative social impacts and enhance the positive impacts of Sunni HEP (382 MW. It consists of a set of mitigation, monitoring and institutional measures that needs to be taken during the design, construction and operational phases of the project to eliminate adverse social impacts or to reduce them to acceptable levels. The SIMP may be implemented during the various stages of the project viz. pre-construction stage, construction stage and operational stage. A description of the various management measures suggested during different stages of the project is provided in following section.

8.2 Measures to Avoid, Mitigate and Compensate Impacts

8.2.1 Social measures

1. If there is any dispute between the stakeholders, then this dispute should be resolved first and made sure that the compensation is given to the legal owner.
2. There is a demand by the local people of Karyali Panchayat that since the Reservoir is being constructed at Karyali Gram Panchayat, the villagers demand the project name to be changed from Sunni HEP to Jaishi-Karyali HEP.
3. Provide funds for Construction/ upgradation of temples of local deities in the villages
4. Construction of Community halls in all villages and Panchayats of the project area
5. Construction, repair and up gradation of building/structures used as Mahila Mandal, Yuvak Mandal and Gram Panchayat Offices.
6. Efforts should be made for the upliftment of women and marginal sections by enhancing their traditional skills and developing new skills.
7. Project affected persons and families have requested for Updation and increase of circle rates before calculation of compensation from the market value and job for their family members.
8. After commissioning of the project PAFs may be provided with Special Subsidised Tariff rates or provide few free units per month or both.
9. **Street lighting-** Almost all panchayats and villages have requested to be provided with streetlights.
10. **Promotion of sports –** In order to promote physical fitness and sports, youths engaged in sports should be encouraged. The requiring body can organize Sports Competition in the affected panchayats and provide sports kits to the local Sports/Youth Clubs. Promising athletes can further be endorsed and provided employment opportunity in the project.

11. Sports complex can also be developed by converging with the district administration and concern departments, which may promote bright athletes and create employment for the locals.

8.2.2 Infrastructure measures

1. **All weather Roads** – As per the SIA team's observation and demand of the villagers, all village roads and link roads may be upgraded to all weather pucca roads throughout the gram Panchayats of the project area to ensure better connectivity that has a direct impact on the development of this region.
   Some of them in particular are suggested below-
   - Metalled/Pucca Road from Khera to Ogli, (Chebri Panchayat)
   - Metalled road from Khera to Sheel. (Chebri Panchayat)
   - Metalled/Pucca Road from Panchayat Bhawan to Serkadi (Chebri Panchayat)
   - Metalled/Pucca Road from Khera to Ropa. (Chebri Panchayat)
   - Metalled/Pucca Road from Khera to Cremation Ground. (Chebri Panchayat)
   - Construction of 6 km Metalled Road from JhunJhun to Lambidhar (Mogra Panchayat)
   - Construction of 8 km Metalled Road from JhunJhun to Mogra (Mogra Panchayat)
   - Construction of 5 km Metalled Road from Parakhra to Kundadhar (Mogra Panchayat)
   - Construction of Link Road from main Road to Kothi, Malgi, Dharu and Tulah.(Ogli Panchayat)

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2. **Bridges** - As per the discussion with residents of the project affected area, there will be loss of bridges, river crossing ropeways in the different locations due to proposed project. The affected families shared that these bridges and ropeways have a great social value and villagers are well connected to their relatives living on the other side of the river, they can access roads and transportation services with ease and could gather easily to observe cultural programs.

   Apart from this the villagers also use these connections for collection of cattle fodders, fire wood and other wild forest produce.

   The following bridges are suggested-
   - Construction of Bridge/river crossing from Jhun-jhun to Suket (Mandi) (Mogra Panchayat.
   - Bridge connectivity to Bindla Panchayat.

- Since at Ogli Panchayat the existing ropeway used by villagers for river crossing is coming under acquisition, a bridge can be constructed as an alternate.

Hence, all alternative and suitable arrangements may be made for the affected panchayats/ villages to restore the social connection and accessibility.

3. Construct proper drainage facilities to all Panchayats of the project area
4. Provide Irrigation facilities such as lift irrigation in all villages and Panchayats of the project area
5. Karyali Gram Panchayat has requested to construct the project colonies at villages Jaishi and Barara.

6. **Drinking Water Supply** – From the discussion with the villagers and observation during FGDs, it was found that the villagers are using Bavdis and natural spring/aquifer water as drinking water or have made some arrangements to pump water from the river or nearby rivulet.
   Many of these natural water resources would be submerged/finished as per the proposed project Hence, before commencing the project activities, the villagers must be provided with alternate source/system for drinking water supply.
   Similarly, there is a government water pumping station close to the river bank in Ogli Panchayat, which will also be submerged. It therefore becomes imperative that all necessary arrangements are made prior to the construction phase of the project to ensure regular supply of safe drinking water in all the affected villages.
   All Panchayats of the project area have unanimously demanded to provide clean Drinking water Facility in all villages of the project area.

7. **Health Facilities** - As per the discussion with the villagers of the affected area, there are few government health facilities/centres established of different levels but the services offered are inadequate and the distances are huge.
   In Mogra Panchayat, Project affected villages Majrog and Jhun-Jhun are backward villages lying at a distance of 50km from the main Panchayat. The villagers here have demanded to provide them an upgraded health clinic, an ambulance road to connect both villages to sunni and a dedicated toll-free ambulance service. Similarly, all Panchayats have complaints regarding inadequate health facilities and have requested to upgrade health facilities in all villages of the project area.
   Hence, the existing government facilities may be upgraded in order to provide adequate medical and health facility. The requiring body may open a Level 3 health facility at a convenient location which is well connected to the affected villages and is equipped to

cater the needs of the affected area. A Mobile Medical Van can also be started in the area scheduled to visit on fixed days with essential test equipment and referral system. Apart from that, an ambulance service with toll free number (like 108 service of NHM) can be started.

8. **School and Scholarships** – To impart quality education for the children in the affected area, schools can also be started where the children of affected families may get the first priority during admission. These Children may also be considered for fee concession. The requiring body may also provide scholarships to bright and meritorious students.
   Requiring body may also help these students in opting for higher education/ professional trades such as Engineering, Medical, Law and CA/CS etc. for which they can share a percentage of fees/accommodation cost of the student and later may absorb them in the organization as per their skill sets. This could prove to be a long-term investment for the requiring body as well as a great help to the affected families who are making efforts for their children's higher education.
   Also, Since the Requiring body is PSU, it may officially have an MOU with the education department of the State to adopt/partly sponsor/upgrade the existing infrastructure of government schools and may even consider to operate these schools in the project affected villages.

9. **Technical Institution** - Technical institutions can be established in the area or collaborated with existing technical institution, to offer courses like Food Preservation and Processing, Civil Construction, Vehicle Repair and related to Electrical fields. An independent survey can be conducted to understand the future needs of the area, available resources and interest of the project affected families before finalizing the trades offered by the technical institution.

10. **Cremation grounds** - Cremation grounds are mostly located on river banks in Hilly terrains. Even in the project affected area most of the Panchayats are losing their cremation grounds due to the project. Hence, electronic/alternative crematories may be built in consultation with the residents of affected Panchayats.

8.2.3 Rehabilitation and Resettlement Measures

1. For PAFs getting displaced and also for land looser who opt for land as compensation for acquired land, the requiring body should provide land preferably in the same Gram Panchayat or in neighbouring Gram Panchayat.

2. Appropriate compensation to be provided to PAFs whose houses are being acquired and additional compensation in form of subsistence and transportation allowance for the inconvenience caused due to relocation under relevant sections of the act.

3. **Promotion of Horticulture and Herbal Plants:** The agro-climatic conditions of Project area are quite suitable for tropical and sub-tropical fruits. The places at higher altitudes produce apple, cherry, plums, apricot and lower areas produce mangoes, litchis, guava and citrus fruits. Citrus fruits like Kagzi Lemons, Kinnu and Orange can be propagated in the area. Herbal Plants may also be promoted in the area with support from the concern department.

4. **Promotion of Tourism:** If adequate attention is paid by the administration, this area can be a developed as a tourist destination as well as hub for water related activities /sports. River side camps and rafting can be promoted in the PPP mode which might generate regular income for the affected families.

5. **Promotion of Fisheries:** The project will provide congenial conditions for development of fisheries. Training can be imparted in Pisciculture to the interested persons in the affected area. Interested people and fishermen (from the affected families) can be supported by granting fishing license from the concerned department.

6. **Animal Husbandry:** Livestock is also owned by the population in the affected areas. Animal husbandry, which is helpful to small and marginal farmers for increasing their income, can be commercialized. A milk cooperative can be promoted in the area which will benefit not only the project affected families but also the entire area.

7. **Forming and Strengthening Self-Help Groups (SHGs):** The requiring body may provide opportunities for women to come together and form SHGs and strengthen the existing ones with proper training and to earn their livelihoods through credit offered under various schemes. Handicraft, diary, shawl making, stitching and embroidery etc. can also be introduced.

8. **Institutional linkages and skill upgradation for income restoration:** Requiring body can play a proactive role to mobilize affected family members to get some vocational/ skills training opportunities and also support in establishing forward and backward linkages for raw materials, inputs, besides marketing and credit facilities. District administration and other stakeholders in institutional financing and marketing may prepare micro-plans for undertaking such activities. In case of creation of alternative

livelihoods schemes, needs of the target population will be studied and prioritized in a participatory manner. Various poverty alleviation and income generation schemes sponsored by the state govt. and GOI shall be converged for offering income restoration options to the affected population.

9. **Project-based Employment:** Preference to Project-related employment opportunities such as work under the project construction, maintenance, supply and transportation contracts can be given to the affected families.
10. The compensation for the damage of the crops and horticulture activities including fruit bearing and non-fruit bearing trees during the project should be appropriately compensated.
11. The requiring body may also run skill development programs for upgradation of skills of individuals for them to be able to receive better employment opportunity in the project.
12. During the operational and other stages of this project the preference should be given to award petty contracts in construction, supply and transportation to PAPs and PAFs and also to Locals of the Affected Gram Panchayats.

8.2.4 Environmental Measures

I) Aforestation – Due to the proposed project forest cover will be adversely affected. To restore the ecosystem and mitigate the ecological losses, aforestation can be undertaken in the government land. The process should involve the forest department, requiring body and the community. These efforts will not only help in restoring the losses but also provide employment opportunity to local people.

Apart from that, plantation may be done in the susceptible area for check on soil erosion in the private land. It will check the loss of fertility of the soil and minimize associated risks. Furthermore, Plantations along the river banks would effectively reduce the risk of landslides due to rise in water levels and during monsoons.

II) Noise pollution and vehicular traffic

Noise pollution and traffic may be minimalized by:

a) Defining specific hours of the day for entry of heavy transport vehicles.
b) Regulating the number of heavy vehicles that can enter/leave the project site in one day.
c) Strict instructions to the drivers to minimize the use of horns.
d) Complete ban on pressure horns on transport vehicles.

e) staggering the timings of transport vehicles evenly throughout the day in order to avoid unnecessary overload on the roads and traffic situations.
f) strict instructions to drivers of heavy vehicles to give regular overtake passes on priority to small vehicles and adhering to speed limits.

III) AIR Pollution

Air pollution arising due to dust during transportation, construction, excavation, mining and dumping may be mitigated by affectively covering the construction site, transport vehicles such as trucks, tippers etc. mining & dumping sites. Also, regular water spray throughout the day in the project area will also helps in reducing air pollution.

Villagers at Chebri Panchayat have requested to shift the dumping site away from the village as they are worried about the air pollution that they would have to face from it.

IV) Water Pollution, Water borne Diseases and increased humidity.

1) water pollution may be minimalised by strictly assuring that during excavation and mining minimalistic dumping occurs in the river.
2) the dumping site should be created away from the river banks in order to avoid the dump entering the river especially during rains and monsoons.
3) the storage units of construction material especially sand and aggregate should also be place away from the river banks.

a) 4)standing water especially after creation of reservoir should be sprayed regularly to avoid water borne diseases.

4) increased humidity due to the reservoir may be minimalized by Afforestation. However special care should be taken to plant Local trees instead of alien decorative trees. Also, only those varieties of trees should be planted that reduce humidity and help keep surroundings comparatively cooler

V) Risk of Land Slides Due to increase in Water Levels

The competent authorities may make sure to build embankment walls/retaining walls etc. at vulnerable locations in order to check the river course and minimalize risk to landslides due to increased water levels in the river.

Drainage System- There is a need for developing proper drainage systems in the affected villages. The feasibility of the drainage pipes along the roads should be explored in the given terrain conditions.

8.2.5 Other measures:

1. Compensation should be given in fixed time frame to Project Affected People.
2. Project Affected People should be given technical and financial counselling for the productive usage and safe investment of compensation money.
3. To device proper phasing plan for distribution of compensation for PAPs and PAFs who want to opt for compensation in phasing.

4. **Local Area Development Committee** LADF Contribution is 1.5% of the project cost during construction period of the project. Thereafter 1% shall be earmarked for the LADF to provide a regular stream of income generation and welfare schemes on a sustained and continued basis over the life of the project. The Govt. of HP may also provide matching 1% from its share of 12% free through plan/budgetary provisions to the LADF. These provisions need to be widely discussed with project affected families and for that, a Local Area Development committee (LADC) can be formed comprising various stakeholders such as government departments, members from project affected families and requiring body officials.

5. **Revision of Circle rates** Many of the PAPs and PAFs feel that the existing circle rates of their land is very low. They have therefore requested to revise and increase the circle rates. This is a major concern with the villages falling in Mandi District and also in Mogra Panchayat. The applicable circle rates for 12 out of 20 villages fall anywhere between Rs 250-Rs 800 per sq. m. for cultivable land and Rs 250-Rs 550 for non-cultivable land. The remaining 6 villages have circle rates of Rs 1011 for cultivable land and Rs 842 for non-cultivable land.
   The concerned authorities may look into this issue and revise the circle rates of the Panchayats appropriately in accordance to the relevant laws.

6. **Awareness & Financial Literacy Camps**–Various awareness programs related to health, hygiene, nutrition, social rights etc. may be organized frequently in the area. This will help the affected villagers to cope with the social changes brought in by the huge influx of population and anticipated changes in the pattern of health issues.
   Also, Special financial Literacy camps may be organized to educate villagers about safe investments, investment plans, money management etc since many would be receiving heavy compensations.
   It has been observed in many land acquisition projects that whenever bulk money has been disbursed to families, that money is not utilized judicially by the family members

and is generally spent on luxuries and unnecessary items and also changes the spending pattern and lifestyle of the individual/families. Sometimes, this also causes loss of traditional and cultural practices prevalent in the society. Many families are not aware of the financial management as a whole, hence concern here is compensation money will not last for long and ultimately adversely affect the families as well as society in the long run.

Moreover, there are many cases of frauds and cheats with the uneducated villagers and vulnerable groups once they have received the compensation.

Therefore, the requiring body may organize Financial Literacy Camps in Affected Project area with the help of specialized external agency.

8.3 Measures included in R&R and compensation as per Act 2013

This SIA report will be beneficial for the requiring body to undertake land acquisition process and also to prepare a Plan of Action according to the aspiration conveyed by the project affected families and other stakeholders during public consultations and surveys. In the light of the findings of the study, the following steps may be taken for mitigation of expected social impacts.

Table 8-1: Impacts identified and corresponding mitigation measures

S. No	Assessed Impacts	Suggested mitigation Measures
1	Loss of Private Land (53.19 Ha)	Appropriate Compensation to title holders and stakeholders as per the provisions of RTFCTLARR Act, 2013
2	Loss of Private Assets due to Acquisition such as Residential and commercial Structures, boundary walls, Crops, Fruit Bearing and non-fruit bearing trees. List of private assets being acquired is mentioned in Table 4.2 and 4.3	Appropriate Compensation to Owners and stakeholders as per the provisions of RTFCTLARR Act, 2013
	Revision of Circle Rates	As per the decision of District Collector and requiring body
3	Inconvenience caused due to acquisition for displaced Families and individuals	Appropriate Compensation to Owners and stakeholders as per the provisions of RTFCTLARR Act, 2013 for relocating to new location and construction of new houses

4	Loss of employment/income/livelihood dependent on land.	Appropriate Compensation to Individuals as per the provisions of RTFCTLARR Act, 2013. 2) the Requiring body may ensure employment of these individuals in the project during its construction and post construction phase depending on their skill set, qualification, age and existing income. 3) the requiring body may also run skill development programs for upgradation of skills of these individuals for them to be able to receive better employment opportunity in the project. 4) During the operational and other stages of this project the preference should be given to award petty contracts in construction, supply and transportation to PAPs and PAFs and also to Locals of the Affected Gram Panchayats.
5	Loss of Community Assets such as Gharats, Cremation grounds, bavdis, River crossing Ropeways, temples etc.	All cultural and community Assets being impacted should either be relocated or provided with an equivalent/upgraded alternate with prior consent of the concerned community before starting of construction.
6	Loss of Common properties such as Water Resources including Drinking water resources such as springs/& bavdis. Loss of pastures/grazing lands, forests for collection of firewood.	All common properties being impacted should be provided with an equivalent/upgraded alternate with prior consent of the concerned community before starting of construction.
7	Impacts on vulnerable groups: the survey reveals there are 33% Women headed HH, 21 divorcees, 192 widows, 42 physically challenged PAPs.	1) Provide Appropriate Compensation to Individuals as per the provisions of RTFCTLARR Act, 2013. 2) In addition, they may be provided with special assistance like providing additional support in terms of skill development and income restoration to at least one member

		from each vulnerable family. 3) the authorities may make sure that the relevant share of compensation is transferred directly to the vulnerable individuals in order avoid chances of frauds and cheat.
8	Impact on Food Security and animal husbandry: Loss of Cultivable land and grazing grounds will lead to negative impact on agriculture and animal husbandry.	Agriculture Department is advised to assist the affected families to undertake intensive cultivation in the remaining land or alternate land provided. Similarly, they should be assisted and promoted to carry on animal husbandry practices
9	Noise pollution and vehicular traffic	1) Development and implementation of a management plan to mitigate the increased levels of noise, traffic, dust within the permissible limit may be taken up in consultation with local people, 3) noise pollution and traffic may be minimalized by: a) defining specific hours of the day for entry of heavy transport vehicles. b) regulating the number of heavy vehicles that can enter/leave the project site in one day. c) Strict instructions to the drivers to minimize the use of horns. d) complete ban on pressure horns on transport vehicles. e) staggering the timings of transport vehicles evenly throughout the day in order to avoid unnecessary overload on the roads and traffic situations. f) strict instructions to drivers of heavy vehicles to give regular overtake passes on priority to small vehicles and adhering to speed limits.

10	Air pollution	2) Air pollution arising due to dust during transportation, construction, excavation, mining and dumping may be mitigated by affectively covering the construction site, transport vehicles such as trucks, tippers etc. mining & dumping sites. Also, regular water spray throughout the day in the project area will also help in reducing air pollution.
11	Water Pollution, Water borne Diseases and increased humidity.	1) water pollution may be minimalized by strictly assuring that during excavation and mining minimalistic dumping occurs in the river. 2) the dumping site should be created away from the river banks in order to avoid the dump entering the river especially during rains and monsoons. 3) the storage units of construction material especially sand and aggregate should also be place away from the river banks. 4)standing water especially after creation of reservoir should be sprayed regularly to avoid water borne diseases. 5) increased humidity due to the reservoir may be minimalized by Afforestation.
12	Risk of Land Slides Due to increase in Water Levels	The competent authorities may make sure to build embankment walls/retaining walls etc. at vulnerable locations in order to check the river course and minimalize risk to landslides due to increased water levels in the river. 2) Afforestation and plantations along the river banks, especially on vulnerable and susceptible sites would also affectively reduce the risk of landslides.

**Source: Team SIA*

8.3.1 Outlay for SIMP Implementation

The entitlement framework and the process of rehabilitation and resettlement have been furnished below in the backdrops of the legal provisions applicable for the project affected families.

An Entitlement Matrix has been developed in compliance with Laws, Rules and Policies framed by the Government of India and Government of Himachal Pradesh. The entitlement matrix summarizes the types of losses and corresponding nature and scope of entitlements.

Table 8-2:Entitlement Matrix

S. No	Impact Category	Unit of entitlement	Details of entitlement	Remarks
Loss of Assets- titleholders				
1	Private Land	Land Owner(s)/titleholders	(a) Cash compensation for the land at market value, which will be determined as per provisions of RFCTLARR Act, 2013 b) Amount equivalent to current stamp duty on compensation amount for replacement of lost assets. Training Assistance c) Loss of perennial and non-perennial crops and trees will be compensated in accordance with the provisions of Horticulture and Agriculture Department as applicable. (d) A Grant of Rs 25,000 for replacement of cattle shed or petty shops.	
2	Loss of structure (Residential or	Land Owner/Titleholder	a) Cash compensation determined on the basis of	

	Commercial or Res-cum-Commercial)		current rates as per admissible norms (b) Shifting allowance of Rs 50000 as per provisions of RFCTLARR Act, 2013 for the displaced families (c) Provision of free house as per RFCTLARR Act 2013, for completely displaced residential/commercial or Equivalent cost of the house may be offered in lieu of the constructed house (d) Subsistence allowance of Rs 36,000 for the displaced families (RFCTLARR Act 2013) (e) Resettlement allowance of Rs 50,000 for the displaced families (RFCTLARR Act 2013)	
3	Tenants and Leaseholders	Tenants and lease holders	Registered lessees will be entitled to an apportionment of the compensation payable to structure owner as per applicable local laws.	
Loss of Residential and Commercial Structures - Non-Titleholders				
4	Encroachers	Affected Person (Individual/ Family)	(a) Encroachers shall be given advance notice of 2 months in	

			which to remove assets/crops. (b) Right to salvage materials from affected structure	
Loss of livelihood – Title and Non-Titleholders				
5	Loss of livelihood – Title holders, Agriculture labour and commercial squatters	(Individual/ Family)	One-time grant of Rs 25,000 (value prescribed under RFCTLARR Act 2013)	For commercial squatters, the eligibility will become from the date of Census Survey
6	Foreseeable and unforeseen impacts likely during the construction stage	Owner, affected person	Payment of damages if any to Structures Temporary access would be provided, wherever necessary	Such as temporary impacts on structures, temporary disruption to access or passage
7	Temporary loss of income of mobile kiosks, if any	Kiosk owner	Two months advance notice to vacate the area	
8	SC, ST		Assistance to include in government welfare schemes if not included, if eligible as per Government criteria; and Additional benefits to SC and ST as per the provisions of	

			RFCTLARR Act 2013 Second Schedule	
9	Unforeseen impacts		Any unforeseen impacts shall be documented and mitigated in accordance with the principles and objectives of the Act.	

**Source: Team SIA*

Details of Cost of Resettlement and Rehabilitation has been worked out and given in tables in following section.

The entitlement framework and the process of rehabilitation and resettlement have been furnished earlier in the backdrops of the legal provisions applicable for the project affected families. Details of Cost of Resettlement and Rehabilitation has been worked out and given in tables 8.3 to 8.6.

Table 8-3: Details of Estimated Compensation on land

District	Panchayat	S. No	Villages	Total Private Land (Sq. m)	Cultivated land (sq. m)	Non-Cultivated Land (sq. m)	Circle rate for Cultivated land (Rs/sq. m)	Circle rate for Non-Cultivated Land (Rs/sq. m)	Value of Cultivated land (6*8) (Rs)	Value of Non-Cultivated Land (7*9) (Rs)	Total Value of Private Land In Rs (10+11)	Total Compensation of Land In Rs. Including 100% Solatium
1	2	3	4	5	6	7	8	9	10	11	12	13
Shimla	Chebri	1.	Lunsu	11729	0	11729	677	564	-	6,615,156	6,615,156	13,230,312
		2.	Khera	99689	62128	37561	677	564	42,060,656	21,184,404	63,245,060	126,490,120
	ry	3.	Jaishi	37634	24486	13148	677	564	16,577,022	7,415,472	23,992,494	47,984,988

District	Panchayat	S. No	Villages	Total Private Land (Sq. m)	Cultivated land (sq. m)	Non-Cultivated Land (sq. m)	Circle rate for Cultivated land (Rs/sq. m)	Circle rate for Non-Cultivated Land (Rs/sq. m)	Value of Cultivated land (6*8) (Rs)	Value of Non-Cultivated Land (7*9) (Rs)	Total Value of Private Land In Rs (10+11)	Total Compensation of Land In Rs. Including 100% Solatium
1	2	3	4	5	6	7	8	9	10	11	12	13
		4.	Bharara	61109	47128	13981	677	564	31,905,656	7,885,284	39,790,940	79,581,880
	Ogli	5.	Talah	32225	4964	27261	710	592	3,524,440	16,138,512	19,662,952	39,325,904
		6.	Ogli	47889	27058	20831	1011	842	27,355,638	17,539,702	44,895,340	89,790,680
		7.	Kothi	5522	5431	91	1011	842	5,490,741	76,622	5,567,363	11,134,726
		8.	Malgi	85650	43407	42243	1011	842	43,884,477	35,568,606	79,453,083	158,906,166
	Bag	9.	Bathora	38662	30923	7739	1011	842	31,263,153	6,516,238	37,779,391	75,558,782
		10.	Pandhoa	4448	3689	759	1011	842	3,729,579	639,078	4,368,657	8,737,314
		11.	Grehna	6941	6600	341	393	328	2,593,800	111,848	2,705,648	5,411,296
	Mog	12.	Jhunjan	8678	4869	3809	343	286	1,670,067	1,089,374	2,759,441	5,518,882
		13.	Majrog	2365	1815	550	343	286	622,545	157,300	779,845	1,559,690
Mandi	Bindla	14.	Bhoura	29055	21295	7760	766	638	16,311,970	4,950,880	21,262,850	42,525,700
		15.	Balog	17213	15983	1230	766	638	12,242,978	784,740	13,027,718	26,055,436
	Sartyola	16.	Jakleen	4981	3381	1600	561	468	1,896,741	748,800	2,645,541	5,291,082
	Parlog	17.	Fafan	6308	5428	880	431	360	2,339,468	316,800	2,656,268	5,312,536
		18.	Parlog	11722	10025	1697	431	360	4,320,775	610,920	4,931,695	9,863,390

District	Panchayat	S. No	Villages	Total Private Land (Sq. m)	Cultivated land (sq. m)	Non-Cultivated Land (sq. m)	Circle rate for Cultivated land (Rs/sq. m)	Circle rate for Non-Cultivated Land (Rs/sq. m)	Value of Cultivated land (6*8) (Rs)	Value of Non-Cultivated Land (7*9) (Rs)	Total Value of Private Land In Rs (10+11)	Total Compensation of Land In Rs. Including 100% Solatium
1	2	3	4	5	6	7	8	9	10	11	12	13
		19.	Beludhank	19823	18190	1633	292	243	5,311,480	396,819	5,708,299	11,416,598
	Shout	20.	Kharyali	321	0	321	279	232	-	74,472	74,472	148,944
Total				**531,964**	**336,800**	**195,164**			**253,101,186**	**128,821,027**	**381,922,213**	**763,844,426**

**Source: Team SIA*

**Note: Since compensation factor for Himachal Pradesh has not yet been finalized therefore for the purpose of the above calculation it has been kept as 1.*

The above-mentioned cost of land is a projected compensation that the requiring body may have to make provisions of. This is subject to change as per the competent authority of the State Government but cannot be lesser than the estimate given.

Table 8-4: Details of compensation on trees

	Fruit Bearing trees	Non fruit bearing trees	Total Trees
Trees under acquisition	14,824	26,691	41,515
Rate	Rs. 5000/tree	Rs. 3000/tree	-
Amount (Rs.)	74,120,000	80,073,000	154,193,000

**Source: Team SIA*

The above estimate and the rate of the trees (fruit-bearing and non-fruit trees) are subject to change as per the enumeration, verification and valuation of the trees by the competent authority.

Further, under sub-section 2 of section 26 of the Act, the market value calculated shall be multiplied by a factor Mentioned in the First Schedule. Since this factor has not yet been notified by the GoHP, the same has not been taken in calculation of compensation.

Table 8-5: Compensation for Rehabilitation and Resettlement

Families displaced due to loss of housing unit	**Details of Cost**	**Amount**
A house will be provided under Pradhan Mantri Awas Yojana (PMAY). Each family will only get one house. If not opted for house, equivalent cost of the house would be offered.	Under PMAY 2016 notification of HP government, the allowance for each house would be 1.30 lakhs in hilly states 38 x 130,000 (tentative) = 4,940,000	4,940,000
One-time payment of 5 lakhs per PAF or, under annuity policy, 2000/- per month per family for 20 years	38 x 500000	190,00,000
Subsistent grant of 3000/- for each family for one year**	38 x 36000	1,368,000
One-time shifting cost of 50000/- per family	38 x 36000	1,368,000
One-time "Resettlement Allowance" of 50000/- per family	38 x 50000	1,900,000
Total Estimation		**2,85,76,000**
**In case of SC/ST, additional one-time grant of 50,000/- should be given to each family for resettlement.		

**Source: Team SIA*

The above estimation cost is calculated under provisions made under Act 2013.

Table 8-6: Details of Total Costs for Land Acquisition, Rehabilitation and Resettlement

S. No	Details of Cost	Amount
1	Compensation for land**	**76,38,44,426**
2	12% interest on the compensation (land)	9,16,61,331
3	Compensation for trees	15,41,93,000
4	Rehabilitation and Resettlement costs***	2,85,76,000
5	Total Cost	103,82,74,757
6	Miscellaneous (10% of the total cost)	10,38,27,476
7	Grand Total (5+6)	114,21,02,233

**The compensation for land acquisition doesn't include compensation for standing crops, which will be calculated by the competent authority ***The compensation does not include compensation of gharats, which will be calculated by the competent authority

**Source: Team SIA*

Information collected during the survey is based on the interviews of the respondents and the information provided by them is considered true but it is not the authentic version of ownership entitlement. The total land area belonging to the private estimates to 53.1934 Ha for which, on the basis of the computation of compensation formula, the tentative land compensation (excluding compensation for standing crops) works out to Rs.**76,38,44,426** /- (Rupees Seventy-Six Crores Thirty-eight Lakhs Forty-Four Thousand four hundred and twenty-six only). At 12 percent rate of interest on the compensation of land, an amount of 91,661,331 /- has been estimated for payment as per Section 30 (3) of Act 2013.

The compensation for trees is estimated as 15,41,93,000 /-. However, the number of the trees will be enumerated and the actual value will be assessed by the competent authorities.

This estimation of compensation for land acquisition doesn't include compensation for standing crops. The cash compensation against crops will be provided at market cost of mature crops based on the average production.

The entitlements for R&R expenses are totaling to Rs. 2,85,76,000 /-. The total cost for land acquisition including R&R is estimated as Rs. 114,21,02,233 /-. However, the final compensation amount for the land acquisition and structures will be determined by the Competent Authority as per the Act 2013. Further, the cost of the Mitigation Plan has not been included in the said computation.

8.4 Measures stated Requiring Body

No Measures have been shared by the Requiring Body.

8.5 Institutional Arrangement for implementation of Rehabilitation and Resettlement Plan

As per the act 2013, where land proposed to be acquired is equal to or more than 100 acres, the government shall constitute a "Rehabilitation and Resettlement Committee'' under the chairmanship of the Collector. This committee would aim to review the progress of

implementation of Rehabilitation and Resettlement Schemes or plan and to carry out the post-implementation Social Audit in consultation with the Gram Sabha.

The members to be involved in the process of implementation and social audit thereafter, may be as follows:

1. A representative of women residing in the affected area.
2. A Representative of SC population residing in the affected area.
3. A Representative of a voluntary organization (NGO) working in the area.
4. The Land Acquisition Officer of the Project.
5. The Chairperson of the Panchayat/s of the affected area or their nominee/s.
6. Member of Parliament and Member of Legislative assembly of the concerned area or their nominee. (GP Pradhan)
7. A Representative of Requiring Body.
8. Administrator for R&R as the Convener.

8.5.1 Grievance Redressal Committee (GRC)

Efficient grievance redressal mechanism shall be developed to assist the PAFs to resolve their queries and complaints. Grievances of PAFs shall be first brought into the attention of field level functionaries of the project. Grievances not redressed by then will be brought to the Grievance Redressal Committee (GRC). The composition of the proposed GRC may be the same as R&R Committee. This Committee may meet on the monthly basis or the case may be defined by the state Government.

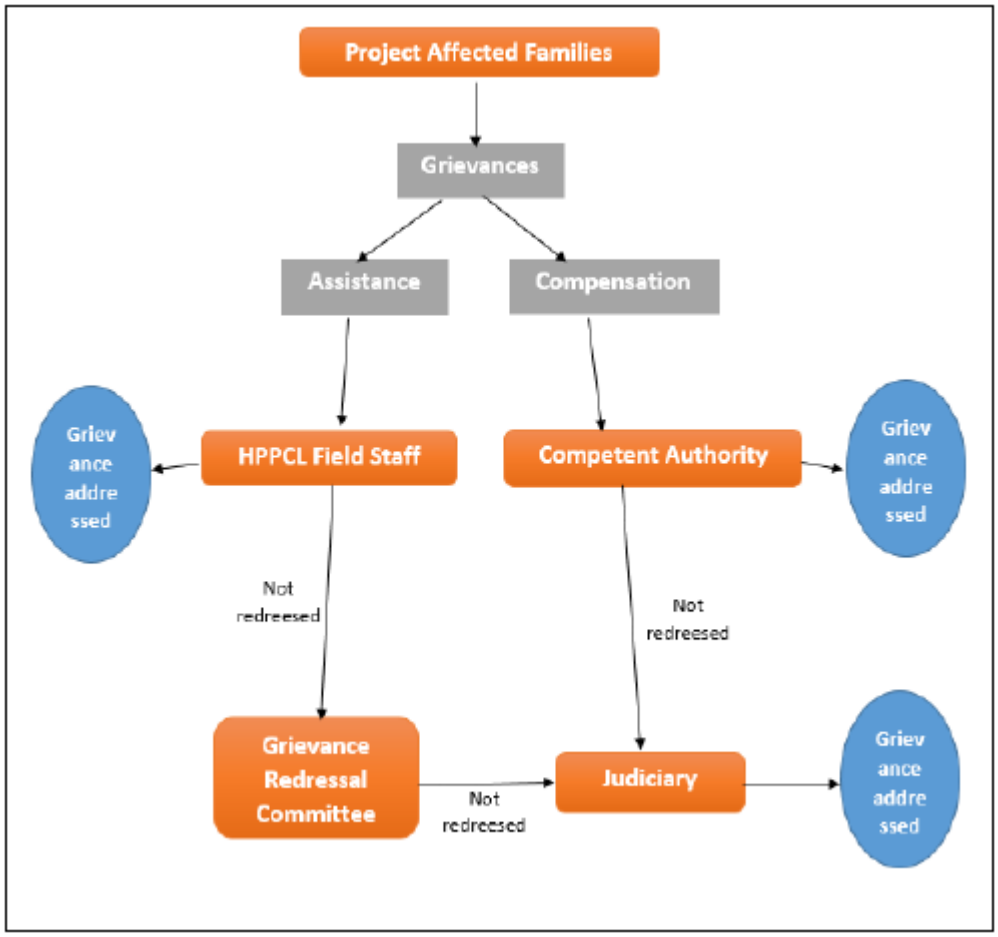
The main responsibilities of the GRC may be:

i. Provide support to PAFs on problems arising from land / property acquisition;
ii. Record PAFs grievances, categorize and prioritize grievances and resolve them; and
iii. Report to PAFs on developments regarding their grievances and decisions of the GRC.

Other than disputes relating to ownership rights under the court of law, GRC will review grievances involving all resettlement benefits, compensation, relocation, replacement cost and other assistance. When any grievance is brought to the field level functionaries, it should be resolved within 15 days from the date of complaint. The GRC will meet every month (if grievances are brought to the Committee), determine the merit of each grievance, and resolve grievances within a month of receiving the complaint, failing which, the grievance will be referred to appropriate Court of Law for redress. Records will be kept of all grievances received including: contact details of complaint, date of the complaint, nature of grievance, corrective

actions taken and the date these were affected, and final outcome. A flow chart of grievance redressed mechanism is indicated in Figure 8.1 below:

Figure 3: Grievance redressal mechanism



**Source: Team SIA*

8.5.2 Stages of Grievance Redressal

8.5.2.1 Monitoring and Evaluation

Monitoring and Evaluation of the SIMP implementation is necessary as activities are to be executed by many agencies in a time bound manner. Monitoring involves periodic checking to ascertain whether activities are progressing as per the schedule whereas Evaluation is to assess the performance of the SIMP. For this purpose, a Monitoring and Evaluation plan needs to be developed to provide feedback to the project authorities. Monitoring and Evaluation of R&R

gives an opportunity to reflect on the success of the R&R objectives, strategies and approaches and to assess the efficiency and efficacy in implementation of R&R activities, their impact and sustainability. Monitoring will give particular attention to the project affected vulnerable families and groups such as Scheduled Castes, Scheduled Tribes, BPL families, women headed households, widows, old aged and the physically or mentally challenged persons. An independent evaluation through third party is also necessary for mid and end term evaluation of SIMP implementation.

8.5.2.1.1 Internal monitoring

The internal monitoring for SIMP implementation will be carried out by the project authorities where main objectives will be to report progress against the SIMP schedule; check that agreed entitlements are delivered in full to affected families and people; identify any problems, issues or hardship resulting from the SIMP implementation and to take corrective actions; monitor the effectiveness of the grievance system and measure the satisfaction of PAFs. Internal monitoring will focus on measuring progress against the schedule of actions defined in the SIMP. Activities to be undertaken by the project authorities will include liaison with the Land Acquisition team, construction agencies and project affected communities to review and report progress; verification of land acquisition compensation delivery against entitlements in accordance with the SIMP; verification of implementation of agreed measures to restore income and living standards of PAFs; identification of any problems, issues, or hardship resulting from resettlement process; assess project affected families and peoples' satisfaction with resettlement outcomes; and redress grievances of PAFs to follow up that appropriate corrective actions. Field level officers of HPPCL, in charge of SIMP implementation will track the R&R progress. For this purpose, the indicators suggested are as given in table 8.7.

Table 8-7:Indicators for monitoring of SIMP progress

Physical	Extent of land acquired, number of structures dismantled, number of families affected, number of families purchasing land and extent of land purchased, number of PAFs receiving assistance/compensation, number of PAFs provided transport facilities/ shifting allowance, extent of government land identified for house sites, number of land users and private structure owners paid compensation
Financial	Amount of compensation paid for land/structure, cash grant for shifting, amount paid for training and capacity building of PAFs.
Social	PAFs knowledge about their entitlements, communal harmony, morbidity and mortality rate, taking care of vulnerable population etc.
Economic	Number of Jobs provided to the entitled families, number of business reestablished,

	utilization of compensation, house sites/business sites purchased successful implementation of Income Restoration Schemes implemented
Grievance	Number of community level meeting, number of grievance redressal meetings held, number of cases disposed by Project authorities to the satisfaction of PAFs, number of grievances referred and addressed by the concerned Authorities

**Source: Team SIA*

8.5.2.1.2 Independent Evaluation

An Independent Evaluation Agency may be hired by the Project for mid and end term evaluation to achieve the following: (a) verify results of internal monitoring; (b) assess whether resettlement objectives have been met, specifically, whether livelihoods and living standards have been restored; (c) assess resettlement efficiency, effectiveness, impact and sustainability; (d) ascertain whether the resettlement entitlements were appropriate to meeting the objectives and (e) this comparison of living standards will be in relation to the baseline information available. The following table 8.8 should be considered as the basis for indicators in external evaluation of the SIMP.

Table 8-8: Indicators for Project Outcome Evaluation

S. No.	Objectives	Risks	Outcomes
1	The negative impact on the persons affected by the project will be minimized	Resettlement Plan implementation may take longer time than anticipated	Satisfaction of the landowners with the compensation and assistance paid. Type of use of compensation and assistance by the land owners Satisfaction of structure owners with compensation and assistance Type of use of compensation and assistance by the structure owners
2	Persons and families losing assets to the project shall be compensated as per the Act and Rules	Institutional arrangement may not function as efficiently as expected	Percentage of PAFs adopted the skills acquired through training as only economic activity Percentage of PAFs adopted the skills acquired through training as secondary economic activity
3	Affected persons and families will	Authorities implementing	Percentage of PAFs reported increase in income due to training Percentage of PAFs

S. No.	Objectives	Risks	Outcomes
	be assisted in improving or regaining their standard of living	SIMP may not perform the task as efficiently as expected	got trained in the skill of their choice Role of project authorities in helping PAFs in selecting trade for skill improvement Use of productive assets provided to PAFs under one-time economic rehabilitation grant
4	Vulnerable groups will be identified and assisted in improving their standard of living	Unexpected number of grievances may arise PAFs falling below their existing standard of living	Type of use of additional assistance money by vulnerable group Types of grievances received Number of grievances forwarded to Grievance Redressal Committee (GRC) and the time taken to solve them Percentage of PAFs aware about the GRC mechanism Percentage of PAFs aware about the entitlement framework Opinions of PAFs about the approach and accessibility of the project authorities

**Source: Team SIA*

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10 Annexures