



**CIN 1149 – Himachal Pradesh Disaster Risk Reduction and Preparedness Program**

# **ENVIRONMENT AND SOCIAL MANAGEMENT FRAMEWORK**



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### Abbreviations

<b>AFD</b>	French Development Agency
<b>BMP</b>	Biodiversity Management Plan
<b>BoQ</b>	Bill of Quantities
<b>BRO</b>	Border Roads Organization
<b>CCVA</b>	Climate Change Vulnerability Assessment
<b>CEMP</b>	Construction Environment Management Plan
<b>CHMP</b>	Cultural Heritage Management Plan
<b>DDMA</b>	District Disaster Management Authority
<b>DEOC</b>	District Emergency Operations Centre
<b>DEST</b>	Department of Environment Science & Technology
<b>DIAG</b>	District Inter Agency Group
<b>DLI</b>	Disbursement Linked Indicators
<b>DM</b>	Disaster Management
<b>DMC</b>	Disaster Management Cell
<b>DPR</b>	Detailed Project Report
<b>DRR</b>	Disaster Risk Reduction
<b>E&amp;S</b>	Environmental and Social
<b>EGEF</b>	Ethnic Group Engagement Framework
<b>EGEP</b>	Ethnic Group Engagement Plan
<b>EOC</b>	Emergency Operations Centre
<b>ES&amp;CC</b>	Environmental Social and Climate Change Safeguard Expert
<b>ESMF</b>	Environmental and Social Management Framework
<b>EWS</b>	Early Warning System
<b>GAP</b>	Gender Action Plan
<b>GoHP</b>	Government of Himachal Pradesh
<b>GP</b>	Gram Panchayat
<b>HP</b>	Himachal Pradesh
<b>HP DRRP</b>	Himachal Pradesh Disaster Risk Reduction and Preparedness
<b>HPFD</b>	Himachal Pradesh Forest Department
<b>HPSDMA</b>	Himachal Pradesh State Disaster Management Authority
<b>HRVCA</b>	Hazard, Risk, Vulnerability & Capacity Analysis
<b>IEC</b>	Information Education and Communication
<b>IMD</b>	India Meteorological Department
<b>IPF</b>	Investment Project Finance
<b>IVR</b>	Independent Verification Report
<b>LMP</b>	Labor Management Plan
<b>MaGC</b>	Management and Governance Consulting Private Limited
<b>NH</b>	National Highways
<b>NHAI</b>	National Highways Authority of India
<b>PBS</b>	Program Budget Support
<b>PforR</b>	Program-for-Results
<b>PIU</b>	Project Implementation Unit

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<b>PMU</b>	Project Management Unit
<b>PSC</b>	Program Steering Committee
<b>PWD</b>	Public Works Department
<b>RAP</b>	Rehabilitation Action Plan
<b>RBF</b>	Results Based Financing
<b>RD</b>	Rural Development
<b>RPF</b>	Resettlement Policy Framework
<b>SDMP</b>	State Disaster Management Plan
<b>SDRF</b>	State Disaster Response Fund
<b>SEOC</b>	State Emergency Operations Centre
<b>SEP</b>	Stakeholder Engagement Plan
<b>TDU</b>	Technology Demonstration Unit
<b>TMP</b>	Traffic Management Plan
<b>ToR</b>	Terms of Reference
<b>ToT</b>	Training of Trainers
<b>ULB</b>	Urban Local Bodies
<b>URL</b>	Uniform Resource Locators
<b>WB</b>	World Bank
<b>WMP</b>	Waste Management Plan

## 1 Introduction

Himachal Pradesh (HP) is a small beautiful state located in the heart of western Himalaya. The state has many unique features such as indistinct valley, rugged mountain cliffs, glaciers, roaring rivers and many exotic flora and fauna. Besides being abided with the ecstatic natural landscapes, the region is one of the most vulnerable one, falling under the seismic zone (Zone IV to V), and known for multiple natural disasters as a threat. In recent years, it has experienced adverse weather events like unseasonal rain and snowfall, drought, flooding, landslides, and glacier lake outburst flood (GLOF).

According to the Government of Himachal Pradesh (GoHP), the region is facing such challenges due to its inadequate infrastructural facilities require to support disaster preparedness and response. There are limited response capacities and budgetary resources to fund disaster preparedness. In this backdrop, GoHP has realized that there is a requirement for an integrated disaster management program to be developed to meet the long-term challenges. Therefore, GoHP has aligned its strategic priorities to its State Policy on Disaster Management - 2011, State Disaster Management Plan - 2017 (updated 2020) (SDMP), and State Action Plan on Climate Change – 2021-2030 (SAPCC). Further, the strategy attempts to address the global framework for disaster management, as outlined in Sendai Framework<sup>1</sup> for Disaster Risk Reduction 2015-2030.

The main focus area of the strategy is to promote a multidisciplinary approach and a strong coordination mechanism for successful disaster management along with development of functional, procedural and operational controls. The strategy also recognizes the inclusion of gender aspects in disaster management with special thrust on empowerment of women towards long term disaster mitigation. For this, GoHP seeks financial and technical support from the French Development Agency (AFD) to implement a state-wide Disaster Risk Reduction and Preparedness Program. A program outlay of 100.2 million Euro<sup>2</sup> (INR 891.8 crores) has been allocated for this purpose. The GoHP and AFD have agreed to follow a Program Budget Support (PBS) instrument for Program fund flow through a partial results-based financing (RBF) approach.

### 1.1 Program Goal and Program Outline

The Program Goal is ***“Increased disaster and climate resilience among State systems and local communities in Himachal Pradesh”***. The overall Program Objective is ***“to transition to a holistic disaster and climate risk reduction framework through resilient infrastructure and improved governance.”*** This is intended to be achieved through a multi-pronged strategy comprising of: (i) strengthening the policy framework around disaster management, enhancing institutional capacities and better knowledge management; (ii) improving disaster preparedness across the State by implementing early warning systems and building disaster response capacities; and (iii) mitigation and

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<sup>1</sup> Understanding disaster risk; Strengthening disaster risk governance to manage disaster risk; Investing in disaster risk reduction for resilience, and Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation, and reconstruction.

<sup>2</sup> A formal request for a financial support of 81.9 M EUR (out of total 100 M EUR) has been placed to AFD from Department of Economic Affairs Govt. of India) in May 2020.

rehabilitation measures integrating nature-based solutions. The Program will focus on the following Result Areas/Components:

- **Result Area/Component 1:** Enhancing disaster risk governance, through improved institutional capacities, risk understanding and knowledge management;
- **Result Area/Component 2:** Strengthening disaster preparedness, through effective early warning system and better emergency response capacities;
- **Result Area/Component 3:** Supporting mitigation measures, including eco-DRR and nature-based solutions.

**The Program Objective is expected to be achieved through the following outcomes:**

1. Sustained institutional capacity building in State Emergency Operation Centre (EOC), District EOCs, Himachal Pradesh State Disaster Management Authority (HPSDMA), District Disaster Management Authorities (DDMA), and Himachal Pradesh State Institute of Disaster Management (HPSIDM).
2. Updated State and District Disaster Management Plans (DMP) by end of Program period.
3. Improved responsiveness of public financial management (PFM) systems of the State to disaster management needs.
4. Improved state of disaster preparedness.
5. Reduced damage from landslides and earthquakes.

The Program will be implemented over a period of five-years. Institutional strengthening, capacity building, gender, and climate change considerations are the cross-cutting focus areas across the Program interventions. Himachal Pradesh State Disaster Management Authority (HPSDMA) operating through the Disaster Management Cell (DMC) under Revenue Department and 12 District Disaster Management Authorities (DDMA) will be responsible for overall execution of the program; thereby acting as the Nodal agency. The implementation of the program will be executed by involving eight (8) government departments and two (2) central institutions at various stages of the project<sup>3</sup>. The overall institutional arrangement of the Program is discussed under Section 8.1.

## 1.2 Purpose, Scope and Limitation of ESMF

The Environmental and Social Management Framework (ESMF) aims to (i) mitigate the potential E&S impacts of the PBS Program (including direct, indirect, induced, and cumulative effects as relevant); (ii) enhance the GoHP's capacity (legal framework, regulatory authority, organizational capacity, and performance) to manage those impacts; (iii) compare the GoHP's systems—laws, regulations, standards, procedures, and implementation performance—against the core principles/ESS3F3F3F<sup>4</sup> and key planning elements of World Bank/ AFD to identify significant differences, if any, between them that could affect Program performance; (iv) ensure that the Program achieves its E&S objectives; and (v) recommend measures to address capacity for, and performance of, policy issues and specific

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<sup>3</sup> eight (8) Govt. Dept: Police (State Disaster Response Force - SDRF), Department of Tourism and Civil Aviation, Fire Service Department, HP Forest Department (HPFD), HP Public Works Department (HPPWD), Department of Environment, Science & Technology and Climate Change (DEST&CC), Department of Energy, Civil Defence and Home Guard Department; Two (2) Central Institute: Central Water Commission (CWC), Indian Meteorological Department (IMD)

<sup>4</sup> Environmental & Social Standards

operational aspects relevant to managing the Program risks (e.g. carrying out staff training, implementing institutional capacity-building programs, developing and adopting internal operational guidelines) through the Program Action Plan.

This ESMF document has been prepared in accordance with:

- World Bank (WB) E&S Standards (version 2016);
- WB Group Environmental, Health and Safety (EHS) Guidelines;
- AFD Environmental and Social Risk Management Approach;
- International Labor Organization (ILO)'s fundamentals conventions;
- AFD's gender approach and guidelines;
- International best practices; and
- National and State level environmental, social, and Occupational Health and Safety ("OHS") related legal framework relevant to the Program.

During the implementation phase, if the national legislation differs from the WB/ AFD standards, the more stringent one will be applied for the project implementation. Since, the location and design of few of the proposed Projects are yet to be finalized, it is not possible to assess the full environmental and social impact of such Projects at the time of preparation of this document. This framework document will enable:

- the Project stakeholders to agree on the principles of managing E&S impacts;
- the Project Owner to design a project that is respectful of the environment and the population;
- AFD to inform its decision-making process, by verifying the E&S viability of the Program.

Thus, the implementation of this ESMF will guide the integration of E&S dimensions into the decision-making process at all stages related to the planning, design, execution, operation and maintenance of Projects.

### 1.2.1 Steps for ESMF Development

As per WB/ AFD requirement, the subsequent steps to be followed for this ESMF preparation are:

**Preliminary Screening:** AFD analyses and classifies all potential projects into High, Substantial, Moderate, and Low environmental and social risks, depending on the extent of the potential risks borne by the operation through preliminary screening. The projects with significant adverse impacts are not included the Program.

**Stakeholder Engagement:** It is an essential part of the process by involving both internal and external stakeholders to give an opportunity to meaningfully participate in the ESSA process.

**Disclosure of information:** Once the environmental and social documents have been approved by AFD, especially the Environmental and Social Impact Assessment (ESIA), Environmental and Social Management Plan (ESMP) and/or Resettlement Action Plan (RAP), for transparency and accountability

purposes, the client will be encouraged to make these documents available to the public, particularly to the main stakeholders in accessible form.

**Monitoring and Implementation Support:** AFD expects its clients to implement the environmental and social measures set out in the various plans (ESCP, ESMP, RAP, etc.), which are referred to in the financing agreements, in compliance with the required deadlines.

**Grievance Redressal Mechanism (GRM):** It is an essential part of the process to receive, record, resolve, and follow up on complaints or grievances received during the Program implementation.

## 2 Project Details

HPDRR Program contains 21 Projects across three Program component/ Result areas. There are 16 investment Projects that include infrastructure investments and institutional development interventions. Besides, the Program Results Chain includes five Program Activities under Component 1 (Refer sub-section 1.1) that would be supported under RBF along with the desired results and result indicators. The RBF sub-components are dealing with guideline and policy interventions unlike typical investment Projects, therefore do not require standard E&S safeguard like ESMP, RAP etc. however Gender Action Plan (GAP) and Stakeholder Engagement Plan (SEP) are applicable for these components also. RBF encourages borrowers to undertake high-impact, low-cost policy, and institutional development actions complementary to the Program Goal and Objective. The RBF activities under component 1 are depicted below:

**Table 1: Results-based Financing (RBF) Sub-component under Component 1**

No.	Activities	Tasks	Sub-Tasks	Outcome
1.5	Mainstreaming Climate Change and Disaster Risk Resilience in HP	Ensuring integrated climate action plans and disaster management plans for select sectors are in place.	<ul style="list-style-type: none"> <li>Preparation and approval of Gram Panchayat Development Plan (GDP) including climate action and disaster planning aspects for Manikaran, Rangway &amp; Palchan Gram Panchayats.</li> <li>Preparation and approval of Divisional and State Forest Fire Management Plans.</li> <li>Preparation and approval of City Climate Action Plan (CCAP) for Chamba.</li> </ul>	Disaster Management Plans are updated by the end of the Program period.
1.6	Improvements to DRR Framework in the State	Ensuring key policy documents related to disaster management are updated.	<ul style="list-style-type: none"> <li>Update and notified HP Disaster Management and Relief Manual notified.</li> <li>Develop Knowledge repository for climate change and biodiversity management.</li> <li>Update and approve all 12 District Disaster Management Plans.</li> </ul>	
1.7	Mainstreaming Gender in Disaster Risk Resilience in HP	Ensuring policy document for gender mainstreaming is in place and disseminated.	<ul style="list-style-type: none"> <li>Diagnostic study on hindrances in mainstreaming gender in disaster management completed and recommendations accepted.</li> <li>Guidelines for mainstreaming gender in disaster management issued.</li> <li>At least 10 workshops held across the State for dissemination of the Guidelines.</li> <li>Notification of a policy document on gender mainstreaming in disaster</li> </ul>	

No.	Activities	Tasks	Sub-Tasks	Outcome
			management (e.g., measures in increasing women workforce participation in the program implementing departments and the newly proposed institutions (positive discrimination), increasing trainings on mitigation and response focusing on rural women communities, dissemination of disaster management teaching modules in schools and universities to encourage early adoption of disaster management as a career choice among women, etc.).	
1.8	Disaster responsive PFM systems	Key elements of DRR are introduced into the State's PFM architecture.	<ul style="list-style-type: none"> <li>• DRR-PFM diagnostic study completed, and recommendations accepted.</li> <li>• At least two policy-level recommendations of the DRR-PFM diagnostic study implemented.</li> </ul>	PFM systems more responsive to disaster management needs of the State.
1.9	IT solutions for effective disaster mitigation and response	IT solutions are implemented for critical disaster management functions.	<ul style="list-style-type: none"> <li>• Functional and Software Requirement Specifications signed off for: - Disaster Management Plans Monitoring System (DMPMS) - Tourist/Pilgrim Management System - Spatially-integrated Hazard Vulnerability and Household Information System.</li> <li>• DMPMS implemented.</li> <li>• Tourist/Pilgrim Management System implemented.</li> <li>• Spatially integrated Hazard Vulnerability and Household Information System implemented.</li> </ul>	

## 2.1 Project Description

Project wise detailed output, their proposed intervention and estimated costs along with their institutional arrangement are summarized in **Table 2**. In order to establish the settings of the proposed Projects, location map of the Projects is given in **Figure 1**. It is worth noting here that some of the projects are located in close vicinity of forests. The baseline conditions are further discussed in Section 4.

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**Table 2: Program Details**

No.	Project Activities	Proposed Interventions	Estimated Cost (In INR Cr)	Institutional Arrangement
<b>Component 1: Enhancing disaster risk governance, through institutional capacities, risk understanding and knowledge management/dissemination</b>				
1.1	Strengthening of HPSDMA & DDMA, state EOC and district EOCs	Strengthening of institutional capacity at SDMA and DDMA level; Development of physical infrastructure for SDMA and 6 DDMA with Emergency Operation Centre (EOC) facility	61.9	Disaster Management Cell (DMC)
1.2	Climate Change Vulnerability Assessment (CCVA) at Village Level	Climate Change Vulnerability Assessment (CCVA) at village level in Beas and Sutlej River basins considering hydro-meteorological hazards. Gender inclusion and community participation as an integral part of this project	13.4	Department of Environment, Science Technology & Climate Change (DEST&CC)
1.3	Strengthening of knowledge products related to climate change and dissemination	Developing extensive Information Education and Communication (IEC) and awareness materials in local vernacular languages, knowledge dissemination related to climate change impact; institutional capacity building. Gender inclusion and community engagement will be integral part of this project	8.5	DEST&CC
1.4	Establishing State Institute for Disaster Management	Development of physical infrastructure for State Institute for Disaster Management (SIDM) at existing campus of Himachal Pradesh Institute of Public Administration (HIPA). It will act as an institute for training, research, and design facilities.	28.9	DMC
<b>Component 2: Strengthening disaster preparedness, through effective early warning systems and better emergency response capacities</b>				
2.1	Developing EWS for landslide, flash floods, cloudbursts, GLOFs and Dam safety, Improving networks for flood forecasting, GIS-based Decision Support System (DSS)	Micro-level multi-hazard data collection and integration of that data with EWS; development of GIS-based effective DSS for all these hazards; 10 GLOF sensors at water level/bottom Level and 30 Flood sensors will be installed.	120.2	Central Water Commission (CWC) as Nodal Agency <i>Other IAs –</i> Dept. of Energy, Aryabhata Geo-informatics & Space Application Centre (AGISAC) Himachal Pradesh Council for Science, Technology and Environment (HIMCOSTE), Himachal Pradesh Power

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No.	Project Activities	Proposed Interventions	Estimated Cost (In INR Cr)	Institutional Arrangement
				Corporation Limited (HPPCL), Himachal Pradesh Public Works Department (HPPWD), Bhakra Beas Management Board (BBMB)
2.2	Improving Last Mile Connectivity by enhancing the Satellite Network	Improve connectivity by procurement of mobile satellite phone to address the inadequate coverage in remote area, particularly during disasters.	3.7	DMC
2.3	Developing climate/weather related forecast for agriculture and horticulture	Expansion the network of weather stations, real-time observatories, and digitization of administrative boundaries as well as implementation of polygon-based warning system for farmers. Improve weather forecast based Agromet advisory by establishing automatic weather stations including rain gauges up to block level.	40.9	Indian Meteorological Department (IMD) as Nodal Agency <i>Other IAs –</i> Dept. of Agriculture and Farmers Welfare, Dept. of Horticulture, AGiSAC
2.4	Enhancing Implementation of forest fire mitigation measures	Augmentation of available resource at field level to enhance the capacities of forest department and communities to respond in forest fore management issues by maintenance of fire-lines, establishing fire crew station for rapid response and installation of fire sensors at strategic locations; procurement of firefighting tools and equipment; establishment of wireless network through VHF radio communication system; improvement of moisture regime and spring shed development in highly vulnerable forest areas. Awareness generation, community participation gender inclusion are also key focus areas under this proposed intervention.	43.2	Himachal Pradesh Forest Department (HPFD)
2.5	Creation of fire stations in unserved location for enhancing fire response with equipment and vehicles and strengthening of three existing fire	Construction of five new fire station cum demonstration centers along with purchase of Fire Fighting / Hazardous material (HAZMAT) emergency vehicles with equipment for three existing fire stations.	57.9	Fire Services Department

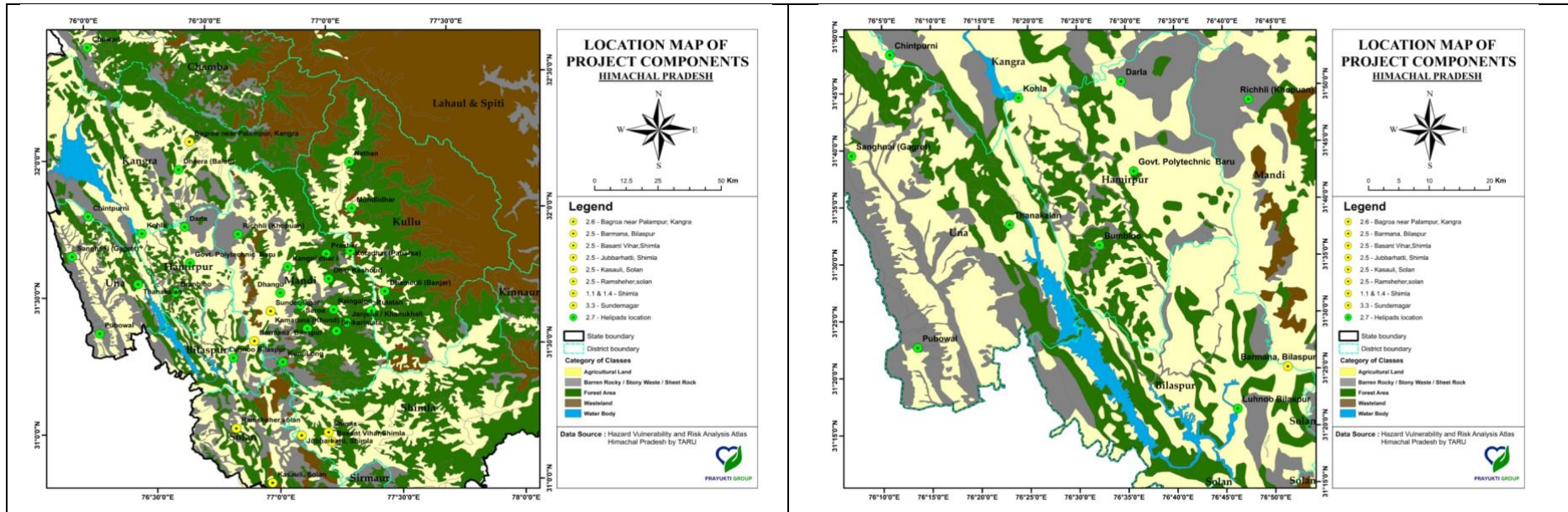
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No.	Project Activities	Proposed Interventions	Estimated Cost (In INR Cr)	Institutional Arrangement
	stations for Hazardous Materials (HAZMAT) emergencies			
2.6	Establishing SDRF 1 Company (Kangra)	Construction of infrastructure for 1 company SDRF at Kangra along with construction of staff and officer's quarter, one helipad, one no. rescue tower (60 ft. tall), area for training/ mock drill exercise etc.	110.1	Police (State Disaster Response Force - SDRF)
2.7	Establishment of helipads for emergency response	Establishment of 31 number of Helipads to enable emergency medical evacuation, search and rescue operations, deployment of emergency personnel and supplies, situational assessment and aerial surveys, coordination and logistics, rapid damage assessment, and reconnaissance survey.	22.3	Dept. of Tourism and Civil Aviation and HPPWD
2.8	Strengthening of existing Training Centers	Improvement of physical infrastructure of five existing training centers for civil defense for strengthening of disaster response	10.1	Civil Defense and Home Guards Dept.
<b>Component 3: Supporting mitigation measures, including eco-DRR and nature-based solutions</b>				
3.1	Mitigation and Slope Stabilization of Vulnerable Landslide Sites	Protection/ treatment of landslide mitigation at 11 highly vulnerable sites out of total 675 identified landslide-prone sites near critical infrastructure and habitation by slope stabilization and rock fall mitigation works, construction of box culvert, retaining wall and breast wall, wire crating, application of geo-textile materials and bio-engineering measures etc.	77.4	HPPWD
3.2	Area-specific Bioengineering Nurseries and Interventions	Strengthening of forest nurseries for production and raising of bed and tall plants for protection of landslide prone areas and erosion prone stream bank for prevent of further erosion/ landslide; restoration of riparian and stream bank ecosystem	30.1	HPFD

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No.	Project Activities	Proposed Interventions	Estimated Cost (In INR Cr)	Institutional Arrangement
3.3	Creating Climate Change & earthquake resistant Technology Demonstration Units (TDUs) at existing engineering institutes	Creating climate change and earthquake resistant Technology Demonstration Units (TDUs) at existing engineering institute campus at Sunder Nagar, Mandi. Various workshop along with demonstration and showcasing of live and animated working models for new earthquake-resistant construction technology will be done here.	41.8	DMC
3.4	Implementing Hazard resistant critical infrastructure	Seismic retrofitting and upgradation of 40 number of schools and hospitals will be done to make them more resistant to seismic activity, ground motion and soil failure due to earthquakes as per recommendation of safety audit conducted by SDMA	40.4	DMC

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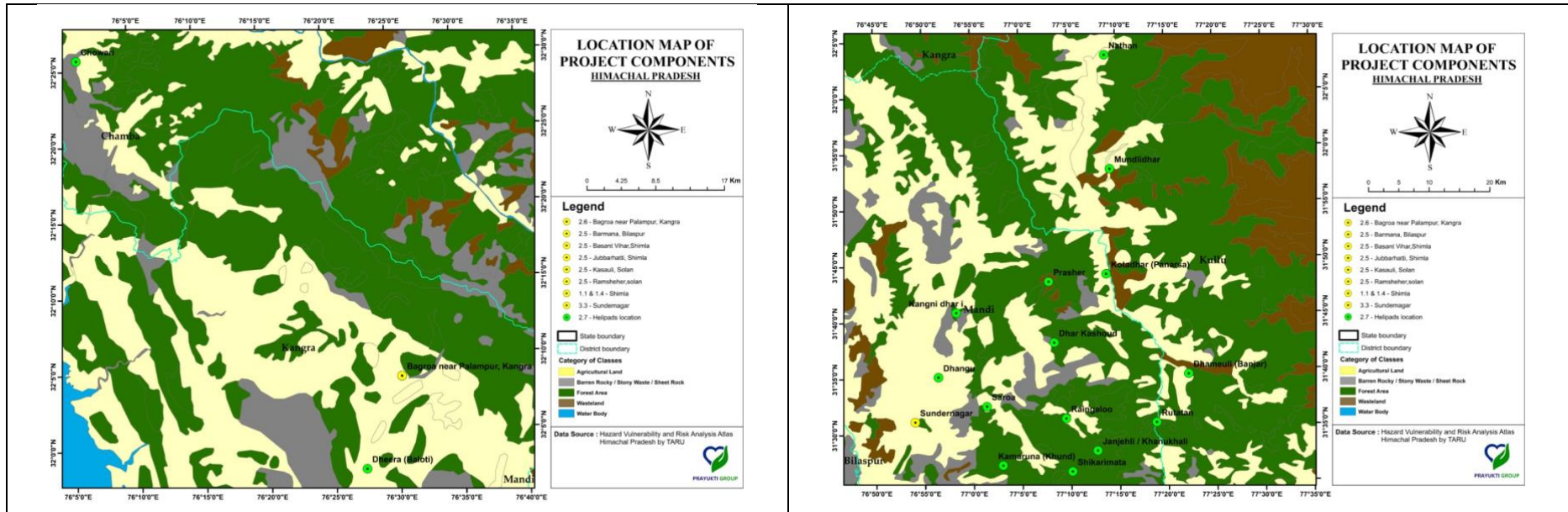


Figure 1: Project Location Map

### 3 Policy, Legal and Regulatory Framework Review

This chapter briefly summarizes the environmental and social policy, legal and regulatory framework applicable to this project. It evaluates the applicable national and state level environmental and social laws, regulations and policies as well as World Bank E&S standard (2016), AFD's environmental and social risk management approach and other international guidelines, conventions, and best practice methodologies pertaining to environmental and social issues. Finally, it describes the procedures and practices to be adopted by the GoHP departments or agencies to ensure compliance to these legal requirements.

#### 3.1 National and State Level Framework

A brief description of relevant national and state level environmental and social framework is provided in the table 3.

**Table 3: National and State Environmental and Social Legislations**

Sl.	Act/Regulations	Main Objective	Relevance/ Applicability	Implementation Agency
<b>National Environmental Regulation</b>				
1.	(i) The Environment (Protection) Act 1986 and Environment (Protection) Rules, 1986  (ii) EIA Notification, 2006	(i) To protect and improve the overall environment. (ii) For all building construction projects greater than 20000 sq. and/ or less than 1, 50,000 sq. of built-up area shall be considered as Category B project, require state level clearance. (iii) All township/ area development project greater than 50 ha and/ or built up are greater than 1, 50,000 sq.m shall be considered as Category B project, require state level clearance.	Applicable, as most environmental notifications, rules and schedules in India are issued under this Act. Standards that are specifically applicable to air, water, noise and soil components to all the civil construction work.  None of the building construction project (1.1, 1.4, 2.5, 2.6, 2.8, 3.3 and 3.4) or area development project (creation of helipad 2.7) are greater than the prescribed limit, therefore does not require any national or state level EIA clearance.	HP Department of Environment, Science & Technology (DEST) and HP State Pollution Control Board
2.	Air (Prevention and Control of Pollution) Act, 1981	To control and monitor air quality as per prescribed limits (Refer Annexure 1)	Applicable to all civil construction project, contractor is required to obtain CTE and CTO to establish and operation of Stone	HP State Pollution Control Board

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Sl.	Act/Regulations	Main Objective	Relevance/ Applicability	Implementation Agency
			crusher/ WMM/ Batching Plants during construction.	
3.	The Water (Prevention and Control of Pollution) Act, 1974	To control and monitor water pollution as per prescribed limits (Refer Annexure 1)	Applicable to all civil construction projects.	HP State Pollution Control Board
4.	The Noise Pollution (Regulation and Control) Rules, 2000	The standards for day and night time have been promulgated for various areas/zones (Refer Annexure 1)	Applicable, to all noise generating construction activities and equipment deployed at worksite.	HP State Pollution Control Board
5.	Motor Vehicles Act,1988 and Central Motor Vehicles Rules,1989	To check vehicular air and noise pollution.	Applicable for vehicles deployed in construction/ operation activities.	Department of Transport, Government of HP
6.	Indian Forest Act, 1927 The Forest Conservation Act, 1980 Forest Right Act, 2006	To check if any forest land is required for the construction purposes.	Applicable, if any conversion of forest land is required for construction purpose. Also tree felling permission need to be obtained from DFO in the context of civil work construction. Refer Annexure 2 for protected tree species for HP before planning.	HP State Forest Department
7.	Wild Life (Protection) Act,1972; Amendment, 1991, 1993, and Rules 1995 Wildlife (Protection) Amendment Act, 2002	To protect and conserve wildlife with habitat protection, regulation of wildlife trade, penalty clauses and other important regulations. In Himachal Pradesh there are 5 National Parks (NP), 26 Wildlife Sanctuaries (WLS) and 3 Conservation	Applicable, if there is any protected areas near the proposed construction site and wildlife crossings in proximity to project locations.	HP State Forest Department
8.	Wetland (Conservation and Management) Rule 2010	To ensure better conservation and management and to prevent degradation of existing wetlands in India.  There are 92 wetlands in Himachal Pradesh covering 2.25 hectares area, out of which 85 are natural and 7 are man-made which constituted one percent of the total geographical area. Pong Dam Lake (Kangra), Chandratal (Lahaul & Spiti) and Renuka (Sirmaur) have been	Applicable, if there are any notified wetland areas near the proposed construction site.	State Wetland Authority

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Sl.	Act/Regulations	Main Objective	Relevance/ Applicability	Implementation Agency
		identified as Ramsar sites whereas Rewalsar (Mandi) and Khajiar (Chamba) lakes have also been included by the Ministry of Environment Forests & Climate Change, Govt. of India for its conservation and management.		
9.	Solid Waste (Handling and Management) Rules, 2016 Plastic Waste Management Rules, 2016 Construction and Demolition (C&D) Waste Management Rules, 2016	Lays down the methods of handling Municipal Solid Waste (MSW), C&D waste and plastic waste and their scientific disposal.	Applicable for waste generated from construction work camp.  Applicable for disposal of plastic waste generated during the construction activities. For all civil works, the contractor will have to obtain authorizations for disposal of different types of wastes and scrap material only to authorized agencies.	Municipal Corporation, HP State Pollution Control Board
10.	Hazardous and Other Wastes (Management and Trans boundary Movement) Rules, 2016 The Manufacture, Storage and Import of Hazardous Chemical Rules, 1989	It stipulates the method of segregating, storing managing and disposing hazardous and other wastes regulated under the Rules. It provides measures, regulations and controls so as to reduce environmental, safety and health risks while manufacturing, handling and storage of hazardous chemicals.	Applicable, as the Project may require to store fuel, chemical and other hazardous material for construction purpose.	HP State Pollution Control Board
11.	Ground Water (Management & Regulation) Act, 2019	For regulating ground water extraction and maintenance of ground water table	Applicable, if extraction of ground water is required for construction as well as domestic use in construction camp site.	State Ground Water Board
12.	Public Liability and Insurance Act, 1991	Protection from Hazardous materials and accidents.	Applicable, as the Project may require storage of fuel and hazardous material for construction purpose.	Government of HP
13.	Ancient Monuments and Archaeological Sites and Remains Act, 1958	To protect ancient and historical monuments and archaeological sites and remains of national importance.	Applicable if any such cultural heritage site near the proposed construction activities.	Archaeological survey of India, Gol, Indian Heritage Society and Indian National Trust for Art and

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Sl.	Act/Regulations	Main Objective	Relevance/ Applicability	Implementation Agency
				Culture Heritage (INTACH)
14.	The Explosives Act & Rules Explosives Rules, 2008 The Petroleum Rules, 2002	An Act to regulate the manufacture, possession, use, sale, transport, import and export of Explosives (For transporting and storing diesel, bitumen etc.). Delivery, dispatch or storage of petroleum products by authorized persons/organization	Applicable, as the Project may require storage of Diesel and aviation fuel for helipad exceeding the allowable limit. No license required up to storage of 2500 Lt. of any Class B type of petroleum product (PESO).	Petroleum & Explosives Safety Organization (PESO)
15	Model Building By-Laws, 2004 And National Building Code of India, 2005	To regulate coverage, height, building bulk, and architectural design and construction aspects so as to achieve orderly development of an area. To look after all construction activities related to building design and planning ranging from small buildings to the large township and industrial estate. It also takes the account of public health and safety in Buildings.	Applicable for all civil construction work	Local urban development or town planning authority, H.P. Bureau of Indian Standards (BIS)
16.	Code on Occupational Safety, Health and Working Conditions, 2020 National Policy on Safety, Health and Environment at Workplace, 2009	regulating the occupational safety, health and working conditions of the persons employed in an establishment and for matters connected therewith	Applicable for construction worker during construction period.	Labor Welfare Department
17.	DGCA Guideline, 2021	Regulate site selection, design criteria, safety consideration, licensing and certification for helipad construction.	Applicable, as the project involve creation of helipad under 2.7.	DGCA
<b>National Social Regulations</b>				
1.	The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013	This Act is applicable for acquisition of land for public purposes.	Applicable, if the project envisages any Land Acquisition for construction purpose.	State Revenue Department
2.	Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013	The Act is meant to serve as guidelines for the employee's subject to the provisions of the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act,	Applicable, if women worker would engage in construction work. Contractor should ensure the same.	Labor Welfare Department

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Sl.	Act/Regulations	Main Objective	Relevance/ Applicability	Implementation Agency
		2013. It aims to set out effective measures to avoid & to eliminate & if necessary to impose punishment for any sexual harassment in the workplace.		
3.	The Child Labor (Prohibition and Regulation) Act, 1986.	The Act prohibits employment of children (those who have not completed their fourteenth year) in certain occupations and processes (part II, Section 3).	Applicable for civil construction work. Contractor should ensure the same.	Labor Welfare Department
4.	Contract Labor (Regulation and Abolition) Act 1970 along with rules, 1971	The act ensures exploitation of contract labor and also to introduce better work condition	Applicable for civil construction work. Contractor should ensure the same.	Labor Welfare Department
5.	Employees Provident Funds and Miscellaneous Provisions Acts 1952 along with EPF Scheme Rules and Forms	It is a beneficent piece of social welfare legislation aimed at promoting and securing the well-being of the employees	Applicable for civil construction work. Contractor should ensure the same.	Labor Welfare Department
6.	Employees State Insurance Act 1948 along with Rules and Regulations	Protect the interest of workers in contingencies such as sickness, maternity, temporary or permanent physical disablement, death due to employment injury resulting in loss of wages or earning capacity. Act also guarantees reasonably good medical care to workers and their immediate dependents.	Applicable for civil construction work. Contractor should ensure the same.	Labor Welfare Department
7.	Equal Remuneration Act, 1976 along with allied Rules	An Act to provide for the payment of equal remuneration to men and women workers and for the prevention of discrimination, on the ground of sex, against women in the matter of employment and for matters, connected therewith or incidental thereto.	Applicable for civil construction work. Contractor should ensure the same for both men and women workers engaged in civil construction work.	Labor Welfare Department
8.	Inter State Migrant Workmen (Regulation of Employment and Conditions Service Act	To regulate the condition of service of inter- state laborers in Indian labor law. The Act's purpose is to protect workers whose services are requisitioned outside their native states in India. Whenever an employer faces shortage of skills among the locally available workers, the act creates provision to employ better skilled workers available outside the state	Applicable for civil construction work. Contractor should ensure the same.	Labor Welfare Department

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Sl.	Act/Regulations	Main Objective	Relevance/ Applicability	Implementation Agency
9.	Minimum Wages Act 1948 along with Central Rules 1950	To ensure that workman gets at least minimum wages as fixed by Govt. Minimum wages sets the lowest limit below which wages cannot be allowed to sink.	Applicable for civil construction work. Contractor should ensure the same.	Labor Welfare Department
10.	Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participations) Act, 1995 along with Rules,1996 and National Trust for Welfare of Persons with Disabilities Act,1999 with rules 2000.	It gives effect to the proclamation on the full Participation and equality of the persons with disabilities in the Asian & Pacific Region and provides for their education, employment, creation of barrier free environment, social security, etc.	Applicable for civil construction work as well as during the operation phase of the project. Contractor has scope of employing person with disabilities during construction. All the building design should be user friendly for Persons with Disabilities.	Labor Welfare Department
11.	Right to Information Act 2005	Empower the citizens, promote transparency and accountability in working of public authority, contain corruption	The project activities come under the purview of Right to Information Act and any citizen can obtained any information about any aspect of the project.	Nodal Officer of the project RTI
12.	Building and Other Construction Workers Welfare Cess Act, 1996	An Act to provide for the levy and collection of Cess on the cost of construction incurred by employers.	Yes, Construction workers will be involved in the project.	District Labor Commissioner
<b>HP State Regulations</b>				
1	Himachal Pradesh State Water Policy 2013	Ensure adequate, safe and sustainable drinking water facilities will be provided to the entire population both in urban and rural areas throughout the year as per relevant BIS Standards/CPHEEO Manual	Applicable for civil construction work nearby to surface water resources.	Jal Shakti Vibhag (JSV)
2	HP Ground Water (Regulation and Control of Development and Management) Act, 2005. HP Ground Water (Regulation and Control of Development and Management) Rules, 2006	This Act aims to regulate and control the development and management of groundwater resources in Himachal Pradesh. Any user of the groundwater desiring to sink a well within the notified area should get permission from the Authority.	Applicable, if extraction of ground water is required for construction as well as domestic use in construction camp site.	State Ground Water Board

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Sl.	Act/Regulations	Main Objective	Relevance/ Applicability	Implementation Agency
3	Himachal Pradesh Private Forests Act, 1954 HP Forest Produce (Regulation of Trade) Act 1982 Himachal Pradesh Preservation of Forests and Maintenance of Supplies of Forest Based Essential Commodities Act, 1984	It reserves conservations of certain tree species (refer the act) require permission for cut and transit	Applicable, if any tree felling required for civil construction work. Prior permission to obtain from DFO. No tree felling of protected category species are allowed (Refer Annexure 2)	HP State Forest Department
4	Himachal Pradesh Non-Biodegradable Garbage (control) Act, 1995 Plastic Waste Management Rules, 2018 (updated)	This is to ensure segregation, collection, storage, transportation, processing and disposal of plastic waste in a manner that there is no damage is caused to the environment during this process.	Applicable for disposal of plastic waste generated during the construction activities.	HP State Pollution Control Board
5	Himachal Pradesh Land Revenue Act, 1954 The Himachal Pradesh Transfer of Land (Regulation) Act, 1968 Himachal Pradesh utilization of Lands Act, 1973 Himachal Pradesh Village Common Lands Vesting and Utilization Act, 1974 HP Land Preservation Act, 1978 HP Land Preservation Rules, 1983	This Act and associated Rules provide for better preservation and protection of certain portions of territories of Himachal Pradesh. The State Government may notify the areas that are subject to or likely to be subject to erosion. Activities like clearing, breaking up, quarrying, and cutting trees of timber are not permitted, regulated or restricted in such areas	Applicable for selection of site for civil construction work.	HP State Forest Department
6	HP Ancient and Historical Monuments and Archaeological Sites and Remains Act, 1976.	The Act and Rules protect the archaeological sites, and no person shall undertake any construction within the protected or regulated area except in accordance with the permission granted.	Applicable if any such cultural heritage site near the proposed construction activities.	Department of State Archaeology, Language & Culture
<b>National and State Policies on Disaster Risk Management</b>				
1	Disaster Management Act, 2005  National Disaster Management Plan, 2016	Provides effective management of disasters and for matters connected there with or incidental "thereto". The main focus of this act is to provide the people who are affected with	Applicable for all infrastructure development project	SDMA and NDMA

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Sl.	Act/Regulations	Main Objective	Relevance/ Applicability	Implementation Agency
	State Policy on Disaster Management (2011)  State Action Plan on Climate Change (2021-30)	disasters, their life back and helping them. To strengthen the governance of disaster risk at every level, i.e., from national to local. To invest in the reduction of disaster risk for resilience by means of structural, non-structural and financial measures, and also by a comprehensive capacity development.		
2	Himachal Pradesh State Disaster Management Plan, 2017 (updated 2020)	The Policy aims at providing guiding principles for reducing, preventing, mitigating disaster risk and creating a system for effective disaster response. It also aims at providing guidelines for post disaster relief, rehabilitation and reconstruction codes and guidelines.	Applicable for all infrastructure development project	SDMA
3	National Action Plan on Climate Change And National Guidelines issued by the NDMA	Protecting the poor through an inclusive and sustainable development strategy, sensitive to climate change; Achieving national growth and poverty alleviation objectives while ensuring ecological sustainability; To build a safer and disaster resilient India by a holistic, proactive, technology driven and sustainable development strategy that involves all stakeholders and fosters a culture of prevention, preparedness and mitigation	Applicable for all infrastructure development project	MOEFCC, NDMA and SDMA
4	Guidelines for administration of the National Disaster Response Fund (NDRF) And Guidelines and provision for State Disaster Response Fund (SDRF)	The primary aims of disaster response are rescue from immediate danger and stabilization of the physical and emotional condition of survivors. These go hand in hand with the recovery of the dead and the restoration of essential services such as water and power. To support states in undertaking immediate relief measures in the wake of a disaster. The fund also helps in the capacity building of states to handle disasters effectively and efficiently.	Applicable for any unforeseen event during construction and operation phase	NDMA, MHA and SDMA

### 3.2 Clearance to be Obtained before Construction Work

Project Management Unit (PMU, here SDMA) will ensure all necessary regulatory clearances and approvals are obtained prior to commencement of works. An indicative list of permissions and clearance to be obtained before prior to start of construction work are listed in **Table 4**.

**Table 4: Required Clearances before Construction Work**

Sl.	Clearance Required for	Statute under which clearance is required	Statutory Authority
1	Setting of Hot mix plants, Crushers, Batching Mix Plants & DG Sets.	Air (Prevention and Control of Pollution) Act, 1981 and Noise Pollution (Regulation and Control) Rules, 2000	State Pollution Control Board
2	Storage, handling and transport of hazardous materials, storage of fuel oil, lubricants, explosives, diesel etc. at construction camp.	Hazardous and other Waste (Management and Transboundary Movement) Rules 2016 and amended thereof	State Pollution Control Board and PESO
3	Location/ layout of workers camp, equipment and storage yards	Environment Protection Act, 1986 and Manufacturing, Storage and Import of Hazardous Chemicals Rules, 1989	Local authority
4	Quarries (Aggregates, Sand & Earth)	Environment Protection Act, 1986	State Pollution Control Board
5	Permission for extraction of groundwater for construction purpose.	Environment Protection Act, 1986	Ground Water Board
6	Disposal of bitumen and other hazardous wastes	Hazardous Waste (Management and Handling) Rules, 1989	As per state norm/ Local Civic Body
7	Pollution Under Control Certificate	Central Motor and Vehicle Act 1988	Department of Transport, State Government.
8	Tree felling	National Forest Policy, 1988	State Forest Department

### 3.3 AFD-World Bank Environmental and Social Standards/ Policies

AFD has mandated the adherence to environmental and social safeguards that contribute to France's Official Development Assistance (ODA) strategy, the implementation of the 2030 Global Agenda and the 17 Sustainable Development Goals (SDGs), as well as the 2015 Paris Climate Agreement. AFD has developed Operating Procedures<sup>5</sup> to identify, prevent or mitigate environmental and social risks and impacts, as well as any human rights violation that could result from AFD funded activities. The AFD follows World Bank principles and guidelines for Environment and Social Standards - Resettlement, Stakeholder Engagement, and Grievance Redressed Mechanism. The review of relevant and applicable E&S standards and policies of the World Bank in project context is presented in

Table 5.

<sup>5</sup> Environmental and Social Risk Management Policy for AFD-funded Operations. Available at: [https://www.afd.fr/sites/afd/files/2017-10/Environmental-social-risk-management-policy-afd\\_0.pdf](https://www.afd.fr/sites/afd/files/2017-10/Environmental-social-risk-management-policy-afd_0.pdf)

**Table 5: Applicable AFD/World Bank Safeguard Standards**

AFD/ World Bank Safeguard Standards	Description	Applicability to HP DRR Project
ESS1: Assessment and Management of Environmental and Social Risks and Impacts (OP/ BP 4.01 Environmental Assessment)	Integrates Environmental and Social Assessment; includes requirements related to non-discrimination and social inclusion; proportionality and adaptive management; use of the ESCP.	<b>Applicable.</b> As the specific interventions envisaged building construction, creation of helipad and fire station, land slide mitigation etc. which may involve have some potential adverse environmental impacts in their area of influence. Such impacts will depend upon their location, nature and magnitude of interventions. ESS 1/ OP 4.01 has been triggered to ensure that such interventions have sound and sustainable design measures by integrating environmental dimensions into the over-all decision-making process. Identification of any potential impacts and mitigation/ enhancement measures to address likely impacts is proposed.
ESS2: Labor and Working Conditions (OP/ BP 4.01 Environmental Assessment)	Prohibits child labour and forced labour, heightened focus on OHS, grievance mechanisms	<b>Applicable</b> for all civil construction projects.
ESS3: Resource Efficiency and Pollution Prevention and Management (OP4.09 Pest Management)	Promotes efficient management of energy, water, and other resources and materials; hazardous materials management; pesticides; GHG assessment mandate	<b>Applicable</b> for all civil construction projects.
ESS4: Community Health and Safety (OP/BP4.37 Safety of Dams)	Assess risks and impacts on communities; Design of safe and resilient infrastructure, equipment operation, products, services, road safety, hazardous materials; emergency preparedness	<b>Applicable.</b> As the specific interventions envisaged under the project building construction, creation of helipad and fire station, land slide mitigation etc. which may involve have some potential adverse impact on community health and safety in their area of influence.
ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement (OP/BP4.12 Involuntary Resettlement)	Greater clarity on treatment of state land, land titling, access to common resources, voluntary transactions, forced evictions	<b>Applicable</b> for all infrastructure related projects

AFD/ World Bank Safeguard Standards	Description	Applicability to HP DRR Project
ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources OP/BP4.04 (Natural Habitats) and OP/BP4.36 (Forests)	Expanded requirement to assess and mitigate impacts on biodiversity including in primary supply chains; biodiversity offsets; management of living resources in additional sectors (e.g. agriculture)	<b>Applicable</b> , as 8 helipad Locations are under Forest Area <sup>6</sup> (detailed location map with land use pattern provided in Annexure 3).
ESS7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities (OP/BP4.10 Indigenous Peoples)	Clearer definitions of IP, requires FPIC in specified circumstances	<b>Applicable</b> for the project in tribal districts of HP like Kinnaur, Lahaul and Spiti.
ESS8: Cultural Heritage (OP/BP4.11 Physical Cultural Resources)	Enhanced consultation with affected communities, intangible heritage	<b>Applicable</b> for the projects, depending on siting.
ESS9: Financial Intermediaries	Establish E&S procedures commensurate with FI nature, risk level and impact	<b>Not Applicable</b> for any of the projects
ESS10: Stakeholder Engagement and Information Disclosure	Meaningful consultation, access to information and grievance redress through the life of project	<b>Applicable</b> for all the project

### 3.4 International Agreements and Conventions

India has become a party to various international agreements and conventions related to environment, biodiversity, occupational health and safety and cultural heritage on a global and regional scale which are summarized below.

**Table 6: Applicable International Agreements and Conventions**

International Agreement	Description	Applicability to HP DRR Project
Ramsar Convention, 1971	The Ramsar Convention is an intergovernmental treaty that provides the framework for national action and	Applicable to projects if only any of the site selected for

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1. <sup>6</sup> Bumbloo Distt. Hamirpur
  2. Janjehli / Khanukhali Distt. Mandi
  3. Raingaloo Distt. Mandi
  4. Rutatan Distt. Mandi
  5. Shikarimata Distt. Mandi
  6. Kamaruna (Khund) Tehsil Chachiot, Distt. Mandi
  7. Dhar Kashoud (Distt Mandi)
  8. Prasher Distt. Mandi

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International Agreement	Description	Applicability to HP DRR Project
	international co-operation for the conservation and wise use of wetlands and their resources. India is one of the signatories to the treaty. The Ramsar convention made it mandatory for the signatory countries to include wetland conservation in their national land use plans.	civil construction located in or near Ramsar wetlands. There are three Ramsar Sites in Himachal Pradesh: Pong Dam Lake (Kangra), Chandratal (Lahaul & Spiti) and Renuka (Sirmaur) have been identified as Ramsar sites. Not applicable as per submitted concept plan.
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), 1973	India is a signatory of this convention which aims to control international commercial trade in endangered species	Not anticipated
Montreal Protocol 1992	India is a signatory of this convention which aims to reduction in the consumption and production of ozone-depleting substances (ODS), while recognizing differences in a nation's responsibilities. Ozone depleting substances are divided in two groups Chlorofluorocarbons (CFCs) and Hydro chlorofluorocarbons (HCFCs)	Not applicable in this Program as no ODS are involved in construction works
Basel Convention on Trans-boundary Movement of Hazardous Wastes, and Their Disposal,1989	India is a signatory of this convention which aims to reduce trans-boundary movement and creation of hazardous wastes	Not applicable in this Program as no transboundary movement of waste is involved
Convention on Migratory Species of Wild Animals (CMS), 1979 (Bonn convention)	The convention recognizes that states must be the protectors of migratory species that live within or pass through their national jurisdictions, and aims to conserve terrestrial, marine and avian migratory species throughout their ranges.	Not applicable to this project as no migratory species of wild animals are reported in the project areas.
World Bank Group General EHS	The policy provides guidance to the users on EHS issues. It includes environmental issues, occupational and community health and safety issues during construction and operation phase of the project.	Applicable to the hazard and risk identified for each project on the basis of the results of the environmental assessment.
ILO declaration on fundamental principles and right at work	It affirms the basic human values at worksite by ensuring: <ul style="list-style-type: none"> <li>• freedom of association and the effective recognition of the right to collective bargaining;</li> <li>• the elimination of all forms of forced or compulsory labor;</li> <li>• the effective abolition of child labor;</li> <li>• the elimination of discrimination in respect of employment and occupation; and</li> </ul>	Applicable for the project to secure human rights.

International Agreement	Description	Applicability to HP DRR Project
	<ul style="list-style-type: none"> <li>A safe and healthy working environment.</li> </ul>	
Sendai Framework on disaster Risk Reduction (2015-30)	It pursues the following goal: Prevent new and reduce existing disaster risk through the implementation of integrated and inclusive economic, structural, legal, social, health, cultural, educational, environmental, technological, political and institutional measures that prevent and reduce hazard exposure and vulnerability to disaster, increase preparedness for response and recovery, and thus strengthen resilience	Applicable for the project
Un Framework Convention on Climate Change: standpoint of India	India has committed to reducing emissions intensity of its GDP by 45 percent by 2030, from 2005 level and achieve about 50 percent cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030.	Applicable for the project

### 3.5 Gap analysis between national regulations and World Bank E&S Standards

It can be inferred that, while most of the E&S requirements of World Bank ESS are addressed by Indian legislation, application of such legal requirements is not inclusive to all such projects in India. Such as differential categorization of impact, different documentation requirement, various stages of stakeholder participation, different procedure of information disclosure and mandatory inclusion of grievance redressal mechanism. A comparative list of Bank's E&S standard vs. relevant national legislation are given below.

**Table 7: ESS Standards vis-à-vis Indian Legislative Framework**

World Bank/AFD Safeguard Standards	Requirement for Environment & Social Impact Assessment (ESIA)	Relevant Legislation of GoI/GoHP	Gap Analysis
ESS 1: Assessment and Management of Environmental and Social risks and Impacts	Identify & assess potential environmental and social impacts of sub projects, holding public consultations with local affected communities and all stakeholders.	The Wildlife (Protection) Act, 1972 The Water (Prevention and Control of Pollution) Act, 1974 The Air (prevention and control of pollution) act, 1981 The Environment (Protection) Act, 1986	No
ESS 2: Labor and Working Conditions	Identification and assessment of OHS risk	Occupational Safety, Health, and Working Conditions Code, 2020	Yes, WB/AFD ESS will take precedence.

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World Bank/AFD Safeguard Standards	Requirement for Environment & Social Impact Assessment (ESIA)	Relevant Legislation of GoI/ GoHP	Gap Analysis
	and Grievance redressed	However, this code does not include unorganized sector and no judicial mechanism is provided for dispute resolution.	
ESS 3: Resource Efficiency and Pollution Prevention and Management	This ESS sets out the requirements to address resource efficiency and pollution prevention and management throughout the project life cycle consistent with GIIP	The Environment (Protection) Act, 1986 The Energy Conservation Act, 2001 Compensatory Afforestation Fund Act, 2016	No
ESS 4: Community Health and Safety and EHS Guidelines	Assess risks and impacts on communities; Design of safe and resilient infrastructure, equipment operation, products, services, road safety, hazardous materials; emergency preparedness.	There is no equivalent legislation in India, in particular for Dam Safety.	Dam safety is not involved in this Program. However, for Community Health and Safety WB/AFD ESS will take precedence.
ESS 5: Land Acquisition, Restriction on Land Use and Involuntary Resettlement	Project will try to avoid any proposed investments that will lead to loss of or access to economic assets, loss of income or resettlement, where this is not possible, the effected people/household should be identified, compensated and resettled according to the RAP. <sup>7</sup>	The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation, and Resettlement Act, 2013	There is no policy of compensation for non-title holders under Indian system. Therefore, for such situations, WB/AFD ESS will take precedence where the non-titleholders will also be compensated by the Project from State contribution.
ESS 6: Biodiversity Conservation and Suitable Management of Natural Resources	The project will identify the important habitats and forest areas in the areas of proposed areas, and if necessary, the EA process will further identify the ecological functions they perform, the degree of threats to the	Compensatory Afforestation Fund Act, 2016 Biological diversity Act, 2002	No

<sup>7</sup> Since the project envisages the risk of Involuntary Resettlement (IR) to be low therefore RAP will directly be prepared instead of Resettlement Policy framework (RPF), if ESIA identifies need for IR.

World Bank/AFD Safeguard Standards	Requirement for Environment & Social Impact Assessment (ESIA)	Relevant Legislation of GoI/GoHP	Gap Analysis
	sites, and the priorities for conservation.		
ESS 7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	ESIA will identify the tribal population in the project area to help their participation in the project.	Constitution of India – Article 275, 244, A330, A334, A371 and A164 (1) as well as Fifth and Sixth Schedule. The Scheduled Tribes and Scheduled Castes (Prevention of Atrocities) Act, 1985	No
ESS 8: Cultural Heritage	EA checklist will include available information concerning cultural property aspects of proposed sites for activities, followed up by a reconnaissance survey if cultural property may exist (necessary Permission requirement will be found).	The Ancient Monuments and Archaeological Sites and Remains Act of 1958 Heritage Conservation and Preservation Act, 2010	No
ESS 10: Stakeholder Engagement and Information Disclosure	ESIA process will ensure stakeholder engagement and information disclosure during the field survey.	Covered across several legislations e.g. The Environment (Protection) Act, 1986 which mandates public consultations during certain projects. However, all projects do not require this sort of public consultation as per law.	For projects not requiring formal public hearing as per Indian legislation, WB/AFD ESS will take precedence.

### 3.6 AFDs Categorization and Exclusion Criteria

AFD analyses and classifies all potential projects into **High (A) – Substantial (B+) – Moderate (B) – Low (C)** depending on the extent of the potential environmental and social risks. The classification considers the nature and scale of the operation, the location and sensitivity of the affected area, the severity of the potential environmental and social risks and impacts, and the client’s capacity to manage them. To confirm that none of the Projects would have significant environmental and social impact, a screening checklist (Refer Annexure 4) is used. AFD has identified a list of prohibited activities under the laws of national (host country) and international regulations, as well as international conventions and agreement creating commitment towards achieving sustainable development goals (refer: Annexure 5). Compliance to this exclusion list need to be ensured before project implementation and during the project cycle.

## 4 Environmental and Social Baseline

This chapter presents the environmental and socio-economic condition of the state and how it may influence the proposed Program. The location of proposed projects and its surrounding socio-economic attributes will have significant bearing on the outcome of this Program.

### 4.1 Geography

Himachal Pradesh is located between 30° 22'40" & 33° 12'40"N latitude and 75° 47'55" & 79° 04'20"E longitude in the western Himalayas. It consists of a total area of 55,673 sq. km. The state is bounded by Jammu & Kashmir in north, Punjab in west, Haryana in south and Uttarakhand in southeast parts. It shares an international border with China (Tibet) in northeast. The state has 12 administrative districts (Bilaspur, Chamba, Hamirpur, Kangra, Kinnaur, Kullu, Lahaul & Spiti, Mandi, Shimla, Sirmaur, Solan and Una), 76 tehsils, 34 sub-tehsils and 78 blocks. There are 20,690 villages, 3,226 Gram Panchayat, 59 towns, 28 Nagar Panchayat and 25 Nagar Parishad including Municipal Corporations. Lahaul & Spiti is the largest and Hamirpur is the smallest district of the state.

### 4.2 Topography and Land Use

Himachal Pradesh with its diverse geological structures presents a complicated topography<sup>8</sup> with intricate mosaic of mountain ranges, hills and valleys with altitude ranging from 350 m to 6500 m above msl. The state is bordered by several prominent mountain ranges. The Dhauladhar range looks in supreme majesty over the Kangra valley while the Pir Panjal, the Great Himalaya and the Zaskar ranges guard over Chamba, Lahaul & Spiti, Kullu and Kinnaur districts. Some notable interspersed valleys and plateaus are Kullu valley in district Kullu, Chamba valley in district Chamba, Spiti valley in district Lahaul and Spiti, Indora- Nurpur and Kangra-Palampur valleys in district Kangra, Una valley in district Una, Balh valley in district Mandi, Nalagarh valley in district Solan and Paonta valley in district Sirmaur.

The predominant land use pattern in the state is permanent pastures and grazing land followed by forest land and uncultivable land. Category wise net available area of land along with their percentage are depicted below in **Table 8** and **Figure 2** respectively.

**Table 8: Land Use Pattern in Himachal Pradesh**

Sl. No.	Category	Area in '000 ha (Lakh)	Percentage
1	Geographical Area	5567	
2	Reporting Area for land utilization	4549	100.0
3	Not Available for cultivation Barren and uncultivable land	1129	24.82
4	Cultivable wastelands	138	3.03
5	Current fallows	64	1.41

<sup>8</sup> Refer Topographic sheets Nos. 52D, 52H, 52L, 53A, 53B, 53F, 53E and 53I (Survey of India)

Sl. No.	Category	Area in '000 ha (Lakh)	Percentage
6	Fallow lands other than current fallows	15	0.33
7	Forest land under good tree cover	1101	24.21
8	Misc. tree crops and groves	65	1.43
9	Permanent pastures and grazing lands	1496	32.89
10	Net sown area	541	11.90
11	Gross sown area	951	
12	Cropping Intensity	175.8	

Source: Government of Himachal Pradesh, Statistical Abstract of Himachal Pradesh 2017-18, Directorate of Land Record Shimla, 2011, pp. 42.

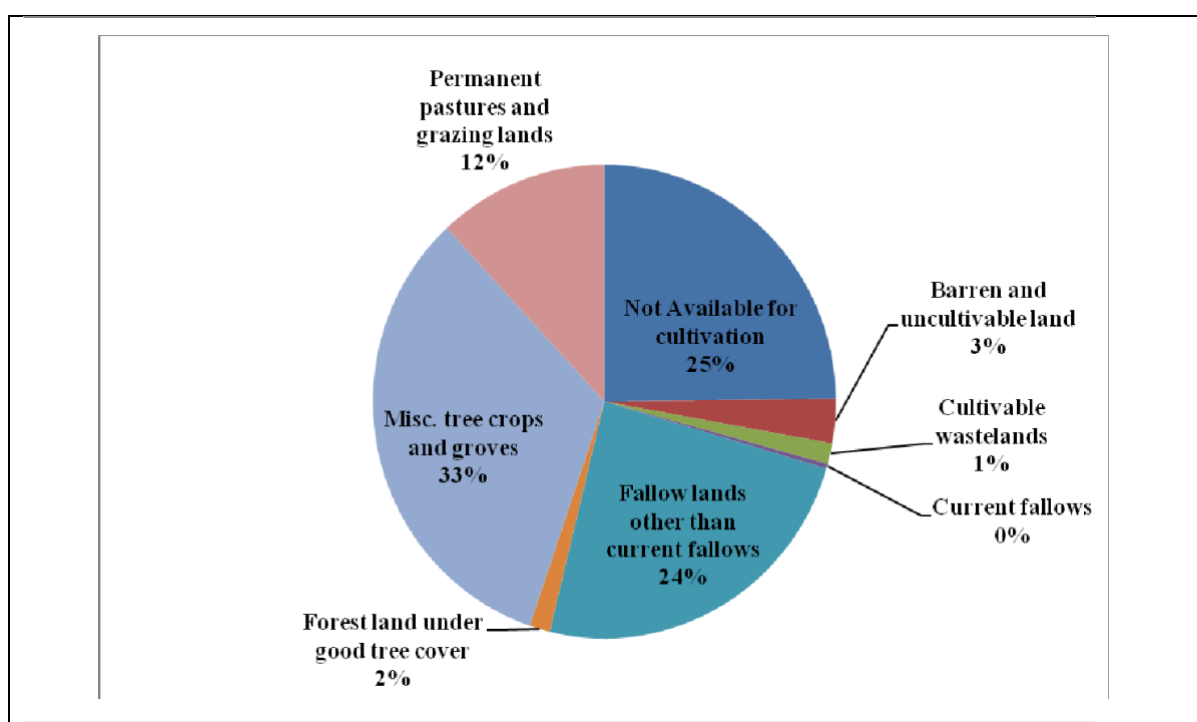


Figure 2: Land Use Pattern in Himachal Pradesh

Source: Land Utilization and Cropping Pattern in Himachal Pradesh, Dr. Sham Singh Bains, Mr. Devinder Kumar Atlas

### 4.3 Physiography and Hydrogeology

Physiography of the state can be broadly divided into four major regions:

**The Shivalik Range:** The southernmost region of Himachal Pradesh which is part of the Outer Himalayas. It is characterized by low hills, valleys, and narrow ridges. The elevation of this region ranges from around 600 meters to 1,500 meters above sea level. The Shivalik Range is known for its forests, wildlife, and fertile agricultural lands.

**The Lesser Himalayas:** Moving northwards, the Lesser Himalayas form the central region of Himachal Pradesh. This region is characterized by higher mountain ranges, deep valleys, and swift-flowing rivers.

The elevation in this region ranges from around 1,500 meters to 4,500 meters above sea level. The Lesser Himalayas are home to popular hill stations like Shimla, Manali, and Dalhousie. It is covered with dense forests, including oak, pine, and deodar.

**The Great Himalayas:** The northernmost region of Himachal Pradesh is occupied by the Great Himalayas, which are the highest mountain ranges in the state and the world. Several majestic peaks, including the famous Kinnaur Kailash, can be found in this region. The elevation here exceeds 4,500 meters, with some peaks reaching over 6,000 meters. The Great Himalayas are characterized by snow-capped peaks, glaciers, and alpine meadows. This region is sparsely populated and predominantly inhabited by tribal communities.

**The Trans-Himalayas:** Located in the eastern part of Himachal Pradesh, the Trans-Himalayas form a distinct region. This area is characterized by high mountain ranges, barren landscapes, and cold deserts. It includes the districts of Lahaul and Spiti. Trans-Himalayas are known for their unique flora and fauna, including rare medicinal plants and wildlife species like the snow leopard.

The Siwalik and Sirmour group represent the Tertiary formation in the state. These two groups occur in the western part of the state and have northwest to southeast trend. The Siwalik comprises of boulder, conglomerate, sandstone and clay while, Sirmour group comprises of shale, sandstone and clay. The primary porosity and permeability in the Tertiary formation is low to moderate and hence, these aquifers do not form high yielding aquifers. The older rock formations of Proterozoic to Mesozoic eras constitute of igneous and metamorphic rocks like granite, gneiss, slate, schist, phyllite, quartzite etc. Because of their consolidated nature, these rock formations serve as poor aquifers. However, due to tectonic movements, they have been traversed by faults, thrust and joints, which have enhanced their ground water potential.

#### 4.4 Water Resource

The water resource of the state comprises of rivers, lake and glaciers. The state has a unique distinction of having drainage systems of both the Indus and the Ganga basin. The major river systems of the region are the Chandra-Bhaga or the Chenab, the Ravi, the Beas, the Satluj and the Yamuna. The catchments of these rivers are fed by snow and rainfall, and are protected by fairly extensive cover of natural vegetation. Major rivers of the Indus River basin are the Chenab, the Ravi, the Beas and the Satluj. The Yamuna is the only river contributing water to Ganga basin. There are numerous glacial lakes, such as the Chandratat Lake, Suraj Tal, and Dal Lake.

##### **Sutlej River:**

Amongst the five major rivers of Himachal, Sutlej is the longest, traversing between the intricate channels of Punjab as well as Pakistan. This river is also known by the name Satadree. This is a tributary at the eastern extreme of Indus River. The river flows about 260 km in this area under the name of Langqen Zangbo (Elephant River) before entering India at Kinnaur, Himachal Pradesh through Shipki La pass. In Himachal Pradesh, Satluj flows through the district of Kinnaur, Shimla, Kullu, Solan, Mandi, and Bilaspur. It leaves Himachal Pradesh at Bilaspur and enters Punjab at Bhakra. The major tributaries of Satluj River are Baspa, Beas, Soan, Spiti, Ungti Chu, and Pare Chu.

**Beas River:**

Beas river rises from the Beas Kund in Pir Panjal range near Rohtang Pass and flows around 256 km in Himachal Pradesh. It traverses through Mandi and Kangra districts of Himachal Pradesh, before entering Punjab. It joins Satluj at Kapurthala, Punjab, after the course of 470 km. The chief tributaries of Beas River are Banganga, Binwa, Chakki, Hurla, Luni, Malna, Mankhand, Parbati, Phung, Spin, Sainj, Suheti, and Uhl.

**Chenab River:**

Chenab, also known as Chandrabhaga, originates from Tandi in Lahaul-Spiti where two rivulets Chandra and Bhaaga meet to form this river. It is the largest river of Himachal Pradesh in terms of water volume. It was known as Askini or Iskamiti to Vedic people and Acesines to Ancient Greeks. It flows through Lahaul-Spiti, and Chamba districts of the State, before entering plains of Kashmir at Sansari Nala. The chief tributaries of Chenab are Chandra, Bhaga, Miyar Nullah, Saicher Nullah, Jammu Tavi and Munawarwali.

**Ravi River:**

Ravi is one of the five major tributaries of Indus. It originates from Bara Banghal as a joint stream formed by glacier-fed 'Bhadal' and 'Tant Gari'. In Himachal Pradesh, it flows through Kangra and Chamba districts, before entering Kashmir at Kheri. Some of the major tributaries are Bhadal, Nai, Siul, Tant Gari, Ujh, and Baira.

**Yamuna River:**

Yamuna is the largest tributary of the Ganga River. It originates from Yamunotri in Uttarkashi, Uttarakhand, and enters Himachal Pradesh at Khadar Majri in Sirmaur district. Tons, Giri, Bata, and Pabbar are the major tributaries of the Yamuna from Himachal Pradesh region. The total catchment area of Yamuna in Himachal Pradesh is 2320 sq. km. Drainage Map of HP are given below.

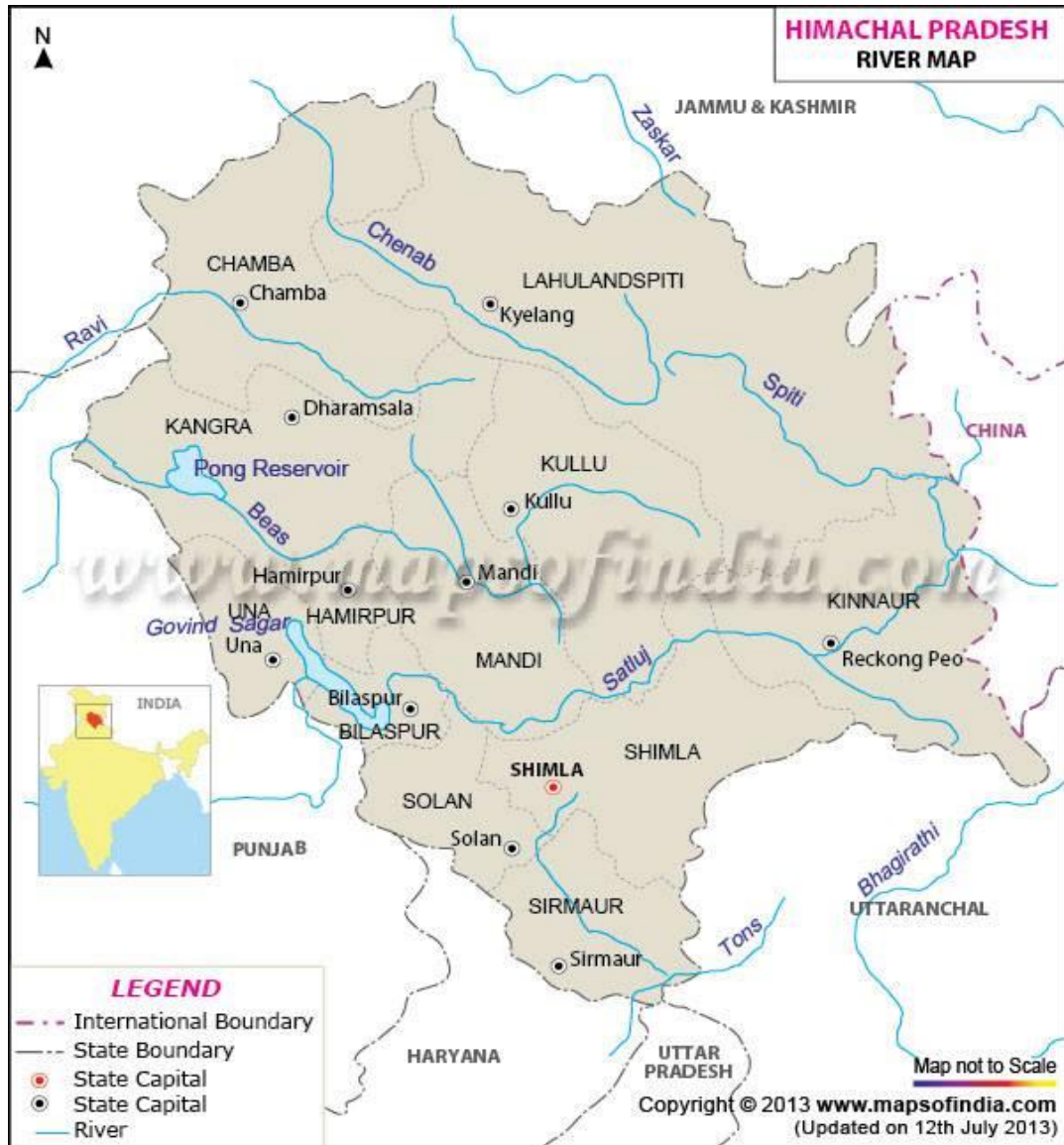


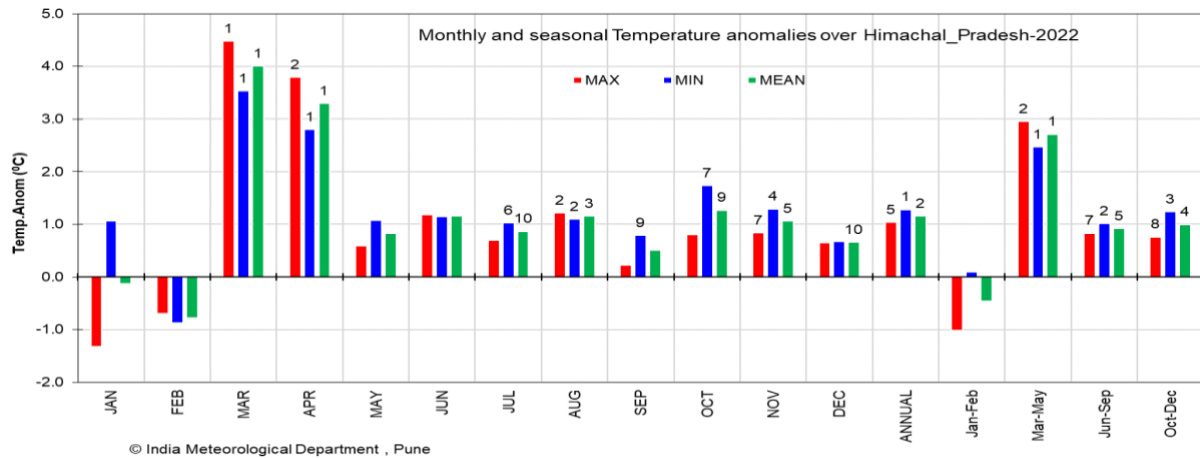
Figure 3: Drainage Map of Himachal Pradesh

Source: <https://indiariversblog.wordpress.com/2017/04/10/himachal-pradesh-rivers-profile/>

## 4.5 Climate and Meteorology

### Temperature

The monthly, seasonal, and annual maximum, minimum, and mean temperature anomalies averaged over the state of Himachal Pradesh for the year 2022 are given in **Figure 4**. The winter season (January-February) is relatively cooler, while the other seasons are warmer for the state. Particularly, the pre-monsoon season (March to May) was recorded as warm period over the year. The annual maximum temperature averaged over the state during the year 2022 was warmer than the average with an anomaly of 1.00°C (the 5th warmest since 1901), while the annual minimum temperature was warmer than the average by 1.30°C (the warmest since 1901). The mean temperature for the state was 1.20°C warmer than the average (the 2nd warmest year on record since 1901).

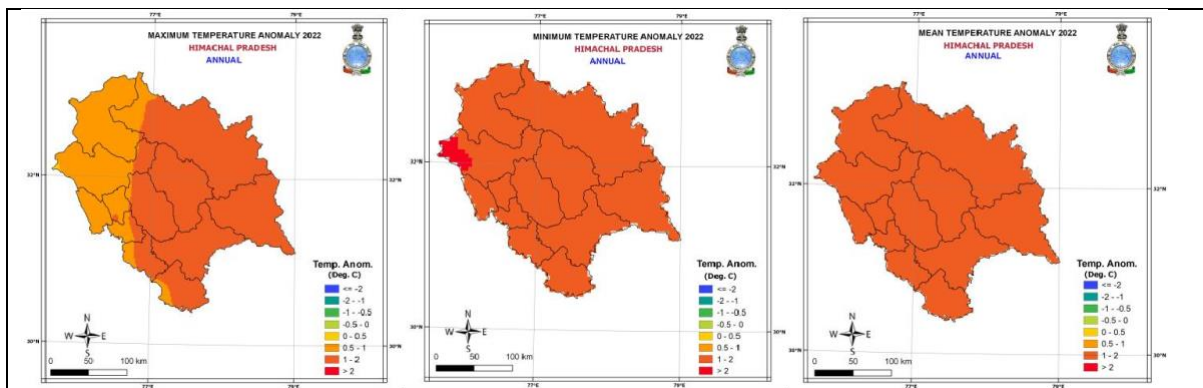


© India Meteorological Department, Pune  
**Figure 4: Monthly and Seasonal Maximum, Minimum and Mean Temperature anomalies averaged over Himachal Pradesh during 2022**

Source: Statement on Climate for the State Of Himachal Pradesh: 2022

Note: The anomalies were computed from the LPA base period of 1981-2010. The numbers above/below the bar indicate top 10 warmest/coolest ranking since 1901.

The spatial pattern of annual maximum, minimum, and mean temperature anomalies over Himachal Pradesh during 2022 is given in **Figure 5**. The temperature anomalies ranged between 1°C and 2°C over most parts of the state. However, the western districts of Himachal Pradesh were relatively less warm in terms of maximum temperature, with anomalies ranging from 0.5°C to 1°C.



**Figure 5: Spatial pattern of Annual Maximum, Minimum, and Mean Temperature anomalies over Himachal Pradesh during 2022**

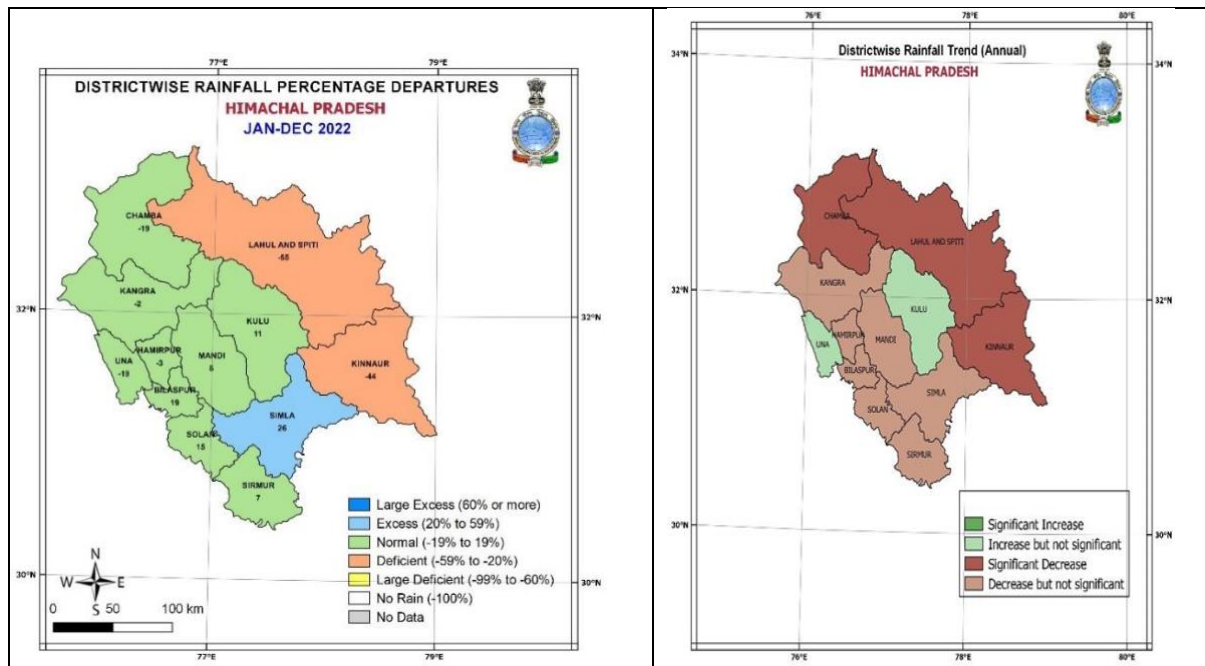
Source: Statement On Climate For The State Of Himachal Pradesh: 2022.

Note: The anomalies were computed from LPA for the base period of 1981-2010.

**Rainfall**

Based on the 1971-2020 climatology, Himachal Pradesh, as a whole, receives 15% of its annual rainfall during the winter season (Jan-Feb), 19.3% during the pre-monsoon season (Mar-May), 59.0% during the southwest monsoon season (Jun-Sept), and 6.7% during the post-monsoon season (Oct-Dec). Therefore, although the southwest monsoon season is the primary rainy season for the state, Himachal Pradesh also receives significant rainfall during the winter and pre-monsoon seasons. **Figure 6** illustrates the annual departure of rainfall across different districts of Himachal Pradesh during 2022.

The anomalies were computed based on the 50-year LPA for the period of 1971-2020. Out of the 12 districts in the state, one district (Shimla) received excess rainfall (20% to 59% of its LPA), nine received normal rainfall (-19% to +19% of its LPA), and two received deficient rainfall (-59% to -20% of its LPA).



**Figure 6: District-wise annual rainfall percentage and trend for HP (study period 1901-2022)**

Source: Statement on climate for the State of Himachal Pradesh: 2022

It can be observed that among all the districts of the state, Kullu and Una exhibit an increasing trend. However, the remaining districts show a decreasing trend, with Chamba, Lahaul and Spiti, and Kinnaur showing a significantly declining trend.

#### 4.6 Soil Type

The soil found in the state can be broadly classified into the following types:

**Alluvial Soil:** Alluvial soils are formed by the deposition of silt, clay, and sand carried by rivers and streams. They are usually found in the valleys and low-lying areas of Himachal Pradesh, particularly along riverbanks. Alluvial soils are generally fertile and suitable for agriculture.

**Mountain Soil:** Mountain soils are primarily found in the hilly and mountainous regions of Himachal Pradesh. They are typically shallow and stony, with a high percentage of gravel and rocks. Due to the steep slopes, erosion is a common phenomenon in these areas. Mountain soils are not highly fertile and often require terracing and other conservation measures for agricultural purposes.

**Brown Forest Soil:** Brown Forest soils, also known as podzolic soils, are found in the lower and middle regions of Himachal Pradesh. They are typically formed under forest cover and are characterized by a dark brown color. Brown forest soils are relatively fertile and have good water-retaining capacity.

**Red and Yellow Soil:** Red and yellow soils are found in the lower and middle regions of Himachal Pradesh, primarily in areas with moderate to high rainfall. These soils are formed due to weathering of rocks and have a reddish or yellowish color. They are generally well-drained but may require proper management for agriculture.

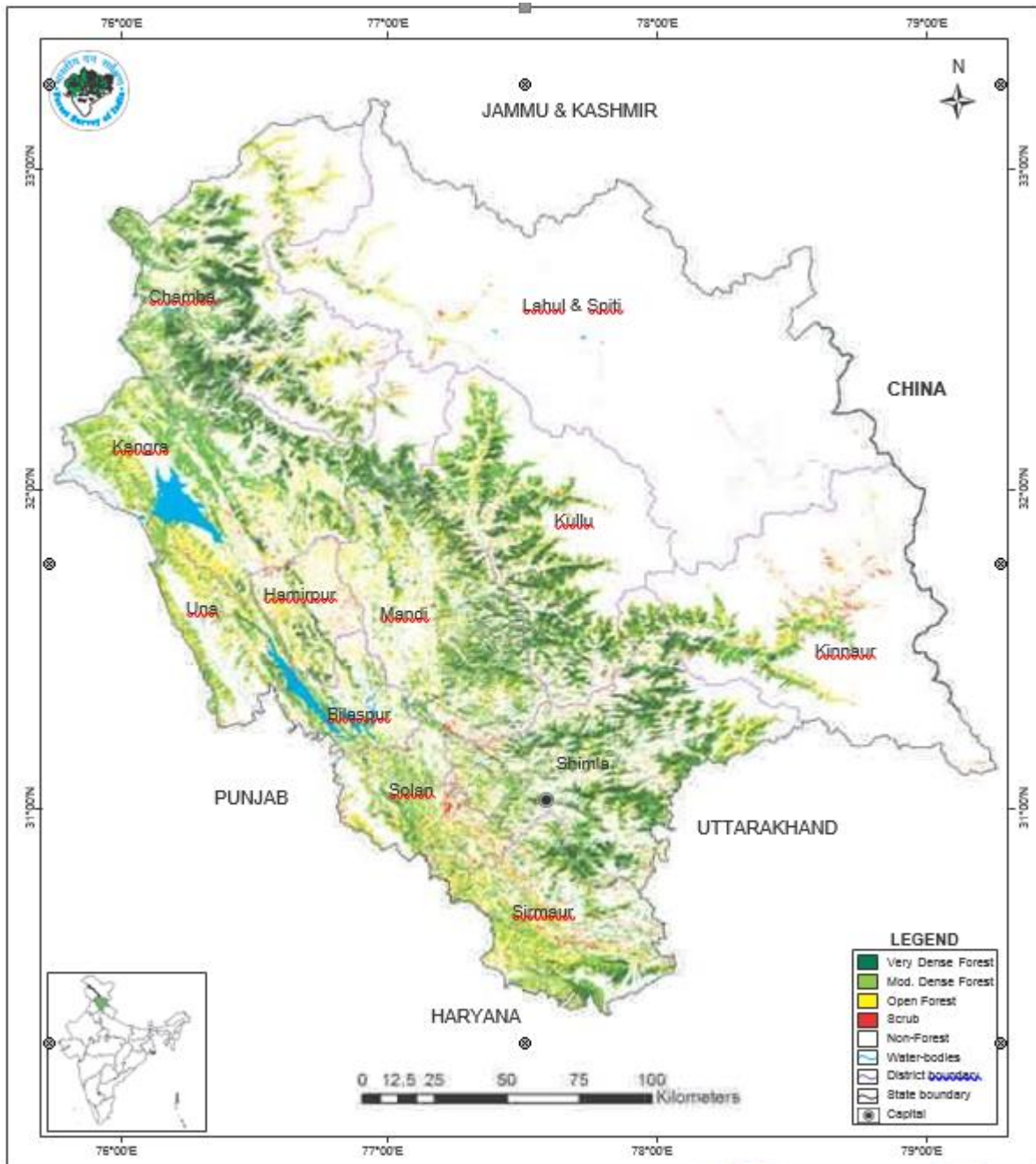
**Terrace Soil:** Terrace soils are formed on terraces that are constructed along the slopes of hills and mountains for cultivation purposes. These soils are a mixture of alluvial and mountain soils and varies in characteristics depending on the parent material and location.

**Peaty and Marshy Soil:** Peaty and marshy soils are found in the wetland areas of Himachal Pradesh, particularly in regions with high rainfall and waterlogging. These soils have a high organic content and are generally acidic. They are not suitable for most agricultural practices but may support certain wetland vegetation.

It's important to note that the distribution and characteristics of soil types can vary within different regions of Himachal Pradesh, depending on factors such as altitude, slope, climate, and parent material. Therefore, local variations and specific soil conditions may exist within each soil type mentioned above.

#### **4.7 Forest and Protected Areas**

Himachal Pradesh is situated in the Trans-Himalayan and Himalayan Biogeographic Zones. These zones comprise of three Biotic Provinces namely Trans Himalaya -Ladakh Mountains, Trans Himalaya -Tibet Plateau, North-West Himalaya and West Himalaya as per classification of biogeographic zones of India by Rodgers et al., (2000). Presence of the Shiwaliks, Western Himalayas and Trans-Himalayan region has blessed the State with diverse ecosystems that are an abode of a rich biodiversity. The recorded forest area of the state that are legally classified, spreads over an area of 37,948 sq.km accounting for 68.16 % of the total geographic area of the State (FSI Annual Report, 2021). According to classification of forests in India by Champion and Seth (1968), the forests of HP have been classified into eight forest types which are further categorized into 37 sub-types based on their floristic composition, phytogeographical position, altitudinal range and other factors of locality. Himalayan Moist Temperate Forest occupies the largest area among all the forest types. There are eight (8) locations under forest cover among 31 proposed helipad sites (Refer: Annexure 3).



**Figure 7: Forest cover map**

Source: India State of Forest Report-2019-Vol-II-Himachal-Pradesh

The natural ecosystems of the State play a crucial role in conservation biodiversity at genetic and species levels. Therefore, with a view to conserve the total range of wildlife available in the state, the Government of HP has declared several areas, covering all the agro-climatic zones in the state and having significant ecological, geomorphological and biodiversity value, as Conservation Reserves, Wildlife Sanctuaries and National Parks. At present, there are 5 National Parks, 26 Wildlife Sanctuaries and 3 Conservation Reserves. The details are given in **Table 9**.

**Table 9: Protected Forest Areas in HP**

S.No	Type of Forest	District	Area (Sq. Km.)
<b>National Parks</b>			
1	Great Himalayan National Park	Kullu	754.50
2	Pin Valley National Park	Lahaul and Spiti	675
3	Khirganga National Park	Kullu	710
4	Inderkilla National Park	Kullu	104
5	Simbalbara National Park	Sirmour	27.88
<b>Conservation Reserve</b>			
6	Shilli Conservation Reserve	Solan	1.49
7	Shri Naina Devi Conservation Reserve	Bilaspur	17.01
8	Darlaghat Conservation Reserve	Solan	0.67
<b>Wildlife Sanctuary</b>			
9	Bandli	Mandi	32.11
10	Chail	Solan	16
11	Chandra Tal	Lahaul & Spiti	38.56 + (11.53 for Consideration)
12	Churdhar	Sirmour	55.52
13	Daranghati I & II	Shimla	171.50
14	Dhauladhar	Kangra	982.86
15	Gangul-Siyabehi	Chamba	108.40
16	Kais	Kullu	12.61
17	Kalatop-Khajjjar	Chamba	17.17
18	Kanawar	Kullu	107.29
19	Khokhan	Kullu	14.94
20	Kibber	Lahaul & Spiti	2220.12
21	Kugti	Chamba	405.49
22	Lipa Asrang	Kinnaur	31
23	Majathal	Solan	30.86
24	Manali	Kullu	29
25	Nargu	Mandi	132.3731
26	Pong Dam Lake	Kangra	207.59
27	Rakchham-Chitkul	Kinnaur	304
28	Renuka ji	Sirmour	3.87
29	Rupi-Bhaba	Kinnaur	503
30	Sechu-Tuan Nalla	Chamba	390.29
31	Shikari Devi	Mandi	29.94
32	Shimla Water Catchment	Shimla	10
33	Talra	Shimla	46.48
34	Tundah	Chamba	64

#### 4.8 Flora and Fauna

The floral biodiversity in the state consists of about 3256 species of plants including Angiosperms, Gymnosperms and Pteridophytes. More than 503 species of lichens have been reported by various authors from Himachal Pradesh. Studies have identified about 643 medicinal plants from different parts of the State, most of which are globally rare, endangered or threatened to various degrees while about 17 species of medicinal plants are endemic to the Indian Himalayan Region. The State is also blessed with exemplary diversity of orchids with a report of about 84 species and 1 variety belonging to 44 genera. About 65 species of orchids are terrestrial, 13 species are epiphytic and 7 species are myco-heterotrophic in habit. **There are 21 species of plants that have been included in various threat categories of IUCN Red List from Himachal Pradesh. Cedrus deodara (deodar) has been declared as the State Tree of Himachal Pradesh while Rhododendron campanulatum (pink rhododendron) is the State Flower.**

The faunal diversity of the state is glorified by the presence of about 8342 species of animals belonging to 4013 genera and 720 families as documented by Zoological Survey of India. About 77 species of mammals, 447 species of birds and 4362 species of insects have been reported from the State. There are about 884 species of vertebrates, 7341 species of invertebrates and 117 species of protozoa. The faunal diversity of the State represents about 8 per cent of India's overall faunal wealth. Unique fauna like the snow leopard, Himalayan blue sheep, ibex, serow, western tragopan, musk deer and Himalayan brown bear can be seen in the high mountains of Himachal Pradesh while fauna like barking deer, common leopard, sambar deer and yellow throated marten can be seen in the middle and lower hills and plains. The elusive snow leopard has been declared as the State animal while the brilliantly coloured Western Tragopan enjoys the status of being State bird of Himachal Pradesh. The Great Himalayan National Park has been recognized as a World Heritage Site by the UNESCO keeping in view its unmatched ecological and cultural significance. Eight species of fauna of Himachal have been enlisted in the IUCN Red List.

#### 4.9 Natural Disaster

The state is prone to various hazards, both natural and man-made. The main hazards consist of earthquakes, landslides, flash floods, snowstorms, avalanches, droughts, dam failures, domestic and wild fires, road, rail, air accidents, stampedes, boat capsizing, biological, industrial, and hazardous chemicals, among others. However, the hazard that poses the biggest threat to the state is the earthquake hazard. According to recorded history, the state has experienced more than 80 earthquakes with a magnitude of 4 and above on the Richter Scale. As per the BIS seismic zoning map, five districts of the state, namely Chamba (53.2%), Hamirpur (90.9%), Kangra (98.6%), Kullu (53.1%), and Mandi (97.4%), have 53% to 98.6% of their area exposed to the severest design intensity of MSK IX or higher, while the remaining area of these districts is exposed to the next severe intensity, VIII. Two districts, Bilaspur (25.3%) and Una (37.0%), also have a substantial area in MSK IX and the rest in MSK VIII. The remaining districts are also exposed to intensity VIII. In **Figure 8** project locations are shown on the seismic hazard map of the state. Based on this figure, it may be inferred that majority of the Projects are located in Seismic Zone 5.

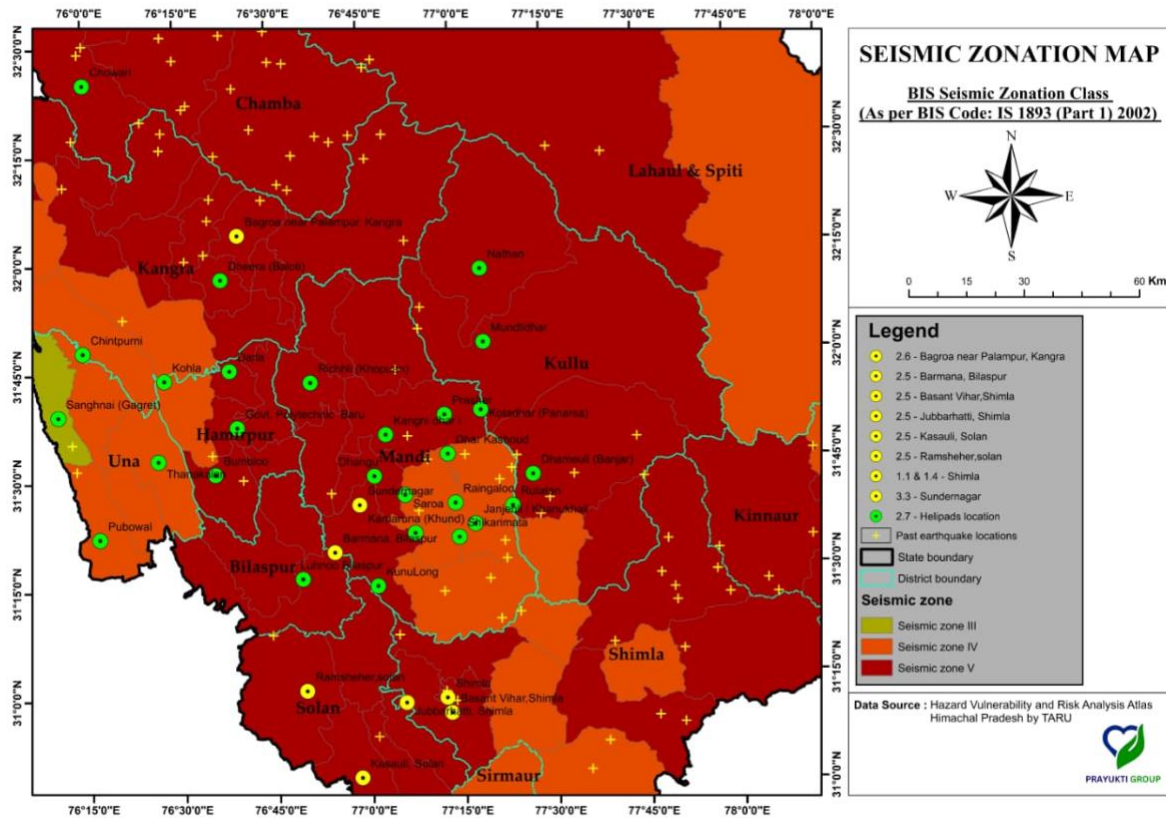


Figure 8: Earthquake Hazard Map of Himachal Pradesh

### Landslide hazard

The hills and mountains of Himachal Pradesh are prone to landslides during monsoons and high-intensity earthquakes. The vulnerability of the geologically young and unstable steep slopes in various Himalayan ranges has been increasing at a rapid rate in recent decades due to inappropriate human activities such as deforestation, road cutting, terracing, and changes in agricultural practices requiring more intense watering, among others. The proposed location of the project sites is shown in the landslide hazard map of the state (**Figure 9**). According to preliminary location information, most of these projects are away from past landslide zones.

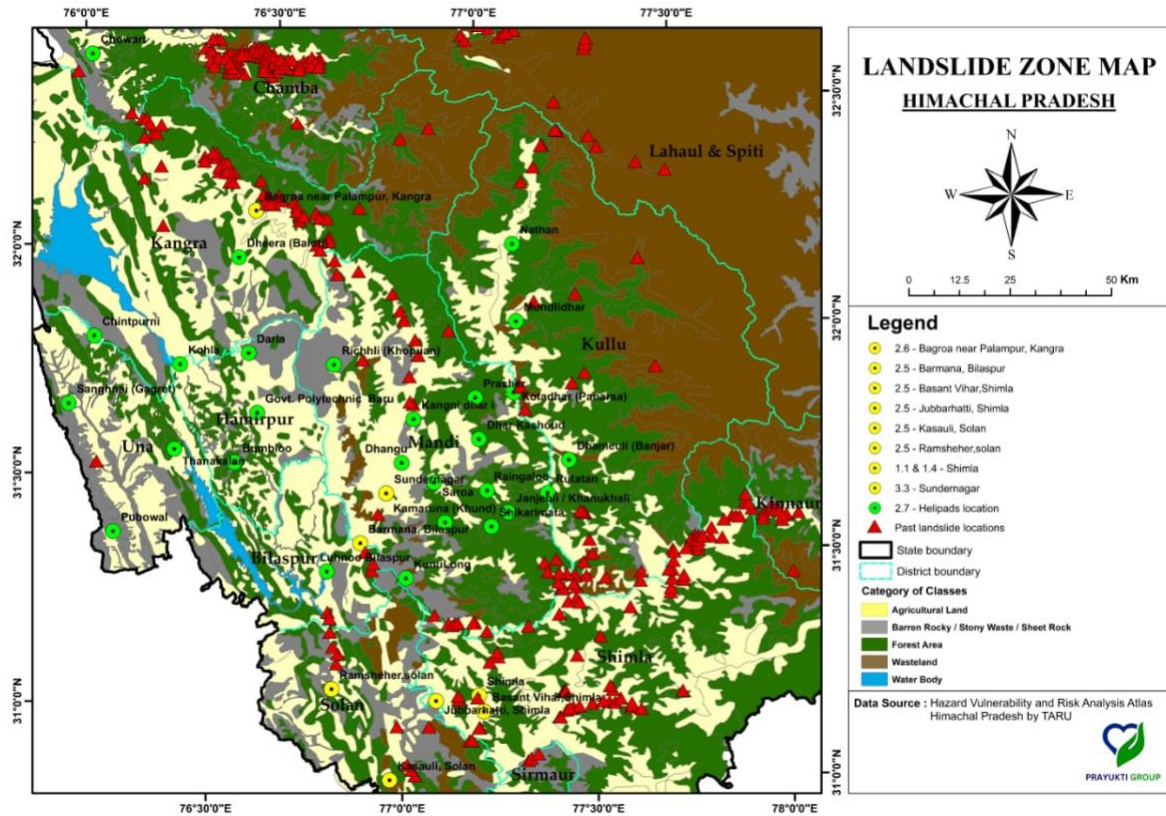


Figure 9: Landslide Hazard Map of Himachal Pradesh

**Avalanches hazard**

The destruction caused as a result of avalanches is not widespread in the state. The higher hills comprising the districts of Kinnaur, Lahaul & Spiti, Chamba, and Kullu are particularly vulnerable to this hazard. The avalanche hazard map of the state with respect to project locations is given in **Figure 10** and it may be inferred that a number of helipads have been proposed near avalanche prone settlements as well as in the remote zones.

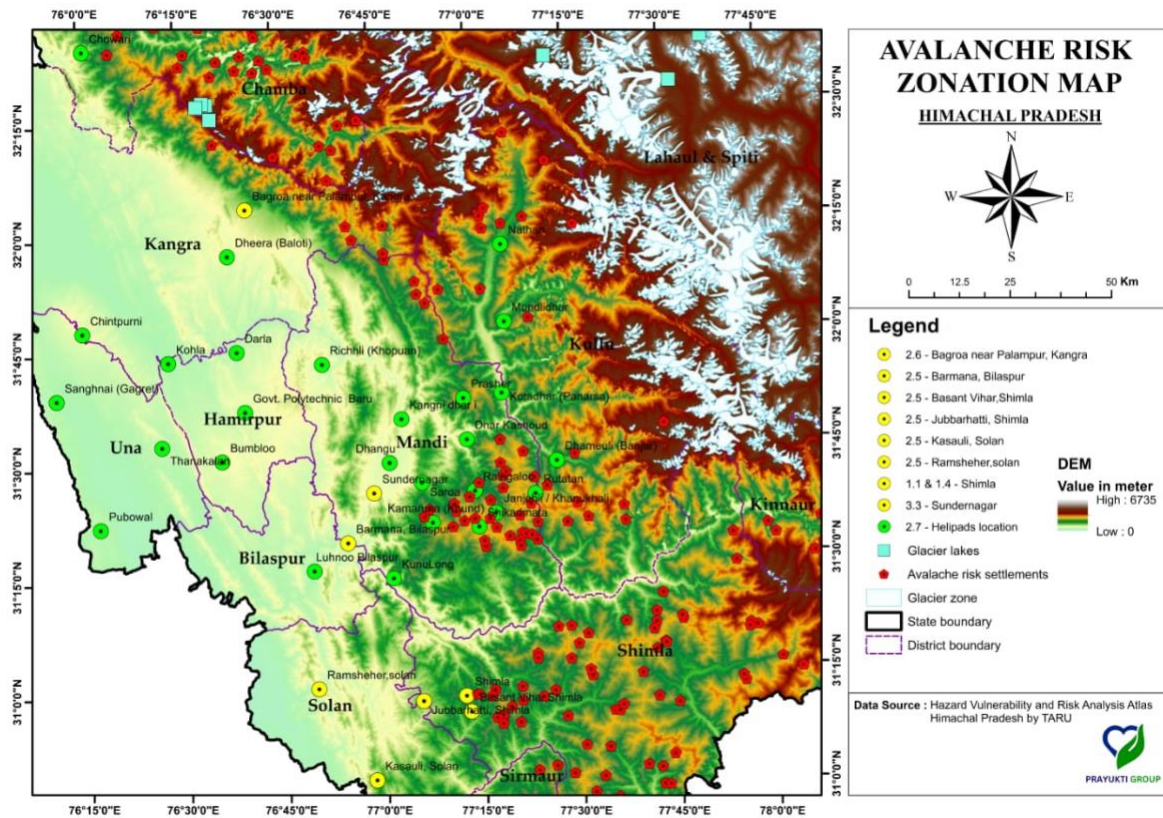


Figure 10: Avalanche Hazard Map of Himachal Pradesh

**Flood Hazard**

Floods are another form of natural disaster that the state experiences every year. Due to the diverse topography of the area, the flood problem in the state is largely isolated in nature. High monsoon rains in the areas of the Shiwalik, lower, and mid Himalayan ranges cause extensive floods during the rainy seasons. In the upper reaches of the Beas and Satluj valleys, the main problems are flash floods and bank erosion due to the steep slopes of rivers and high river flows resulting from heavy rains. Flash floods caused by cloudbursts, glacial lake outbursts, and temporary blockage of river channels have also been observed. Breaches in embankments and damage to various utilities such as irrigation/flood control schemes and houses are also common.

Heavy (64.5-115.5mm), Very heavy (115.6-204.4 mm) and extremely heavy (more than 204.4 mm) rainfall events were recorded over some stations of Himachal Pradesh. **Figure 11** shows the flood risk map of the state with respect to proposed project. According to this figure, none of the projects have been proposed near flood prone areas.

**Table 10** list out major extreme weather even in 2022 that caused loss of human life in HP.

CIN 1149: Himachal Pradesh Disaster Risk Reduction and Preparedness Program  
Environment and Social Management Framework

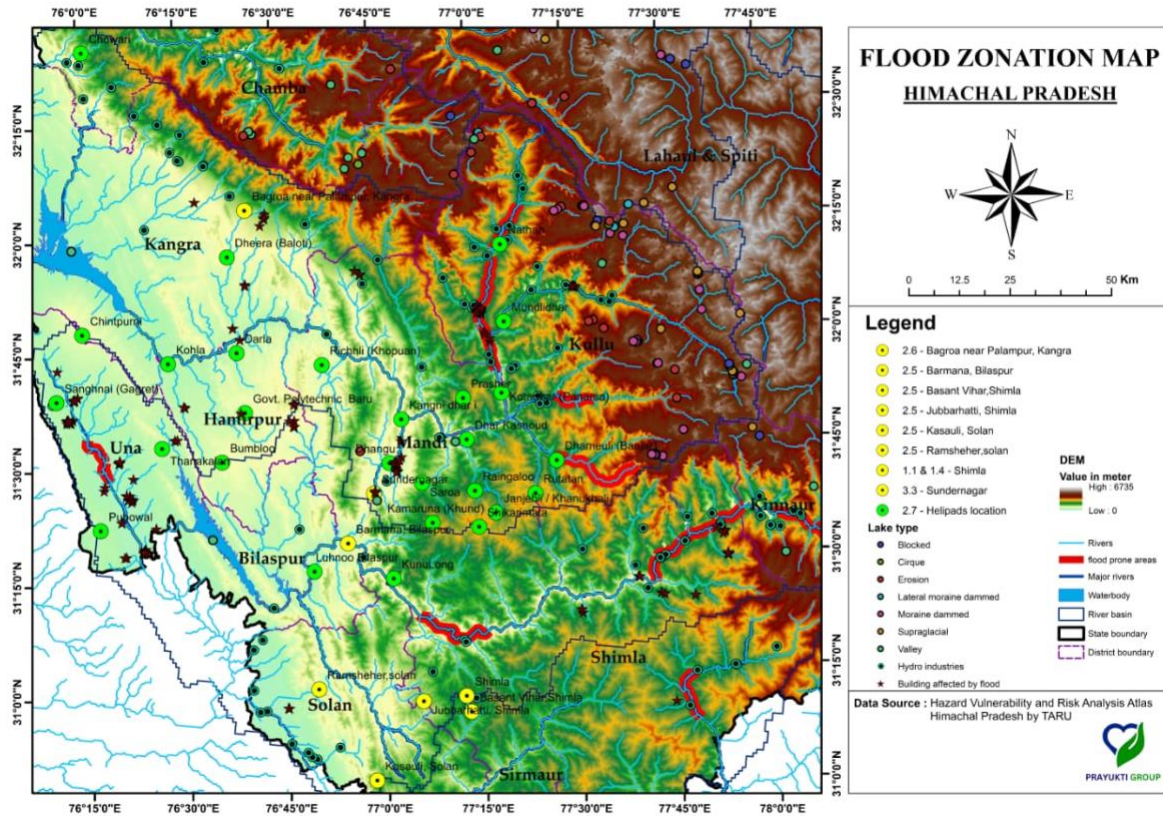


Figure 11: Flood Risk Hazard Map of Himachal Pradesh

Table 10: Major natural hazard events in 2022 in Himachal Pradesh

Event	Number of casualties and Date	Season	Affected districts
Lightning and Thunderstorm	3 (22, 29 May; 10, 11 Sep.)	Pre-Monsoon (March to May), Monsoon (June to September)	Kangra, Sirmaur, Una
Floods and Heavy Rain	75 (17 Jan.; 22, 29 May; 29 and 30 Jun.; 6, 14 Jul.; 8, 11, 15, 19, 20 Aug.; 25 Sep.)	Winter (January and February),  Pre-Monsoon (March to May),  Monsoon (June to September)	Chamba, Hamirpur, Kangra, Kinnaur, Kullu, Lahaul and Spiti, Mandi, Shimla, Sirmaur, Solan, Una
Snowfall	10 (10 Jan.; 12 Feb.; 17 Apr.)	Winter (January and February), Pre-Monsoon (March to May)	Lahaul and Spiti, Shimla

Source: Statement on climate for the state of Himachal Pradesh: 2022, HPSDMA

### Forest Fire Hazard

Himachal Pradesh frequently witnesses forest fires during dry weather conditions. Except for periods of precipitation in monsoon and winter; the forests remain vulnerable to wildfires. During the post-monsoon season and in winters, forest fires are also reported in higher areas,

including parts of Shimla, Kullu, Chamba, Kangra and Mandi districts, where they usually occur in grasslands. Natural causes such as lightning or rubbing of dry bamboos with each other can sometimes result in fires. Human induced damage occur as local People often ignite fire in forests to have flush of green grass for their cattle. Development and commercial activities accelerated the exploitation process of forest resources and produced heaps of waste material. It is collected and often dumped near forest areas and burnt to ashes. Uncontrolled fire spreads in nearby forests. The vulnerable forest fire regions are shown in **Figure 12** with respect to proposed Project sites. It is worth noting here that while a number of helipads have been located in the vicinity of forest fire prone areas but none of the infrastructure projects have been sited near these areas.

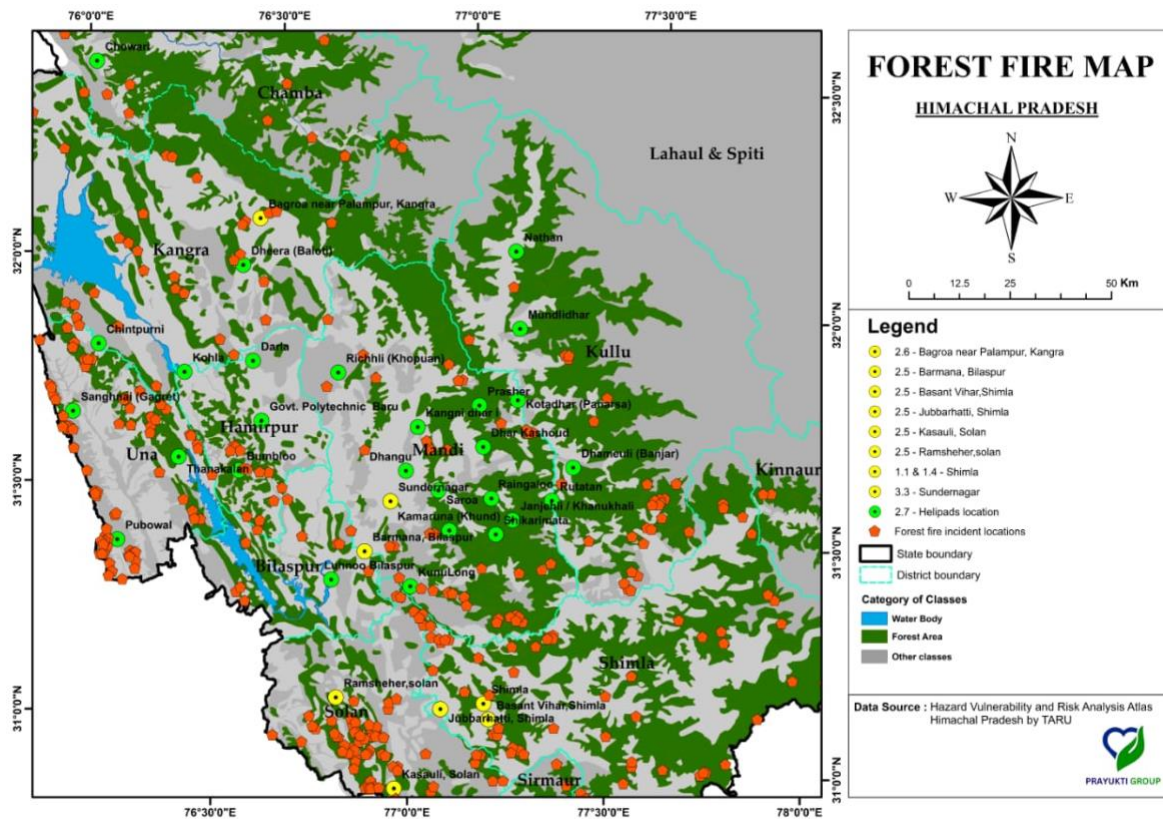


Figure 12: Forest Fire Hazard Map of Himachal Pradesh

#### 4.10 Socio- Economic and Demographic Profile

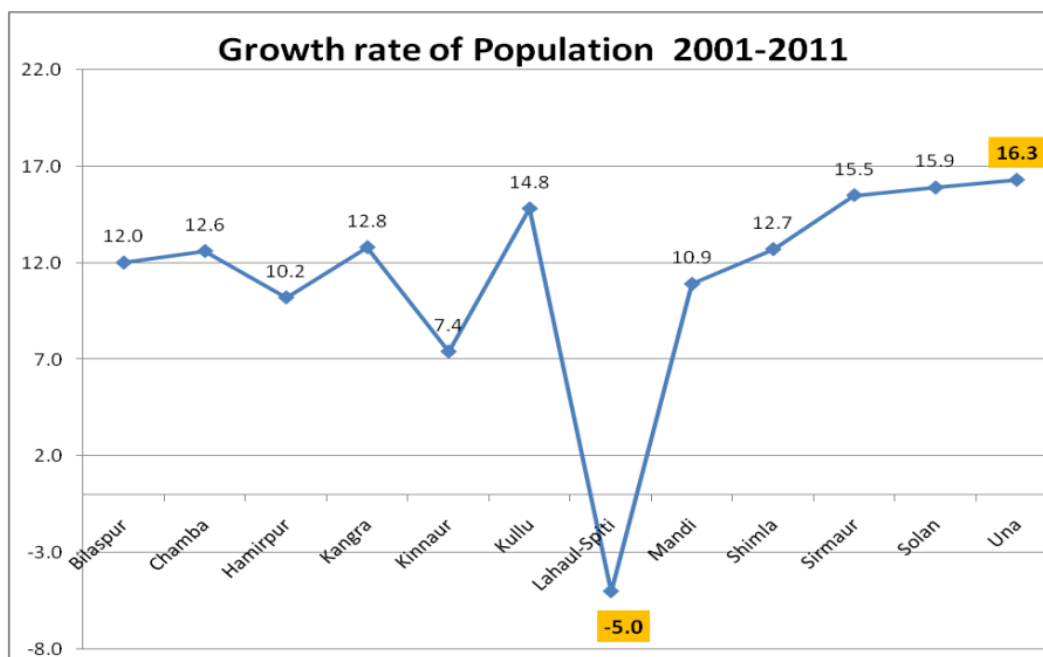
According to 2011 census, the total population of Himachal Pradesh was 6,864,602; thus, it forms about 0.57 percent of total population of India (2011). The ratio of female population was 972 in per 1000 male in 2011 which was far better than the national average (940) but the child sex ratio of 909 remained as a matter of concern. The literacy rate of the state was 82.8%, greater than the national average (72.98%). Further, the male literacy rate was 89.53% and the female literacy rate was 75.93% in Himachal Pradesh.

**Table 11: Population of Himachal Pradesh by Districts**

District	Sub-districts	Population	Literacy	Sex Ratio
Kangra	Tehsils	1,510,075	85.67%	1,012
Mandi	Tehsils	999,777	81.53%	1,007
Shimla	Tehsils	814,010	83.64%	915
Solan	Tehsils	580,320	83.68%	880
Sirmaur	Tehsils	529,855	78.8%	918
Una	Tehsils	521,173	86.53%	976
Chamba	Tehsils	519,080	72.17%	986
Hamirpur	Tehsils	454,768	88.15%	1,095
Kullu	Tehsils	437,903	79.4%	942
Bilaspur	Tehsils	381,956	84.59%	981
Kinnaur	Tehsils	84,121	80%	819
Lahaul & Spiti	Tehsils	31,564	76.81%	903

Source: <https://www.censusindia.co.in/states/himachal-pradesh>

The decadal growth rate of population is presented below. It is evident that the population has significantly decreased in locations like Lahaul Spiti whereas increased in districts like Solan, Una, etc.



**Figure 13: Decadal Growth Rate of Population in Himachal Pradesh**

The demographic characteristics of the state is given below.

**Table 12: Demographic Indicators**

Sl. No.	Characteristics	Number/ Percentage
1	Geographic Area (in Sq. kms)	55,673 sq. Km2
2	Number of blocks	78
3	Number of villages	20690
4	Number of towns and cities	59
5	Total Population (2011)	68.6 Lacs
	Male	3,481,873
	Female	3,382,729
6	Population Sex Ratio	972
7	Child Sex Ratio	909
8	Decadal growth rate	12.94%
9	Density- per sq. km.	123
10	Literacy Rate	82.80 %
	Male	89.53 %
	Female	75.93 %
11	% SC/ST population	30.9 %
	SC	5.71%
	ST	25.19%

Source: <https://www.censusindia.co.in/states/himachal-pradesh>

Himachal is a predominantly rural state with 89.97 percent of the total population living in villages. Agriculture is the main source of its economy. Out of total population of the state, 3,559,422 were engaged in different work activities. According to Census 2011, 57.9% of workers described as Main Workers (Employment or earning more than 6 Months) while 42.1% were involved in Marginal activity providing livelihood for less than 6 months. Out of total number of Main Workers, 919,786 were involved in cultivation (owner or co-owner) while 68,668 were Agricultural laborers. The details of workers are depicted below.

**Table 13: Details of Main and Marginal Workers**

Category	Total	Male	Female
Main Workers	2,062,501	1,438,989	623,512
Cultivators	919,786	514,927	404,859
Agriculture Laborer	68,668	46,235	22,433
Household Industries	32,691	24,576	8,115
Other Workers	1,041,356	853,251	188,105
Marginal Workers	1,496,921	604,384	892,537
Non-Working	3,305,180	1,438,500	1,866,680

Source: <https://www.censusindia.co.in/states/himachal-pradesh>

Population map of HP is shown in **Figure 14** with respect to project location. The proposed projects are spread across the state and catering to diverse population centers.

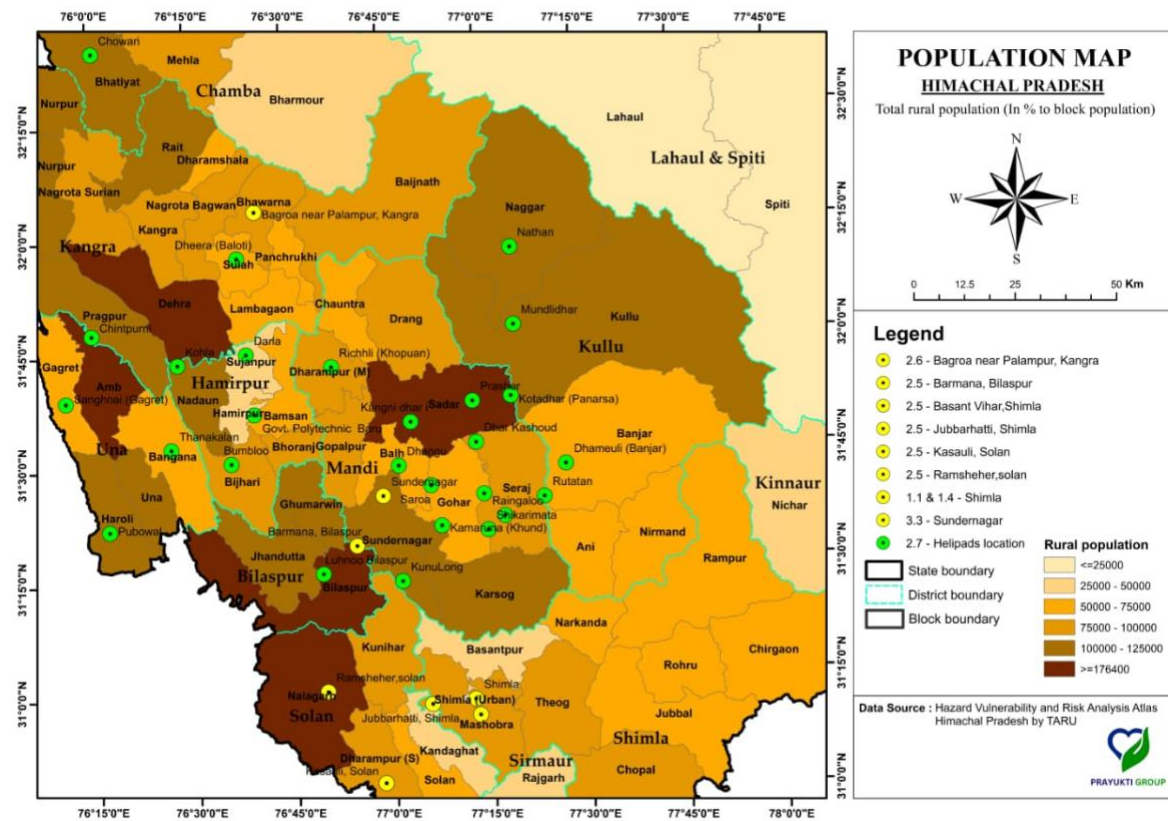


Figure 14: Population Map of HP

#### 4.10.1 Agriculture and Horticulture

Agriculture is the main occupation of the people of Himachal Pradesh; it provides direct employment to people and the workers of the state. Cash crops are specifically grown for the purpose of selling rather than using or consuming it personally. Cash crops play a vital role in the economy of Himachal Pradesh by improving the income of the rural households. Cultivation of cash crops is labor intensive. Hence, it generates a lot of employment opportunities for the rural population. Consequently, it will make significant impact on the state economy in the years to come. The economy of Himachal Pradesh largely depends on agriculture which still occupies a significant place in the state economy as 21.70 per cent of total state domestic product in 2013-14 was generated by agriculture and allied sectors and any fluctuations in the production of food grains affected the economy significantly. During the twelfth five-year plan, 2012-17, emphasis has laid on production of off-season vegetables, potato, pulses and oilseeds besides cereal crops through timely and adequate supply of inputs bringing more area under irrigation, approach of watershed development, demonstration and effective dissemination of improved farm technology. The agriculture sector of Himachal Pradesh contributes over 45.00 per cent to the state's domestic product and nearly the entire population of the state depends directly on agriculture.

**Table 14: Major crops of districts of Himachal Pradesh**

District	Major crop
Shimla	Apples, Potatoes, Peas, tomatoes, Cabbage, Cauliflower, Beans
Kullu	Apples, Pears, Plums, Apricots, Potatoes, Vegetables (cabbage, peas, beans)
Kangra	Tea, Rice, Maize, Wheat, Barley, Potatoes, Ginger, Vegetables (tomatoes, peas, beans)
Mandi	Rice, Maize, Wheat, Barley, Peas, Potatoes, Ginger, Garlic, Vegetables (cabbage, cauliflower, beans)
Solan	Tomatoes, Mushrooms, Peaches, Plums, Strawberries, Cabbage, Cauliflower, Peas, Potatoes
Sirmaur	Wheat, Maize, Barley, Rice, Potatoes, Ginger, Garlic, Vegetables (cabbage, cauliflower, peas)
Una	Rice, Maize, Wheat, Barley, Potatoes, Vegetables (cabbage, cauliflower, peas, tomatoes)
Chamba	Rice, Wheat, Barley, Maize, Potatoes, Vegetables (cabbage, cauliflower)
Hamirpur	Wheat, Rice, Barley, Maize, Potatoes, Vegetables (cabbage, cauliflower, peas)
Bilaspur	Rice, Wheat, Barley, Maize, Vegetables (cabbage, cauliflower)
Kinnaur	Apples, Apricots, Peas, Potatoes, Vegetables (cabbage, cauliflower)
Lahaul & Spiti	Potatoes, Barley, Peas, Spinach, Beans, Buckwheat

Source: State Statistical Abstract, 2021-2022

#### 4.10.2 Livestock

According to the 2011 livestock census data for Himachal Pradesh, the livestock population in the state was as follows:

**Table 15: Livestock Population in HP (according to Census 2011)**

Type of Animal	Approx. No. in million
Cattle	3.72
Buffaloes	1.197
Sheep	2.158
Goat	4.556
Horse and Ponies	32000
Pigs	0.13
Poultry	9.464

#### 4.10.3 Industry

Himachal Pradesh has formulated various industrial policies to attract investments and promote sustainable industrial development. The GoHP has established SEZs to provide a conducive environment for industries. Some of the prominent SEZs in the state are the Baddi-Barotiwala-Nalagarh (BBN) SEZ and the Una-Parwanoo SEZ. These SEZs offer benefits such as tax incentives, infrastructure support, and streamlined procedures.

**Pharma and Biotechnology:** HP is a major hub for the pharmaceutical and biotechnology industries. The state is home to several pharmaceutical companies, with a strong presence in areas such as Baddi,

Nalagarh, and Paonta Sahib. The government provides support through incentives, infrastructure development, and skill enhancement programs.

**Food Processing:** The state has a robust food processing industry, leveraging its rich agricultural resources. The state is renowned for fruit processing, especially apple-based products. Various other food products such as jams, jellies, juices, pickles, and dairy products are processed and manufactured.

**Renewable Energy:** Himachal Pradesh has immense potential for renewable energy, especially hydropower, solar power, and wind power. The state has harnessed its hydropower potential and has been promoting the development of solar and wind power projects. It offers incentives and a supportive policy framework for renewable energy projects.

**Tourism:** Himachal Pradesh is a popular tourist destination and has a well-developed tourism industry. The state government focuses on promoting sustainable and responsible tourism, adventure tourism, ecotourism, and cultural tourism. It provides support for infrastructure development, capacity building, and promotion of tourism-related activities.

**Textiles and Handicrafts:** The textile industry, particularly woolen textiles, is a significant sector in Himachal Pradesh. The state has several textile mills, weaving units, and garment manufacturing facilities. Additionally, Himachal Pradesh has a rich tradition of handicrafts, including shawls, carpets, metalwork, pottery, and wooden crafts.

**Information Technology (IT) and IT-enabled Services (ITES):** Himachal Pradesh has been developing its IT and ITES sector. It has established IT parks and provides infrastructure support, incentives, and skill development initiatives to attract IT and ITES companies to the state.

**Small Scale and Cottage Industries:** Himachal Pradesh has a significant presence of small scale and cottage industries. These include handloom weaving, traditional crafts, agro-based industries, and local products. The state government provides support through training programs, financial assistance, and market linkages for these industries.

The industrial hazard map of HP is shown in **Figure 15** with respect to project location. As may be seen that a significant population is exposed to industrial hazards in Solan district. Accordingly, the response capabilities are planned to be augmented through this Program in this district.

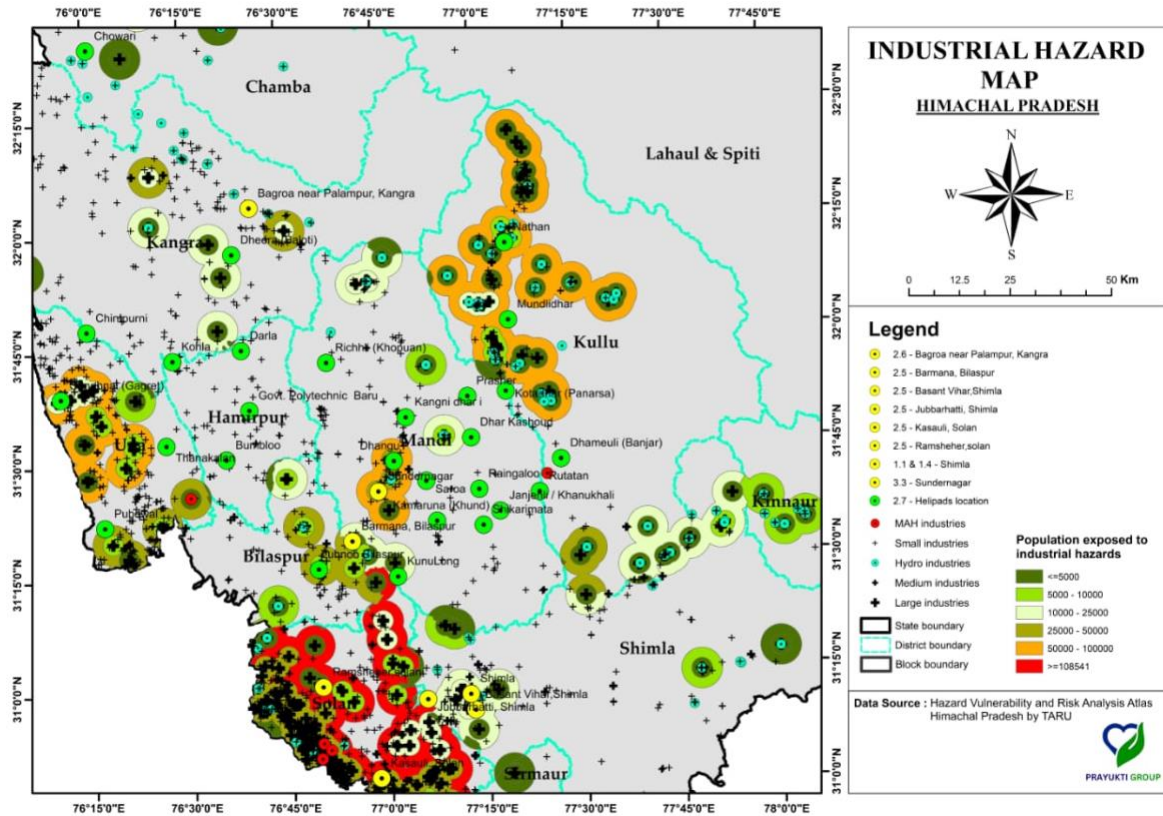


Figure 15: Industrial Hazard Map of HP

#### 4.11 Ethnic Groups/ Tribes

Himachal Pradesh has only ~6% tribal population. However, districts like Kinnaur and - Spiti has sizeable tribal population (> 50%). In Kinnaur, there are two major communities - Kashia and Beru, locally called Chamang and Damang. Both these communities belong to scheduled castes. Beru is considered inferior to the Kashia or Khosla or Khash. The Khosla or the Rajput on their part are divided into three Khelsor status groups, that is, Orang, Morang, and the Waza. After independence, the hold of caste rigidity and consequent restrictions on marriage alliances and eating, is on wane though not completely extinct as yet. Despite legislation preventing untouchability, the social customs have retained some of it. The large-scale infrastructure projects in these districts are likely to involve tribal populations. However, going by present state of affairs on ground, social conflict during project implementation phase is not envisaged.

**Table 16: District-wise Scheduled Tribe Population**

District	Rural			Urban			Total			Scheduled Tribes as percentage to total population
	Male	Female	Total	Male	Female	Total	Male	Female	Total	
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. Bilaspur	5290	5044	10334	195	164	359	5485	5208	10693	2.80
2. Chamba	66589	66318	132907	1311	1282	2593	67900	67600	135500	26.10
3. Hamirpur	1396	1405	2801	135	108	243	1531	1513	3044	0.67
4. Kangra	39498	40736	80234	2247	2083	4330	41745	42819	84564	5.60
5. Kinnaur	23609	25137	48746	-	-	-	23609	25137	48746	57.95
6. Kullu	6320	6143	12463	2173	2186	4359	8493	8329	16822	3.84
7. L&-S	12748	12959	25707	-	-	-	12748	12959	25707	81.44
8. Mandi	6114	6245	12359	231	197	428	6345	6442	12787	1.28
9. Shimla	2795	2604	5399	1759	1597	3356	4554	4201	8755	1.08
10. Sirmaur	5702	5213	10915	210	137	347	5912	5350	11262	2.13
11. Solan	12469	11606	24075	882	688	1570	13351	12294	25645	4.42
12. Una	4366	4086	8452	79	70	149	4445	4156	8601	1.65
<b>H.P.</b>	<b>186896</b>	<b>187496</b>	<b>374392</b>	<b>9222</b>	<b>8512</b>	<b>17734</b>	<b>196118</b>	<b>196008</b>	<b>392126</b>	<b>5.71</b>

## 4.12 Land Tenure

By enacting the tenancy and Land Reforms Act, 1972 a new era marking abolition of intermediaries on land had ushered in the State. According to section 3 of the Act, tenants have the right of occupancy in the land. Section 9(2) states that a tenant shall be entitled to tend, cut and harvest the produce of his tenancy in due course of husbandry without any interference on the part of his landowner. According to section 118 of the Act, no transfer of land (including sales in execution of a decree of a civil court or for recovery of arrears of land revenue) by way of sale, gift, will, exchange, lease, mortgage with possession, creation of a tenancy or in any other manner shall be valid in favour of a person who is not an agriculturist or non-Himachali.

However, Section 118 does not prohibit but regulates the sale of agricultural land. A non-agriculturalist needs to apply, state the purpose for which he wants to buy the land, and the government takes a decision on his request within a set time-frame. The permission is granted only if the government is satisfied with the stated purpose behind buying the land and the individual's ability and background to carry out the project<sup>9</sup>.

Out of the total geographical area of 55.673 lakh hectares, the farming community of the state holds an area of 9.99 lakh hectares, which is run by 8.63 lakh farmers. Around 84.5 per cent of the total land held by the farming community of Himachal Pradesh are owned by the marginal and small farmers<sup>10</sup>. Since the Program does not envisage large scale acquisition of privately owned land, no major challenges are anticipated.

<sup>9</sup> Source: <https://www.tribuneindia.com/news/archive/features/who-can-cannot-buy-land-in-himachal-819058>

<sup>10</sup> Source: Kaushik, K. K. (1993). *Inequality in the distribution of land holdings in Himachal Pradesh*. *Agricultural Economics Research Review*, 6(347-2017-3114), 110-119.

### 4.13 International Borders

The state of Himachal Pradesh shares international border with China only in the East. The Kaurik region of Lahaul & Spiti districts and the Tashigang-Shipki La region of Kinnaur district is claimed by China as part of its Tibet Autonomous Region. These disputed areas are shown in **Figure 16**<sup>11</sup>. In accordance with exclusion criteria established for this Program, no project will be selected in these areas.

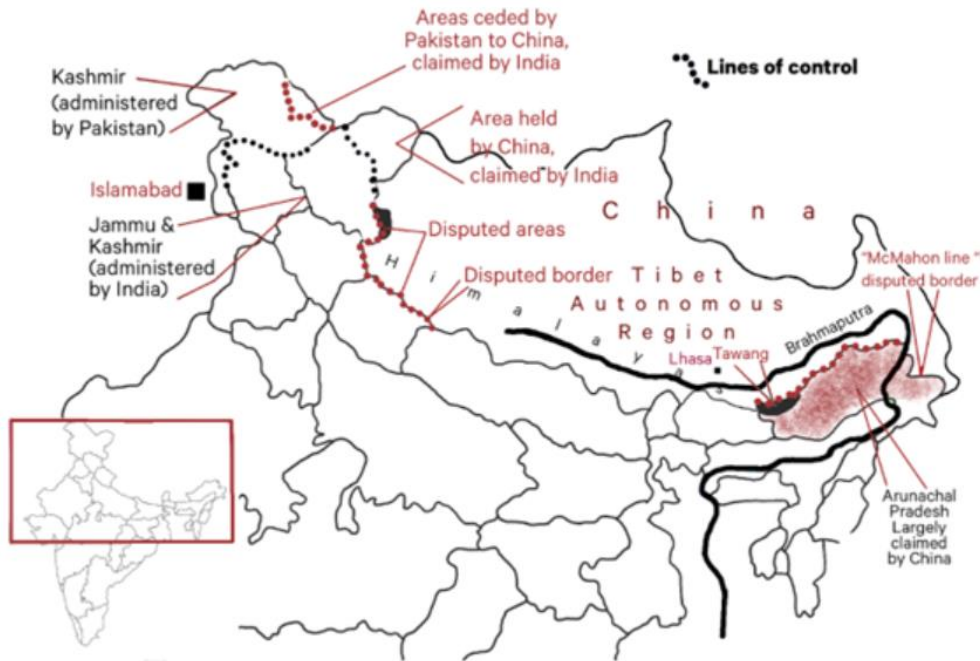


Figure 16: Areas of Dispute along India-China Border

### 4.14 Social Institutions

There are a number of social institutions for women and child welfare in the state. However, ironically the number of such institutions has remained constant since 2017.

<sup>11</sup> Source: <https://www.studyiq.com/articles/india-china-border-dispute>

**Table 17: Number of Institutions for Child and Women Welfare in Himachal Pradesh**

(As on 31<sup>st</sup> march)

<b>Institutions</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>
1	2.	3.	4.	5.	6.	7.
(i)Bal/Balika Ashrams –cum- children Home run by the voluntary Organizations	27	29	29	29	29	28
(ii) Bal/Balika Ashrams –cum- children Home run by the social justice & empowerment Department	09	09	09	09	09	09
(iii) Observation home –cum- Special home come- place of safety run by(SJ&E) Department	02	02	02	02	2	2
(iv) NGOs run Open Shelter	03	04	04	03	4	4

#### 4.15 Social Vulnerability

Every community must prepare for and respond to hazardous events, whether a natural disaster like a flood or disease outbreak, or a human-made event such as a harmful chemical spill. A number of factors, including poverty, lack of access to transportation, and crowded housing may weaken a community's ability to prevent human suffering and financial loss in a disaster. These factors are known as social vulnerability.

Despite constraints such as its hilly terrain, poor connectivity, and predominantly rural population (90%), the state's economic, poverty, education, and health indicators have improved significantly since 2000 owing to the efforts of the Government of Himachal Pradesh (GOHP) to improve infrastructure and delivery of basic public services. One of the main achievements of Himachal Pradesh was its success in raising people out of poverty. Between 1993–94 and 2011, there was a fourfold drop in poverty in the state. Rural poverty, where 90 percent of its population lives, declined from 36.8 percent to 8.5 percent. The overall poverty decline benefitted all social groups across rural and urban areas (World Bank, 2015). Over the last 10 years, the number of job seekers has remained almost constant with marginal increase during last year.

**Table 18: Job Seekers According to Qualifications on live registers of employment Exchanges in Himachal Pradesh**

<b>Period</b>	<b>Post graduates</b>	<b>Graduates</b>	<b>Matriculates and above</b>	<b>Other literates</b>	<b>Illiterate</b>	<b>Total Job seekers</b>
1.	2.	3.	4.	5.	6.	7.
2010-11	59130	116493	556872	90434	2835	825764
2011-12	63240	123876	564996	84222	2673	839007
2012-13	67484	130485	583232	78342	1771	861314
2013-14	74178	144050	707716	85056	1602	1012602
2014-15	67816	117795	644407	61871	1099	892988
2015-16	69355	116233	591197	50492	771	828048
2016-17	69714	122098	570803	48035	656	811306
2017-18	73077	132186	586453	40819	1549	834084
2018-19	75046	135069	615309	40119	549	866092
2019-20	76241	136457	600454	30319	6230	849701
2020-21	75685	135841	604654	29642	483	846305
<b>2021-22</b>	<b>76338</b>	<b>141479</b>	<b>628931</b>	<b>30126</b>	<b>433</b>	<b>877307</b>

#### **4.16 Gender Equality**

The index of gender equality measuring the attainments in human development indicators for females as a proportion of that of males, has rated Himachal Pradesh as number 1 in Gender Equality, while it was at number four in eighties, reflecting the positive trend in the empowerment of women in Himachal Pradesh.

#### **4.17 Developmental Projects**

Since early 2000, a number of externally aided projects are being executed in Himachal Pradesh. The recently completed and presently ongoing projects having relevance to this Program are listed below.

CIN 1149: Himachal Pradesh Disaster Risk Reduction and Preparedness Program  
Environment and Social Management Framework

**Table 19: Relevant Externally Aided Projects**

Sl. No.	Project Name	Funding Organization	Project Cost (in INR – Cr)	Completion Status	Relevance to this Program	
					Dept.	Remarks
1.	HP Forest Ecosystems Climate Proofing Project Dharamshala	KfW	308.45	Completed	Forest	The project involved Spring Catchment rejuvenation. It has a common theme with Program Component 2.4.
2.	Himachal Pradesh Forest Ecosystems Management and Livelihoods Improvement Project	JICA	800	Ongoing	Forest	This project aims to manage and enhance forest area ecosystems involving livelihood improvement support and institutional capacity strengthening.
3.	Integrated Development project for Source Sustainability & Climate resilient Rain-fed Agriculture	WB	700	Ongoing	Forest	The project aims to develop a sustainable and climate resilience agricultural practice
4.	HP State Road Transformation Project (HPSRP-II)	WB	799.68	Ongoing	Public Works	One of the activities under this project is application of improvement technology in road maintenance through bio-engineering solution for slope stability by local women group. This is a common theme with Program Component 3.1.
5.	HP Horticulture Development Project	WB	1066.49	Ongoing	Horticulture	One of the components of this project is Setting up of the Economic and Market Information and Intelligence Cell. This cell will also provide Agricultural Short Messaging Services (SMS). However, this service will be outsourced. Further, unlike this Program, enhancement of weather forecast capability will not be strengthened through this project.

Source: Various GoHP Publications

## 5 Environmental and Social Impact Assessment

This section of the report presents the anticipated E&S impacts due to proposed project activities and recommended mitigation measures. A risk assessment methodology has been proposed based on this assessment. Expected E&S safeguard instruments for evaluated risk types are also specified in this section.

### 5.1 Identification of Impact

As indicated under Section 2, the HP DRRP aims to enhance disaster and climate resilience through strengthening disaster risk mitigation approach and preparedness, improving disaster response, and building capacities in risk governance. It consists of 21 Projects (Refer Sec. 2.1) which include development of various soft components, purchase of equipment or software, physical infrastructure development as well as deliverables under Risk Based Financing (RBF) track. Based on the proposed interventions the identified Projects are classified into following four types.

- **Type 1.** Disaster mainstreaming & knowledge development projects (Project 1.2, 1.3, 1.5, 1.6, 1.7, 1.8, 1.9 and all DLIs under RBF Sub-component)
- **Type 2.** Resilience building projects (EWS, Weather stations, etc.) (Project 2.1, 2.2, 2.3)
- **Type 3.** Disaster response capacity building projects (SIDM, Training centers, TDU, Helipads, Fire stations, Forest Fire Management, etc.) (Project 1.1, 1.4, 2.4, 2.5, 2.6, 2.7, 2.8, 3.3)
- **Type 4.** Disaster mitigation and rehabilitation projects (slope stabilization, bio-engineering nurseries, etc.) (Project 3.1, 3.2, 3.4).

The main environmental and social impacts anticipated during implementation of the Projects are associated with various physical infrastructure development and are evaluated in this ESMF. Since the location and design of few of the proposed Projects are yet to be finalized, it is not possible to assess the full E&S impact of such Projects at the time of preparation of this report. Further, the soft component-based Projects/Activities such as studies involve neither DPR preparation nor construction activities. Therefore, those projects do not have any significant environmental and social impacts. During implementation, based on the outcome of these studies, varying degrees of positive/negative impacts are expected on different E&S attributes of the surrounding areas. The significance of these impacts would depend upon the size and location of individual projects. However, the other Projects will involve typical area development and construction activities. The anticipated environmental and social impacts during design/ Pre-construction, Construction and Operation Phases along with their potential mitigation measures are discussed below.

## 5.2 Direct and Indirect Impacts

### Direct Impact

The Program covers a number of projects involving civil work or construction activities. While some impacts are common to all projects, others are project specific. Accordingly, the anticipated impacts can be classified into:

- Generic impacts and mitigation measures, and
- Project specific impacts and mitigation

The generic impacts and mitigation measures those are common to most activities (Projects) are discussed below (Table 20) whereas the project specific impact and mitigation measures are discussed in Table 21.

- Anticipated environmental risks and impacts anticipated for this Program are:
  - Sediment and erosion;
  - Water quality;
  - Dust, noise, and vibration;
  - Disposal of hazardous materials and wastes;
  - Domestic solid wastes;
  - Potential impacts on flora and fauna;
  - Potential impacts on protected forests and biodiversity; and
  - Climate change.
- Social risks and impacts anticipated for this Program are:
  - Land acquisition, economic displacement and possible loss of access to properties;
  - Risk for vulnerable groups if they are physically or economically displaced by the project;
  - The main risks relating to labor and working conditions in the project are: i) unequal payment for the same job for female and male workers; ii) discrimination of women and/or vulnerable groups; iii) payment for unskilled workers below the minimum wage as per Gol mandated minimum wage ; iv) inadequate working facilities for workers including housing for government staff at the border posts, in particular lack of sanitation facilities for women; v) risks of child labor or indentured labor, especially in the supply chain. (vi) labor related disputes, (iv) SEA/SH and VAC, and (vii) occupational health and safety or OHS related issues such as inadequate personal protective equipment (PPE) and unsafe handling and disposal of asbestos containing material (ACM) at building renovation/demolition sites.
  - Road safety and increase of heavy traffic (especially international long-haul trucks) during project operation but also related risks during construction;
  - Temporary labor influx of workers, which might increase the risk of substance abuse;
  - Increased risk of SEA/SH from workers (including in training/other activities) and their proximity to vulnerable groups, as well as opening up of the corridor;
  - Increased risk of human trafficking from corridor connectivity;
  - Impacts to ethnic groups due to their likely presence in the project area;

- Impacts to cultural and spiritual spaces;
- Risks of exclusion of ethnic or vulnerable farmers from the benefits of the agricultural programs;
- Risk of COVID19 transmission; and
- Risks in the supply chain (such as underage or forced labor)

**Table 20: Generic Impact and Mitigation Measures**

Project Phase	Potential risks/ impact	Mitigation Measures
Planning and Pre-Construction	<ul style="list-style-type: none"> <li>● Locational impact due to site selection;</li> <li>● Buildings are susceptible to climate change impact</li> </ul>	<ul style="list-style-type: none"> <li>● Avoid selection of site on steep slope, land subsidence, land slide prone areas, forest areas;</li> <li>● Planning for climate resilience sustainable infrastructure development, ensure energy efficient building design and compliance with Griha V2019 4STAR ratings.</li> </ul>
Construction	<ul style="list-style-type: none"> <li>● Loss of tree cover due to site clearance, habitat loss, impact on local ecology;</li> <li>● Impact on land use, topography, hydro geology;</li> <li>● Air and noise pollution during construction phase;</li> <li>● Soil erosion due to cut and fill activity, loss of productive soil;</li> <li>● Compaction and contamination of soil;</li> <li>● Contamination of water resource (ground and surface);</li> <li>● Increase of carbon footprint during material sourcing;</li> <li>● Construction waste disposal;</li> <li>● C&amp;D and hazardous waste disposal;</li> <li>● Traffic congestion, inconvenience to local people;</li> <li>● Occupational and community health hazard;</li> <li>● Migrant labour influx, conflict with local community.</li> <li>● Social risks related to the temporary and permanent displacement of project-affected people;</li> <li>● Sexual exploitation and abuse/sexual harassments risks during construction phase;</li> <li>● Building designs are inconvenient to physically challenged, women users;</li> </ul>	<ul style="list-style-type: none"> <li>● Ensure least number of tree felling, avoid felling of protected category of tree species (refer Annexure 2).</li> <li>● Avoid large scale topographical changes, limit cut and fill activity in slope areas.</li> <li>● Cover material to avoid dust generation by wind, sprinkle water where necessary, cover or wet material during transportation.</li> <li>● Locate crusher plant away from school, health center, settlement, and forest areas.</li> <li>● Use of face mask by workers while working in dust prone areas.</li> <li>● Limit noise level near school, health center, settlement, and forest areas.</li> <li>● Use noise reduction devices on heavy equipment. Restrict time of construction. Provide ear plugs to workers working in high noise area.</li> <li>● Stockpile at safe area with drainage so as to avoid water pollution, recover topsoil for future use before using area for stockpiling.</li> <li>● Measures such as settling ponds, silt fences and screens to prevent sediment transport should be incorporated.</li> <li>● No new quarry site will be developed, material sourcing from local limit only, battery operated vehicles will give priority for material transportation.</li> <li>● Prepare site-specific Waste Management Plan for construction waste disposal; hazardous materials will be stored at safe areas under proper lining; oil and lubricants will be stored on impervious surface and properly disposed of.</li> <li>● Prepare Traffic Management Plan to minimize traffic congestion, inconvenience.</li> <li>● Prepare contractor site safety plan and EHS Plan to reduce occupational risk and safety hazard.</li> </ul>

CIN 1149: Himachal Pradesh Disaster Risk Reduction and Preparedness Program  
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Project Phase	Potential risks/ impact	Mitigation Measures
		<ul style="list-style-type: none"> <li>• Ensure local employment, emphasize should be given to engage at least 50%-women employees, Prepare Gender Action Plan (GAP).</li> <li>• Ensure minimum displacement, ensure no project affected people (PAP) from tribal community, and prepare Resettlement Action Plans (RAP) and/or Ethnic Groups Engagement Plan (EGEP) as per requirement.</li> <li>• Assess temporary income loss of local people</li> <li>• Establish a Grievance Redress Mechanism (GRM) for the project compliance.</li> <li>• Ensure stakeholder consultation, information dissemination. Prepare Stakeholder Engagement Plan (SEP),</li> <li>• Facility should ensure accessibility to person with special needs, construction design should include gender aspects.</li> </ul>

Table 21: Project Specific Impacts and Mitigation Measures

Project	Type of intervention	Pre-identified Potential Risks/ Impact	Mitigation Measures	Monitoring and Reporting	Timeline	Responsibility
<b>Type 1. Disaster Mainstreaming &amp; Knowledge Development Projects</b>						
1.2, 1.3, 1.5, 1.6, 1.7, 1.8, 1.9	Enhancing disaster risk governance through capacity building, institutional development, risk understanding and knowledge management	<u>Study Phase</u> <ul style="list-style-type: none"> <li>Non incorporation of E&amp;S and climate change aspects in terms of involvement of local community, gender inclusion, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Stakeholder engagement</li> <li>Mechanism for inclusion of gender during implementation of study recommendations</li> </ul>	Sections on plans for stakeholder engagement and gender inclusion in the study reports Monthly progress reporting	During study period and prior to implementation	IAs and PMDC
<b>Type 2. Resilience Building Projects</b>						
2.1	Installation of 10 GLOF sensors at water level and 30 flood sensors	<u>Design Phase</u> <ul style="list-style-type: none"> <li>Selected site susceptible to river bank erosion, scouring and filling effect;</li> </ul> <u>Construction Phase</u> <ul style="list-style-type: none"> <li>Unsafe access to the site;</li> <li>Disposal of discarded equipment (if any);</li> <li>Safety risk in construction of tower, handling of electrical wiring;</li> </ul> <u>Operation Phase</u> <ul style="list-style-type: none"> <li>Inadequate maintenance of access</li> <li>Inadequate outreach and community engagement;</li> <li>Exclusion of women participation.</li> </ul>	<u>Design Phase</u> <ul style="list-style-type: none"> <li>Selecting site by avoiding river bank erosion prone areas, steep curve alignment.</li> <li>Ensure community participation and gender mainstreaming, prepare Stakeholder Engagement Plan (SEP) and Gender Action Plan (GAP).</li> </ul> <u>Construction Phase</u> <ul style="list-style-type: none"> <li>No construction work at river bed during monsoon time.</li> <li>Prepare construction waste management plan (CWMP) including hazardous waste</li> </ul>	Screening report  SEP and GAP  CWMP	Design and planning phase  Prior to construction  Prior to construction	Preparation – PMDC with help of PIUs and IAs, Verification - PMU  Preparation of CWMP – Contractor Verification – PMDC along with PIUs

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Project	Type of intervention	Pre-identified Potential Risks/ Impact	Mitigation Measures	Monitoring and Reporting	Timeline	Responsibility
			<p>management plan for disposal of discarded equipment.</p> <p><u>Operation Phase</u></p> <ul style="list-style-type: none"> <li>Prepare site safety plan to reduce occupational risk and safety hazard.</li> <li>Ensure periodic surveillance.</li> </ul>	<p>Quarterly report to PEC and Bi- annual reporting to AFD after Site verification</p>	<p>During construction and operation phase</p>	<p>Preparation - IAs Verification – PIU and PMU</p>
2.2	Procurement of mobile satellite phone	<p><u>Design Phase</u></p> <ul style="list-style-type: none"> <li>Check specification to ensure radiation is within acceptable limit</li> <li>Ensure ownership of these devices so that these could be properly used during emergency.</li> </ul> <p><u>Operation Phase</u></p> <ul style="list-style-type: none"> <li>Ensure operability at the time of emergency.</li> </ul>	<p><u>Design Phase</u></p> <ul style="list-style-type: none"> <li>Prepare procurement specification</li> <li>Implement SEP for ownership</li> <li>Impart training for proper usage during emergency</li> </ul> <p><u>Operation Phase</u></p> <ul style="list-style-type: none"> <li>Develop guideline for operability during emergency</li> </ul>	<ul style="list-style-type: none"> <li>Procurement specification</li> <li>SEP</li> <li>Training Records</li> </ul>	<p>Prior to procurement</p> <p>Within 6 months of procurement</p>	<p>PIU and PMDC</p> <p>IA and PMU</p>
2.3	Expansion of the network of weather stations by establishing real-time observatories, automatic weather stations including rain gauges up to block level.	<p><u>Design Phase</u></p> <ul style="list-style-type: none"> <li>Damage to weather sensors due to in-splashing, snow accumulation, thermal radiation effect;</li> <li>Low efficacy due to shading effect.</li> </ul> <p><u>Construction Phase</u></p>	<p><u>Design Phase</u></p> <ul style="list-style-type: none"> <li>Select site by considering availability of broader obstruction free areas. Check future development plan in the vicinity that may obstruct functioning of sensors.</li> <li>The area should be protected from thermal radiation, well ventilated, open to sky, above</li> </ul>	<p>E&amp;S Screening Report ESMP, SEP, GAP Site layout plan</p> <p>Site General Alignment drawing showing boundary</p>	<p>In the DPR</p> <p>Prior to construction</p>	<p>PMDC and IA</p> <p>Contractor and PIU</p> <p>PIU and PMDC</p>

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Project	Type of intervention	Pre-identified Potential Risks/ Impact	Mitigation Measures	Monitoring and Reporting	Timeline	Responsibility
		<ul style="list-style-type: none"> <li>Site safety issues to local community</li> <li>For other construction phase impact, refer <b>Table 20</b></li> </ul> <p><u>Operation Phase</u></p> <ul style="list-style-type: none"> <li>Inadequate outreach and community engagement;</li> <li>Exclusion of women participation.</li> </ul>	<p>the level of in-splashing and/ or snow accumulation.</p> <p><u>Construction Phase</u></p> <ul style="list-style-type: none"> <li>Ensure site safety by wire fencing, boundary wall construction etc.</li> </ul> <p><u>Operation Phase</u></p> <ul style="list-style-type: none"> <li>Ensure participation of local agricultural communities by structured coordination, prepare communication protocol as required.</li> <li>Ensure women participation.</li> </ul>	<p>Quarterly report to PEC and Bi- annual reporting to AFD after Site verification</p>	<p>During construction and operation phase</p>	<p>Preparation - IAs Verification – PIU and PMU</p>
<b>Type 3. Disaster Response Capacity Building Projects</b>						
1.1	Development of physical infrastructure for SDMA and 6 DDMA with Emergency Operation Centre (EOC) facility	For generic construction phase impact, refer <b>Table 20</b> .	For generic construction phase mitigation measures refer <b>Table 20</b> .	<p>E&amp;S Screening Report ESMP/ RAP, SEP, GAP</p> <p>Monthly progress report</p> <p>Quarterly report to PEC and Bi- annual reporting to AFD after Site verification</p>	<p>In the DPR</p> <p>During construction phase</p> <p>During construction and operation phase</p>	<p>PMDC and IA</p> <p>Contractor and PIU</p> <p>Preparation - IAs Verification – PIU and PMU</p>
1.4	Development of physical infrastructure for State Institute for Disaster Management (SIDM) at existing					

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Project	Type of intervention	Pre-identified Potential Risks/ Impact	Mitigation Measures	Monitoring and Reporting	Timeline	Responsibility
	campus of Himachal Pradesh Institute of Public Administration (HIPA)					
2.6	Construction of infrastructure for 1 company SDRF at Kangra along with construction of staff and officer's quarter, one helipad, one no. rescue tower (60 ft tall), area for training/ mock drill exercise etc.					
2.8	Improvement of physical infrastructure of five existing training centers for civil defense for strengthening of disaster response					
3.3	Development of one Technology Demonstration Units (TDUs) at existing engineering institute campus at					

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Project	Type of intervention	Pre-identified Potential Risks/ Impact	Mitigation Measures	Monitoring and Reporting	Timeline	Responsibility
	Sundernagar, Mandi.					
2.4	Capacity augmentation of forest department by establishing fire crew station for rapid response and installation of fire sensors at strategic locations; establishment of wireless network through VHF radio communication system; improvement of moisture regime and spring shed development in highly vulnerable forest areas.	<p><u>Design Phase</u></p> <ul style="list-style-type: none"> <li>Locational impact due to site selection of fire crew station</li> </ul> <p><u>Construction Phase</u> For generic construction phase impact, refer <b>Table 20</b>.</p> <p><u>Operation Phase</u></p> <ul style="list-style-type: none"> <li>Occupational safety hazard during the vegetation clearance</li> <li>Risk of non-participation of community in fire management.</li> <li>Damage to sensor and fire crew station due to forest fire.</li> <li>Unavailability of water resource to mitigate the fire during dry season;</li> <li>Damage to tree cover, habitat and economic loss depending on time interval to respond and control forest fire</li> </ul>	<p><u>Design Phase</u></p> <ul style="list-style-type: none"> <li>Site selection by considering fire hazard prone areas, ecological sensitivity, proximity to habitat etc.</li> <li>Avoid cutting trees under protected category while selecting site for fire crew station.</li> </ul> <p><u>Operation Phase</u></p> <ul style="list-style-type: none"> <li>Fire strip clearance by maintenance of fire line and control burning;</li> <li>Assess soil degradation after establishing fire lines</li> <li>Maintenance of soil moisture by water sprinkling;</li> <li>Maintenance of water harvesting structure within the forest areas, especially for dry season;</li> <li>Awareness generation, IEC campaign;</li> <li>Ensure community participation;</li> </ul>	<p>E&amp;S Screening Report, ESMP, SEP, GAP</p> <p>Quarterly report to PEC and Bi- annual reporting to AFD after Site verification</p>	<p>In the DPR</p> <p>During construction and operation phase</p>	<p>PMDC and IA</p> <p>Preparation - IAs Verification – PIU and PMU</p>

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Project	Type of intervention	Pre-identified Potential Risks/ Impact	Mitigation Measures	Monitoring and Reporting	Timeline	Responsibility
			<ul style="list-style-type: none"> <li>Restoration of affected areas by conversion into broad leaved canopy trees;</li> <li>Incentive based mechanism for community participation</li> </ul>			
2.5	Construction of five new fire station cum demonstration centers along with purchase of Fire Fighting equipment and emergency vehicles for three existing fire stations.	<p><u>Design Phase</u></p> <ul style="list-style-type: none"> <li>Locational impact due to site selection;</li> <li>Unavailability of water resource to mitigate the fire incidence;</li> <li>Social risk due to permanent displacement for titleholders and non-titleholders.</li> </ul> <p><u>Construction Phase</u></p> <ul style="list-style-type: none"> <li>Social risk due to temporary displacement for mobile vendors, informal businesses or kiosks.</li> </ul> <p>For generic construction phase impact, refer <b>Table 20</b>.</p> <p><u>Operation Phase</u></p> <ul style="list-style-type: none"> <li>Damage to human habitat and economic loss depending on time interval to respond and control of fire incidence.</li> </ul>	<p><u>Design Phase</u></p> <ul style="list-style-type: none"> <li>Site selection by considering fire hazard prone areas, habitat nearby to large industries, forest areas etc.</li> <li>Site selection by considering strategic location within the habitat areas.</li> <li>Ensure availability of water resource.</li> <li>Prepare Emergency Evacuation Plan, Site safety Management Plan, EHS Plan, Community participation Plan for construction and operation phase compliance.</li> </ul> <p><u>Construction Phase</u></p> <ul style="list-style-type: none"> <li>Implement RAP, prior to construction, if required.</li> </ul>	<p>E&amp;S Screening Report ESMP/ RAP, SEP, GAP</p> <p>Monthly progress report</p> <p>Quarterly report to PEC and Bi- annual reporting to AFD after Site verification</p>	<p>In the DPR</p> <p>During construction phase</p> <p>During construction and operation phase</p>	<p>PMDC and IA</p> <p>Contractor and PIU</p> <p>Preparation - IAs Verification – PIU and PMU</p>
2.7	Establishment of 31 number of Helipads to enable emergency	<p><u>Design Phase</u></p> <ul style="list-style-type: none"> <li>Locational impact due to site selection;</li> <li>Social risk due to permanent</li> </ul>	<p><u>Design Phase</u></p> <ul style="list-style-type: none"> <li>Site selection by considering availability of broader</li> </ul>	<p>E&amp;S Screening Report, ESIA &amp; ESMP, RAP, EGEF/EGEP, SEP, GAP, LMP, BMP, CHMP</p>	<p>In the DPR</p>	<p>PMDC and IA</p>

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Project	Type of intervention	Pre-identified Potential Risks/ Impact	Mitigation Measures	Monitoring and Reporting	Timeline	Responsibility
	medical evacuation process (8 in forest land)	<p>displacement for titleholders and non-titleholders.</p> <p><u>Construction Phase</u></p> <ul style="list-style-type: none"> <li>• Loss of tree cover due to site clearance, habitat loss, impact on local ecology;</li> <li>• Social risk due to temporary displacement for mobile vendors, informal businesses or kiosks.</li> <li>• Permanent impact on land use, topography, hydro geology;</li> </ul> <p><u>Operation Phase</u></p> <ul style="list-style-type: none"> <li>• Safety hazard arising during helipad operation;</li> <li>• Noise and vibration impact arising from helipad operation;</li> </ul>	<p>obstruction free areas, preferably, square, circular or rectangular in shape, relatively flat land, by avoiding an area susceptible to land subsidence, erosion prone/land slide prone areas etc.</p> <ul style="list-style-type: none"> <li>• Avoid selection of forest land, ensure least number of tree felling. Avoid cutting trees under protected category in Himachal Pradesh</li> <li>• Avoid large scale topographical changes, limit cut and fill activity, maintain natural slope as much as possible.</li> </ul> <p><u>Construction Phase</u></p> <ul style="list-style-type: none"> <li>• Ensure appropriate compensatory afforestation in consultation with Forest Department</li> <li>• For generic construction phase mitigation measures refer <b>Table 20</b>.</li> </ul> <p><u>Operation Phase</u></p> <ul style="list-style-type: none"> <li>• Fencing/ barricading the area to ensure restriction of any kind of unauthorized entry, keep away the stray animals entering into</li> </ul>	<p>Compensatory afforestation plan, C-SEMP with WMP and TMP</p> <p>Quarterly report to PEC and Bi- annual reporting to AFD after Site verification</p>	<p>Prior to construction</p> <p>During construction and operation phase</p>	<p>Contractor and PIU</p> <p>Preparation - IAs Verification – PIU and PMU</p>

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Project	Type of intervention	Pre-identified Potential Risks/ Impact	Mitigation Measures	Monitoring and Reporting	Timeline	Responsibility
			<p>perimeter of safety area;</p> <ul style="list-style-type: none"> <li>• Ensure adequate lighting arrangement and security;</li> <li>• Placement of at least one 12 Kg Powder (DCP) fire extinguisher available at landing site as per DGCA requirement;</li> <li>• Arrangement of smoke signal and flashlight;</li> <li>• Arrangement of first aid kit;</li> <li>• Ensure wearing of appropriate eye and hearing protective PPE;</li> <li>• Ensure security and fire safety arrangement at fuel storage area;</li> <li>• Ensure no storage of loose construction material/ debris and no smoke within a periphery of 100 ft. around helicopter take-off and landing zone;</li> <li>• Ensure safe access to passengers/ rescued people.</li> </ul>			
<b>Type 4. Disaster Mitigation and Rehabilitation Projects</b>						

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Project	Type of intervention	Pre-identified Potential Risks/ Impact	Mitigation Measures	Monitoring and Reporting	Timeline	Responsibility
3.1	Protection/ treatment of landslide mitigation at 11 highly vulnerable landslide-prone sites near critical infrastructure and habitation by slope stabilization and rock fall mitigation works, construction of box culvert, retaining wall and breast wall, wire crating, application of geo-textile materials and bio-engineering measures etc.	<p><u>Design &amp; Planning Phase</u></p> <ul style="list-style-type: none"> <li>• Temporary loss of access</li> <li>• Temporary loss of income;</li> </ul> <p><u>Construction Phase</u></p> <ul style="list-style-type: none"> <li>• Loss of tree cover during site clearance, Change in land use;</li> <li>• Soil erosion, loss of productive soil;</li> <li>• Compaction and contamination of soil due to vehicular movement;</li> <li>• Impact on downstream water bodies during site clearance activities;</li> </ul> <p>For generic construction phase impact, refer <b>Table 20</b></p> <p><u>Operation Phase</u></p> <ul style="list-style-type: none"> <li>• Recurrence of incidence due to structural failure</li> </ul>	<ul style="list-style-type: none"> <li>• Prepare construction plan to minimize loss of access and avoid loss of income</li> <li>• Maintenance of natural slope as much as possible during design and construction; Avoid large scale topographical changes, limit cut and fill activity in slope areas.</li> <li>• Ensure least number of tree felling, applying bio-engineering measures where ever possible.</li> </ul> <p>For generic construction phase mitigation measures refer <b>Table 20</b></p> <ul style="list-style-type: none"> <li>• Compensatory framework and regulatory mechanism should be developed for defect liability period.</li> <li>• Regular checking of structural integrity.</li> </ul>	<p>E&amp;S Screening Report ESMP/ RAP</p> <p>Quarterly report to PEC and Bi- annual reporting to AFD after Site verification</p>	<p>In the DPR</p> <p>During construction and operation phase</p>	<p>PMDC and IA</p> <p>Preparation - IAs Verification – PIU and PMU</p>
3.2	Strengthening of forest nurseries for production and raising of bed and tall plants for protection of landslide prone	<p><u>Design &amp; Planning Phase</u></p> <ul style="list-style-type: none"> <li>• Locational impact due to site selection;</li> </ul> <p><u>Construction Phase</u></p> <ul style="list-style-type: none"> <li>• Change in land use;</li> <li>• Impact on drainage and hydrology;</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure maintenance of ecological balance while introduce bio-engineered species;</li> </ul>	<p>E&amp;S Screening Report ESMP/ RAP</p> <p>Quarterly report to PEC and Bi- annual</p>	<p>In the DPR</p>	<p>PMDC and IA</p>

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Project	Type of intervention	Pre-identified Potential Risks/ Impact	Mitigation Measures	Monitoring and Reporting	Timeline	Responsibility
	areas and erosion prone stream bank for prevent of further erosion/ landslide; restoration of riparian and stream bank ecosystem	<ul style="list-style-type: none"> <li>• Soil erosion, loss of productive soil;</li> <li>• Compaction and contamination of soil due to vehicular movement;</li> <li>• Contamination of water resource due to wash out of fertilizer, pesticides etc.;</li> </ul> <p><u>Operation Phase</u></p> <ul style="list-style-type: none"> <li>• Reoccurrence of landslide incidence due to low moisture content of the replanted vegetation, resulting uprooting of the bio-engineering measures.</li> <li>• Obstacles to wild life movement due non-maintenance of forest nursery</li> <li>• Aesthetic impact due to non-maintenance of forest nurse</li> <li>• Impact due to outbreak of diseases from forest nursery to surrounding local fauna.</li> <li>• Risk of non-participation of community in nursery management.</li> </ul>	<ul style="list-style-type: none"> <li>• Maintenance of natural slope as much as possible during design and construction;</li> <li>• Avoid large scale topographical changes, limit cut and fill activity in slope areas.</li> <li>• Ensure least number of tree felling.</li> <li>• Preserve topsoil for future use.</li> <li>• Regular maintenance by mulching and pruning.</li> <li>• Maintenance of soil moisture content by drift irrigation, sprinkler etc.;</li> <li>• Ensure there is no occupational health hazard during developing bioengineering nurseries</li> <li>• Ensure involvement of community in the process.</li> </ul>	reporting to AFD after Site verification	During construction and operation phase	Preparation - IAs Verification – PIU and PMU
3.4	Seismic retrofitting and upgradation of 40 number of schools and hospitals	For generic construction phase impact, refer <b>Table 20</b>	For generic construction phase mitigation measures refer <b>Table 20</b>	Quarterly report to PEC and Bi- annual reporting to AFD after Site verification	During construction and operation phase	Preparation - IAs Verification – PIU and PMU

### **Indirect Impact**

Indirect impacts that may be potentially amplified following mitigation of climate hazards and the increased connectivity within the State are - illegal trades of timber and wildlife products<sup>12</sup> from nearby forests/protected areas, community road safety risks, increased risk of human trafficking and incremental impacts on environmental characteristics due to works conducted outside the project area. Downstream impacts arising from forecasting type of activities which may not result in any direct environmental risks and impacts but could have downstream environmental implications (e.g. impact on water quality from extensive use of agrochemicals due to improved agricultural trade, accelerated change of land use from forests to agricultural lands).

## **5.3 Cumulative Impacts Assessment**

Cumulative impacts in this ESMF follow definition of the World Bank's ESF. The term cumulative impacts are defined as "the incremental impact of the project when added to impacts from other relevant past, present and reasonably foreseeable developments as well as unplanned but predictable activities enabled by the project that may occur later or at a different location. Cumulative impacts can result from individually minor but collectively significant activities taking place over a period of time"<sup>13</sup>.

Cumulative Impact Assessment (CIA) is defined as the process of 1) analyzing the potential impacts and risks of proposed developments in the context of the potential effects of other human activities and natural environment, and 2) proposing concrete measures to avoid, reduce or mitigate such cumulative impacts and risks to the extent possible.

At this stage of project preparation, a CIA has not been performed. It should be undertaken during the ESIA stage once the scope of the project activities is better defined. When conducting the CIA, during the ESIA stage, the following steps should be taken:

- Determine the spatial and temporal boundaries,
- Identify Valued Environmental and Social Components (VESC) in consultation with affected communities and stakeholders,
- Identify all developments and external natural and social stressors affecting the VESC.
- Determine the present conditions of VESC and assess cumulative impacts and evaluate their significance over VESC predicted conditions, design management and monitoring measures.

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<sup>12</sup> Webinar on "Wildlife and its Conservation", Date: 2020-10-08 conducted by HP ENVIS Hub, HIMCOST

<sup>13</sup> The World Bank 2017

While conducting the CIA, International Finance Corporation's (IFC) Good Practice Handbook<sup>14</sup> on Cumulative Impact Assessment and Management may be referred.

#### **5.4 Project Benefit and Positive Impact**

The Program envisaged varying degree of environmental impacts during construction phase. Although these impacts can be minimized by adaptation of appropriate mitigation measures and management plan to be developed in detail during Project ESIA phase. Through a diligent and successful implementation of the ESMF, the Program is expected to deliver a net socio-economic benefit to the State as a whole, without significantly compromising the key environmental values. The key benefits to local communities are envisaged as:

- Improved public safety and security by sustainable infrastructure development;
- Reduced sufferings due to adverse climatic conditions;
- Significant reduction of loss of lives and improve community safety;
- Improved access to services;
- Better connectivity resulting productive use of time;
- Health and Environmental improvement;
- Improvements in quality of life and human dignity;
- Generation of employment opportunity and skill development;
- Opportunities for social interaction and gender mainstreaming; and
- Improved community participation and sense of ownership.

#### **5.5 Impact Assessment and Significance of Impact**

Considering the various direct, indirect, cumulative adverse as well as beneficial impacts that this Program might result in, it is critical to assess these potential impacts as objectively as possible. For this purpose, a semi-quantitative risk ranking process, based on the impact severity (slight/ minor/ major/catastrophic – in the order of increasing degree) and impact duration (temporary/permanent), has been proposed. The risk ranking for this Program has been aligned with AFD's risk ratings of Projects. The risk assessment matrix used for this is given below. The detailed guidance is given in Annexure 6.

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<sup>14</sup> <https://www.ifc.org/en/insights-reports/2013/publications-handbook-cumulativeimpactassessment>

Risk Ranking Matrix for E&S Sensitiveness aligned with AFD's Risk-rating of Projects		Impact Duration (Duration of the event + recovery time from end of event)			
		Momentary (<1 month)	Short-term (<1 year)	Medium-term (1-5 years)	Irreversible
Impact Severity* (Extent, Frequency)	<b>Slight</b> (Notable effect within site)	Low	Low	Low	Moderate
	<b>Minor</b> (Impacts limited to organizational surroundings)	Low	Moderate	Moderate/ Substantial <sup>†</sup>	Substantial
	<b>Major</b> (Negative impacts on surrounding environment & repeated non compliances)	Low	Moderate/ Substantial	Substantial	High
	<b>Catastrophic</b> (Serious impacts on many attributes of environment in larger area)	Moderate	Substantial	High	High

Risk Ranking	<b>High</b>	<b>Significant.</b> Impacts with a “High” significance are likely to disrupt the function and value of the resource/receptor and may have broader systemic consequences (e.g., ecosystem or social well-being). These impacts are a priority for mitigation in order to avoid or reduce the significance of the impact.
	<b>Substantial</b>	<b>Significant.</b> Impacts with a “Substantial” significance are likely to be noticeable and result in lasting changes to baseline conditions, which may cause hardship to, or degradation of the resource or receptor, although the overall function and value of the resource or receptor is not disrupted. These impacts are a priority for mitigation in order to avoid or reduce the significance of the impact.
	<b>Moderate</b>	<b>Detectable but not significant.</b> Impacts with a “Moderate” significance are expected to be noticeable changes to baseline conditions, beyond natural variation, but are not expected to cause hardship, degradation, or impair the function and value of the resource or receptor. However, these impacts warrant the decision-maker's attention and should be avoided or mitigated where practicable.
	<b>Low</b>	<b>Low.</b> Any impacts are expected to be indistinguishable from the baseline or within the natural level of variation. These impacts do not require mitigation and are not a concern of the decision-making process.

By adopting the above-mentioned matrix, Project wise environmental and social risk ranking has been done for HP DRRP Projects. In order to perform this assessment, each of the project's potential impacts identified in Table 20 and Table 21 have been evaluated against the **Error! Reference source not found.** provided in **Error! Reference source not found.**

Since, the projects belonging to Type 1 are studies, no risk ranking has been performed for these projects. For Type 2 projects (2.1) the on-site implementation period is expected to be less than a month whereas project 2.2 involves procurement of mobile satellite phone only. Therefore, duration of impact for these projects have been assessed to be 'momentary' while impact severity as 'minor'. However, for project 2.3, the implementation period is expected to be more than one month but less

than 1 year, thus the impact duration has been assessed as ‘short term’. No impact is anticipated for these projects during operation phase.

In case of Type 3 and 4, most of the project impacts are from typical construction activities. Therefore, even though some of the project construction periods are expected to be more than 1 year but unlikely to be more than 5 years and hence, assessed to be ‘medium term’ with ‘minor’ impacts. However, project 2.7 involving establishment of new helipads are likely to cause irreversible change in landuse of a large area and hence has been assessed as ‘irreversible’ though with ‘minor’ impact severity (assuming no conversion of forest land). The summary of assessment is presented below.

**Table 22: Project wise E&S Risk Ranking**

Projects	Impact Duration	Severity	Risk	Likely Safeguard Instruments
<b>Type 1: Disaster Mainstreaming &amp; knowledge development projects</b>				
Project 1.2, 1.3, 1.5, 1.6, 1.7, 1.8, 1.9 (including DLIs under RBF Sub-component)	Not Applicable <sup>15</sup>	Not Applicable	Not Applicable	These study reports will include E&S aspects, communication and participation protocols in line with SEP and GAP.
<b>Type 2: Resilience building projects</b>				
Project 2.1	Momentary	Minor	Low (C )	Not required.
Project 2.2	Momentary	Minor	Low (C )	Not Required.
Project 2.3	Short Term	Minor	Moderate (B)	E&S Screening followed by ESMP, SEP, GAP
<b>Type 3: Disaster response capacity building projects</b>				
Project 1.1	Medium Term	Minor	Moderate (B)	For Moderate risk: E&S Screening followed by ESMP, SEP, GAP
Project 1.4	Medium Term	Minor	Moderate (B)	
Project 2.4	Short Term	Minor	Moderate (B)	
Project 2.5	Short Term	Minor	Moderate (B)	For Substantial risk: E&S Screening Report followed by ESIA & ESMP, RAP, EGEF/EGEP, SEP, GAP, LMP, BMP, CHMP
Project 2.6	Short Term	Minor	Moderate (B)	
Project 2.7	Irreversible	Minor	Substantial (B+)	
Project 2.8	Short Term	Minor	Moderate (B)	
Project 3.3	Medium Term	Minor	Moderate (B)	
<b>Type 4: Disaster Mitigation and Rehabilitation Projects</b>				
Project 3.1	Short Term	Minor	Moderate (B)	E&S Screening followed by ESMP, SEP, GAP
Project 3.2	Short Term	Minor	Moderate (B)	
Project 3.4	Short Term	Minor	Moderate (B)	

<sup>15</sup> Being studies

## 6 Environment and Social Management Procedures

The purpose of the ESMF is to manage potential adverse impacts by establishing a guidance document that will inform Executing Agency (EA) about the agreed sets of environmental and social procedures and measures for the Program. The ESMF is also a guidance document which outlines the necessary process for conducting future, site-specific, ESIA, ESMPs, and other relevant management plans once the project locations are known.

### 6.1 Screening, Approval and Scoping

Environmental and social screening is designed to identify and document potential impacts arising from proposed sub-projects and advise on the appropriate risk assessment and management processes and documentation to be undertaken. The environmental and social screening informs decision-makers about the need to implement measures or actions which avoid, minimize, mitigate or compensate for adverse impacts. Sub-projects are categorized according to the screening procedure depending on the type, location, sensitivity and scale of the project and the nature and magnitude of their potential environmental and social impacts. A project may be deemed to have minor, moderate, substantial or high- risk impacts. This should be decided by SDMA together with the AFD. Exclusion list of activity has been established, (refer Annexure 5) applicable for all projects. Besides AFD's exclusion list, a Program specific exclusions criteria has also been developed considering the types of projects proposed as part of this Program. The additional project screening criteria is presented below.

#### 6.1.1 Project Screening Criteria

##### Environment

- No selection of area exposed to extreme climate vulnerability.
- No conversion of forest land, or degradation of critical natural habitats sites or a large in land use pattern.
- No air, water, or soil contamination leading to significant adverse impacts on the health or safety of individuals, communities, or ecosystems;
- No adverse ecological impacts covering large geographical areas or global impacts such as greenhouse gas (GHG) emissions;

##### Social

- No land acquisition and/or resettlement of a scale or nature that will have significant adverse impacts on affected people, or the use of forced evictions;
- No access to land and/or natural resources leading to large scale social conflict
- No workplace conditions that expose workers to significant risks to health and personal safety;
- No marginalization of, or conflict within or among, social groups;
- No activity that may cause extensive relocation of Indigenous People or have significant impact on their customary rights on land and natural resources.

**Figure 17** presents E&S safeguard plans and documents vis a vis project phases and corresponding technical documentations.

CIN 1149: Himachal Pradesh Disaster Risk Reduction and Preparedness Program  
Environment and Social Management Framework

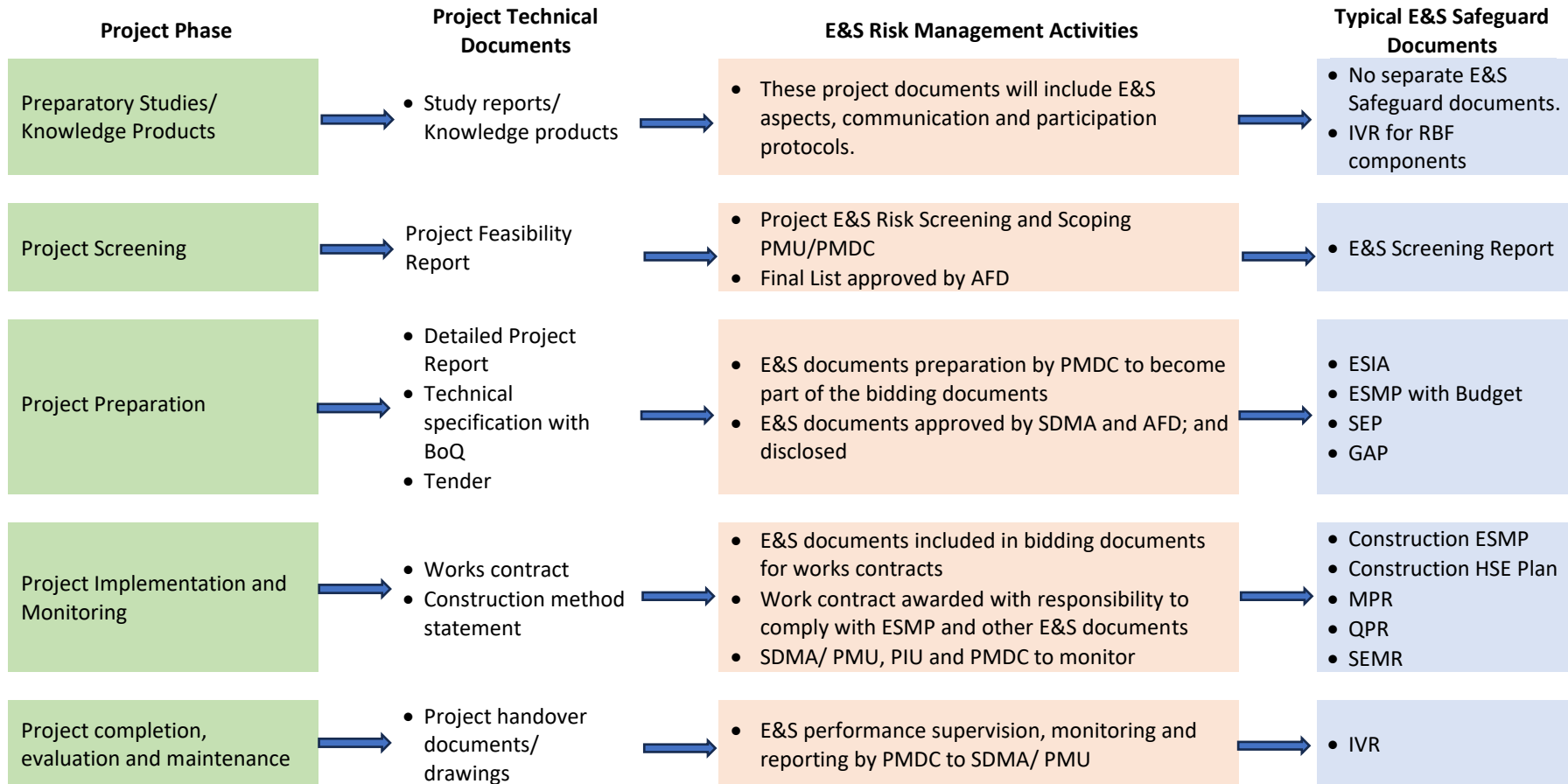


Figure 17: E&S Safeguard Plans vis a vis Project Phases

## **6.2 Preparation of ESIA and Site-Specific Environment and Social Management Plans (ESMPs)**

Once the locations for each project have been identified, site-specific ESMPs will be prepared. ESMPs will be prepared as part of the tasks of the consultants that will prepare the ESIA. The ESMPs will establish the environmental and social standard and compliance mechanisms. It will serve as the contractual basis for supervision and enforcement of good environmental and social practice during project construction works. The ESMPs should be guided by this ESMF as well as the ESIA, including the potential impacts and mitigation measures, which should be further detailed to mitigate risks and impacts within specific locations and work activities or amended as needed, including by breaking them down into impacts/mitigation during pre-construction, construction, operations and maintenance. Once contractors are in board, they will be responsible for preparing their own site-specific construction ESMPs (C-ESMPs).

The environmental and social analysis, design and preparation of an ESMP for each project must be conducted in close coordination with the feasibility study and detail engineering design. The ESMP should be read together with other documents that may be required, such as Resettlement Action Plans (RAP) and/or Ethnic Groups Engagement Plan (EGEP), as the RAP and EGEP may be part of the set of management plans to mitigate social impacts, if required. Stakeholder engagement should follow the parameters outlined in the Stakeholder Engagement Plan (SEP), and ensuring the SEP is updated. SDMA will make sure that the ESMPs (and other ESF tools, if required) for each project are consulted and disclosed prior to bidding. RAPs need to be implemented prior to construction works. PMU will also ensure that a grievance mechanism is in place during the entire Program to address any concern or suggestion for improvement coming from the stakeholders at local or state level.

## **6.3 Information Required in ESIA and ESMPs**

As mentioned before, in accordance with risk categorization, the consultant shall prepare an Environmental and Social Impact Assessment (ESIA) to identify and assess the potential environmental and social impacts of proposed projects, evaluate alternatives, and design appropriate mitigation, management, and monitoring measures. ESIA/ESMP will be required for each project, and site-specific RAPs and EGEPs will be prepared, if required. The ESIA will include an ESMP that will provide measures to be taken during the project's pre-construction, construction and operation phases. In preparing the ESIA, the Consultant shall carefully review E&S requirements of the Go, GoHP, and AFD's E&S policies and prepare ESIA that comply with requirements of GoI and donors in a streamlined manner to avoid unnecessary repetition.

Main objective of the ESIA study is to identify existing baseline and assess potential environmental and social impacts. As a result, the Project's ESMP will mitigate the potential negative impacts of the proposed project on local communities and local environment including enhancing potential positive impacts when possible. ESMP will include the need of assessment of social risk and impact also. Identification of temporary land acquisition requirement for setting of construction camps, as well as water supply, electricity etc. The PMU will ensure that ESMP include tasks and responsibilities around identifying and planning for land acquisition needs and that any land acquisition is done in line with this RAP and WB ESS5 standards, including following the principle of trying to avoid land acquisition as much as possible. The ESMP should ensure adequate coordination with other documents including, RAPs, GAPs, EGEPs and the SEPs.

The ESMP shall include:

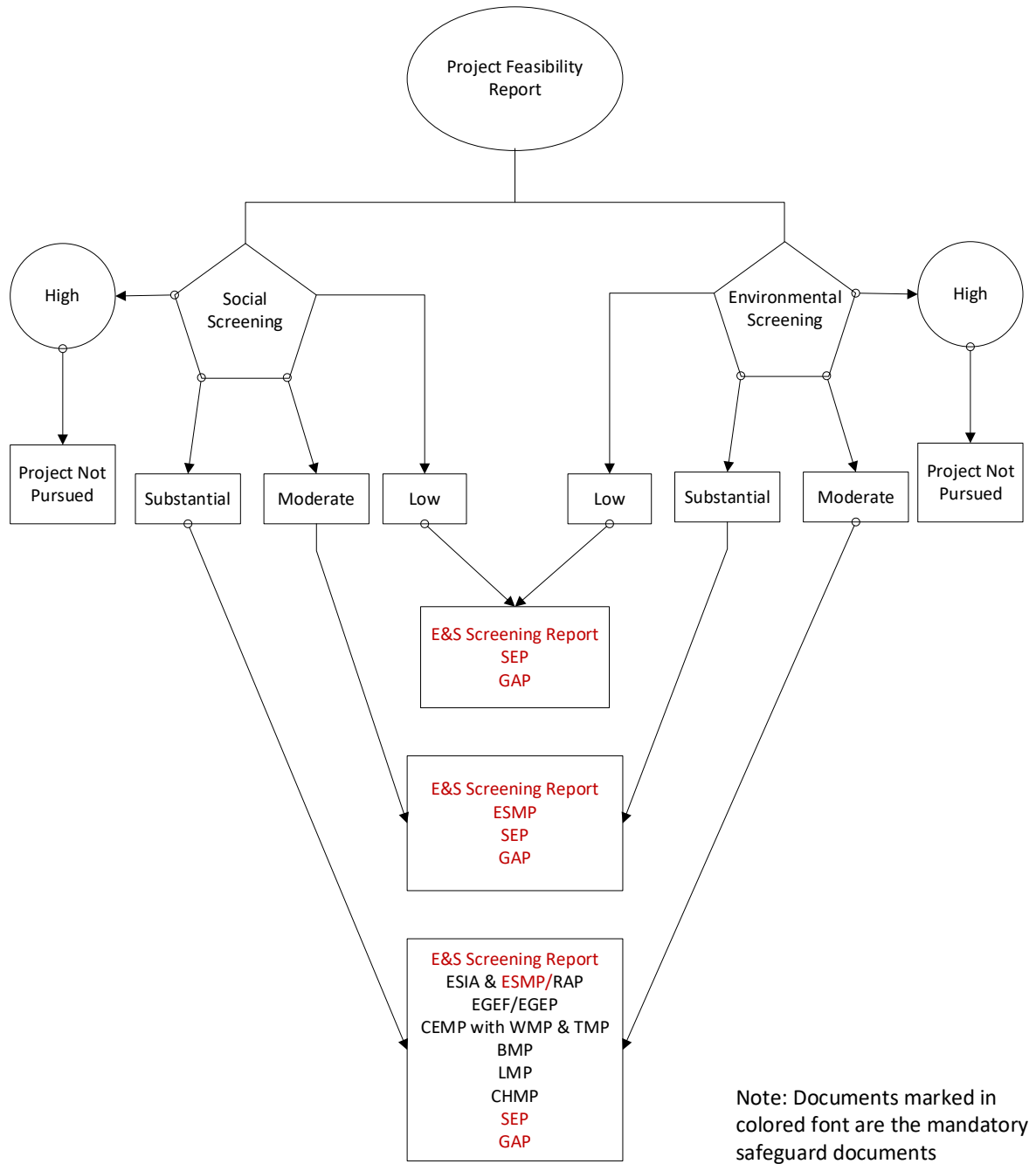
- a) A social and environmental baseline assessment with available information;
- b) Identification of all physical, environmental and social risks or impacts within direct impact zone around proposed project;
- c) Identification of mitigation measures for all impacts identified,
- d) The environment and/or social instrument in which the mitigation measures will be included (i.e., RAP, EGEP, construction specifications, bidding documents, SEP, etc.);
- e) Agency responsible for implementation, including capacity needs training necessary;
- f) Timeline for implementation of the mitigation measure (before construction, during construction, during planning, etc.);
- g) Sources of funding for implementing the mitigation measure.

The ESMP should also identify specific community participation mechanisms, guided by the project's Stakeholder Engagement Plan, to address environment and social issues, as well as a detailed Grievance Redress Mechanism to deal with stakeholder's complaints or concerns.

The objectives of the ESMP will be to:

- a) Identify management mechanisms to deal with environmental and social impacts identified in the ESIA, to address those impacts;
- b) Ensure that the contractor can find solutions for any problem arising during construction or maintenance activities; and
- c) Ensure that project affected and interested stakeholders have necessary project information, are consulted and engaged, and have a mechanism to submit grievances.

The requirements of the ESMP, as developed through this ESMF, and PMU's commitment to implement the mitigation measures will be included in the Environment and Social Commitment Plan (ESCP). The various safeguard instruments that may need to be developed depending on the impact categorization of the Projects, is presented below.



**Figure 18: Categorization of Projects and Safeguard Documents**

The templates of the key safeguard documents/ plans that may need to be developed for the individual Projects are presented in **Table 23**.

**Table 23: Key E&S Safeguard Documents/ Plans and Template References**

Sl. No.	Name of the Safeguard Document	Brief Description	Template/ Resource Reference
1.	E&S Screening Report	The objective of Environment and social screening is to identify the potentially significant environmental/ social issues related with a project at an early stage for detailed Environmental and Social impact assessment as per project categorization.	Annexure 4
2.	Environment and Social Impact Assessment (ESIA)	Environmental and social impact assessment (ESIA) is an instrument to identify and assess the potential environmental and social impacts of a proposed project, evaluate alternatives, and design appropriate mitigation, management, and monitoring measures	<a href="https://thedocs.worldbank.org/en/doc/837721522762050108-0290022018/original/ESFFramework.pdf">https://thedocs.worldbank.org/en/doc/837721522762050108-0290022018/original/ESFFramework.pdf</a> Page No. 39
3.	Environment and Social Management Plan (ESMP)	An ESMP consists of the set of mitigation, monitoring, and institutional measures to be taken during implementation and operation of a project to eliminate adverse environmental and social risks and impacts, offset them, or reduce them to acceptable levels. The ESMP also includes the measures and actions needed to implement these measures. The Borrower will (a) identify the set of responses to potentially adverse impacts; (b) determine requirements for ensuring that those responses are made effectively and in a timely manner; and (c) describe the means for meeting those requirements.	<a href="https://thedocs.worldbank.org/en/doc/837721522762050108-0290022018/original/ESFFramework.pdf">https://thedocs.worldbank.org/en/doc/837721522762050108-0290022018/original/ESFFramework.pdf</a> Page No. 40
4.	Cumulative Impact Assessment (CIA)	In order to conduct an appropriate assessment and management of cumulative impacts and risks related to project, factors such as climate change and unpredictability of climate patterns, increasing and competing water use demands, decline of species biodiversity, degradation of ecosystem services, and changing socio-economic circumstances should be considered. Potential systemwide consequences resulting from the combination of individual effects of multiple actions overtime are particularly important for CIA.	<a href="https://www.ifc.org/content/dam/ifc/doc/mgrt/ifc-goodpracticehandbook-cumulativeimpactassessment.pdf">https://www.ifc.org/content/dam/ifc/doc/mgrt/ifc-goodpracticehandbook-cumulativeimpactassessment.pdf</a>
5.	Rehabilitation Action Plan (RAP)	The purpose of a resettlement action plan is to specify all resettlement arrangements and the measures for avoiding, minimizing or compensating losses or other negative social impacts resulting from resettlement. It establishes the basis for the agreement with the affected parties.	<b>Error! Reference source not found.</b>

Sl. No.	Name of the Safeguard Document	Brief Description	Template/ Resource Reference
6.	Stakeholder Engagement Plan (SEP)	A SEP provides stakeholders with timely, relevant, understandable and accessible information, and consult with them in a culturally appropriate manner, which is free of manipulation, interference, coercion, discrimination and intimidation.	<a href="https://pubdocs.worldbank.org/en/909361530209278896/ESF-Template-ESS10-SEP-June-2018.pdf">https://pubdocs.worldbank.org/en/909361530209278896/ESF-Template-ESS10-SEP-June-2018.pdf</a>

#### 6.4 Responsibilities for Preparation and Bidding Document

PMU will have overall responsibility for the preparation of the full ESIA and ESMPs, and any other document required (RAPs or EGEPs for example), and all documents will need to be cleared by AFD, consulted on and publicly disclosed in local language (and Hindi) and included as part of bidding documents for civil works contractors. Contractors need to prepare site specific C-ESMP, based on the ESMP. The departmental Nodal Agency would be in charge of implementation of the mitigation measures during construction while supervising engineer for implementing of monitoring plan. PMU with the help of consultant (PMDC) would therefore prepare the ESMF, EGEF, RAP and SEP (as per requirement) and should ensure inclusion of these documents as part of bid documents for construction contractor.

#### 6.5 Responsibilities for Supervision and Monitoring on ESMP Implementation

SDMA with technical support from DDMA/PMDC will have overall responsibility for supervising contractors (and their subcontractors, if applicable) conducting the civil works for identified project in their implementation and compliance with the C-ESMPs once these are prepared. In this task, SDMA will be assisted by DDMA and other departmental nodal agencies.

## 7 Stakeholder Engagement and Grievance Redressal Mechanism

### 7.1 Stakeholder Mapping and Engagement

The stakeholder consultation is an integral part of the project design/ preparatory as well as implementation phase. The project supports a participatory and consultative approach involving meaningful engagement with different stakeholders including indigenous population and vulnerable groups. Following primary stakeholders have been identified to comprehend the ownership details and general understanding about the project to achieve the Program Objective in view of AFD's requirements.

- HP State Disaster Management Authority
- Department of Environment, Science and Technology
- Department of Energy
- AGISAC-HIMCOSTE
- Central Water Commission (CWC)
- Civil Defense and Home Guard Department
- Himachal Pradesh Power Corporation Limited (HPPCL),
- Bhakra Beas Management Board (BBMB)
- Jal Shakti Vibhag (Department of Water Resource)
- Department of Forest
- Department of Tourism and Civil Aviation
- Department of Rural Development
- Public Works Department (Roads)
- Department of Fire
- District Disaster Management Authorities
- District Deputy Commissioner
- Department of Agriculture and Farmers Welfare
- Department of Horticulture
- State Inter-Agency Group Members
- District Inter-Agency Group Members
- Hospitals
- Schools
- Civil Society Organizations
- Private sector
- Panchayat & Panchayat Raj Institution members
- Women's organizations
- Community

The template for project specific Stakeholder Engagement Plan can be referred from WB Standard Template (Ref: **Table 23**) while detailed guidance is available on World Bank site<sup>16</sup>. In order to engage all these stakeholders, a number of stakeholder consultations were held during the Program preparation stage (Ref: **Error! Reference source not found.** and **Error! Reference source not found.**).

## 7.2 Grievance Redress Mechanism (GRM)

The Grievance Redress Mechanism (GRM) is an arrangement that provides a platform for project stakeholders/ project affected people (PAP)/ beneficiaries to register their feedback/grievance/ suggestions and concerns about project activities.

A Grievance Redress Mechanism (GRM) needs to be in place to address social, environmental, and/or any other project related grievances. The GRM needs to be developed in consultation with stakeholders. The public awareness campaign needs to be conducted to communicate the awareness of the Project and its grievance redress procedures during the project cycle. The campaign will ensure that all stakeholders/ PAP/ beneficiaries, in particular the poor, vulnerable, and others are made aware of grievance redress procedures and entitlements according to the project entitlement matrix<sup>17</sup>. A three tier GRM will be established under the Project Management Unit (PMU) that will include Gram Panchayat/ Urban Local Body (ULB), PIU and State Level. At each level, a Grievance Redress Cell (GRC) will be constituted. The composition and functioning of these GRCs would be as follows.

### Tier 1: Gram Panchayat/ ULB Level

It is proposed that the Project Affected Person (PAPs) will first register the grievances with the IAs located at the village/town. After receipt of grievance, the representative of the IAs can instantaneously solve it or can take it to the next level and initiate measures for redress. In case the aggrieved party is not satisfied with the proposed redress measures, it can always approach the state level redress cell or go straight to the Court of Law. The GRC at Gram Panchayat/ ULB level will be headed by the elected Pradhan of the Panchayat/ ULB Chairman. The Panchayet Secretary/ ULB Executive Officer will be the Convener. At this level the grievance should not be pending for more than 7 days. The Gram Panchayat/ ULB level GRC should meet once in a week to address all the pending grievances.

### Tier 2: PIU Level

Head of the administrative unit (e.g. district/ sub-division/ division as the case may be) will be the Chairman and the officer in-charge of the PIU will be the Convener of the PIU Level GRC. The redress of the grievance should not be pending at this level for more than 15 days. The PIU level GRC should meet twice in a month to address all the pending grievances.

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<sup>16</sup> <https://www.worldbank.org/en/projects-operations/environmental-and-social-framework/brief/environmental-and-social-framework-resources>

<sup>17</sup> Project entitlement matrix will be developed by the EA as per prevalent laws of the land and in consultation with the AFD

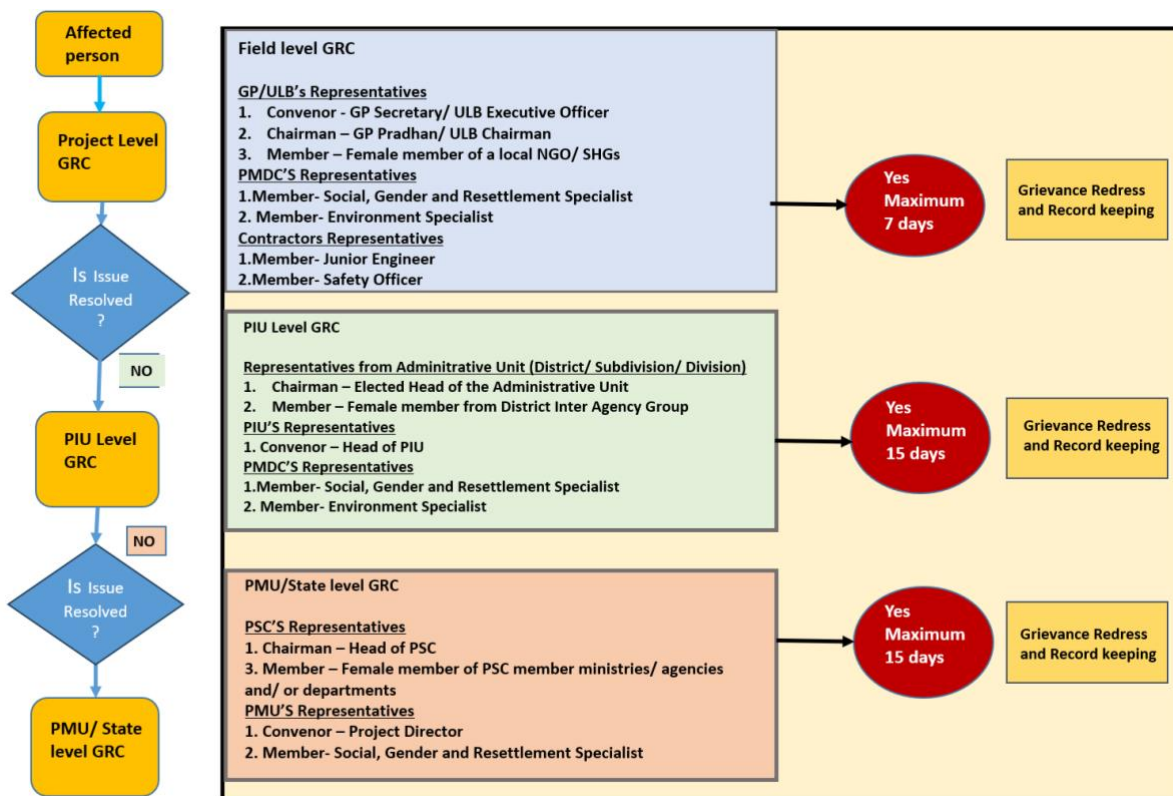
### Tier 3: State Level

The head of the Program Steering Committee (PSC) will be the Chairman of State level GRC while the Project Director will be its Convener. The redress of the grievance should not be pending at this level for more than 15 days. The State level GRC should meet twice in a month to clear all the pending grievances.

The total number and designation of Members of GRC at each level will be decided by the head of PSC in consultation with the Project Director at the time of constituting the GRCs at three levels. The membership will be as per the following principles and the number of non-Government representatives will be in proportion to Government representatives.

1. Representatives of participating Departments as reflected in PIU
2. Representative of the Revenue Department
3. Representative of Disaster Management Authority
4. Representatives of NGOs/CSOs including women
5. Representatives of Project Affected Beneficiaries/Project Affected Persons

The three-tier GRM is presented in **Figure 19**



**Figure 19: Three-tier Grievance Redress Mechanism**

### Scope of GRC

The GRCs will receive and redress all complaints and grievance that relate to the Project that are formally brought to the GRCs in writing only by the person and group of persons who have a grievance because of the project's adverse impact on him/her and them. The complaints/grievance could relate, among others, to: (1) access to project benefits such as financial assistance to house construction; (2) selection of site for cluster house relocation; (3) selection of sites of relocation of damaged

Government buildings and social infrastructure such as schools, health centers that require relocation;  
(4) payment of compensation and resettlement assistance in accordance with social impact mitigation and eligibility criteria as set out in accordance with Resettlement Policy.

#### **Processes of GRCs**

1. The GRCs will meet on a fixed day/date of every week or bi-monthly depending on the level, during the first year and this could be changed during the following years;
2. The GRCs will meet the following working day if the day/date fixed for the monthly meeting falls on a holiday
3. The GRCs will consider and redress all registered and acknowledged complaints/grievance received at least 15 days before the day/date of the meeting;
4. The GRCs will work out a time frame to redress grievance at each level if the complaint/grievance is not addressed in the first meeting;
5. The GRCs will acknowledge the receipt of complaints/grievances by registered letter within one week;
6. The GRCs will hold public meetings that would also include all those who have complained or who have a grievance expressed in writing in order to facilitate transparency and accountability;
7. The GRCs at the levels of Gram Panchayats/ULBs will fix a timeframe for appealing to the next level to seek grievance redress;
8. The GRC's decisions at the State level are not final and the complainants have the right to seek judicial redress if they are not satisfied with the final decision at the State level.
9. The grievances will be received in written form, as when they arrive and registered in the Grievance Register by the IA.
10. The procedures to redress grievances will be transparent involving all the members of the committee and the aggrieved party.
11. The decisions regarding Redressal will be communicated in writing to the aggrieved party within a week after arriving at the decision. The grievance redress process will be a continuous, transparent and participatory process that would be an integral part of the project's accountability and governance agenda. The GRC at each level will maintain the Grievance Registers. The GRC at each level will also keep a separate case file for each complainant/aggrieved person in which all complaint/grievance related documents will be kept. The PMU will also prepare periodic reports on the grievance redress on the basis of reports received from the three levels of GRCs.

## 8 Institutional Arrangement, Monitoring and Disclosure

The institutional arrangements for implementation and monitoring of the activities are critical for ensuring desired Program outcome. Disclosure of the processes, safeguard mechanisms, project progress and outcomes instill confidence in the stakeholders and prevent escalation of grievances. This section presents these processes as proposed for this Program.

### 8.1 Institutional Arrangement

Under Disaster Management Act, 2005, Himachal Pradesh constituted State Disaster Management Authority (SDMA). Disaster Management Cell (DMC) under Department of Revenue will act as the Executing Agency under the directions of HPSDMA. A Program Management Unit (PMU) will be established within DMC, which will monitor overall Program implementation, timely execution of Projects and fund flows. A Project Management Consultant (in this case a Program Management and Design Consultant i.e., PMDC) will be appointed to assist the PMU. Under the PMU there will be a two-stage implementation setup. Each Program IA (i.e., government department or institution shown in **Table 2**) will have a State-level Departmental Nodal Officer (SDNO).

Each IA will have a respective departmental Project Implementation Units (PIUs) at district level and or division or sub-division level, as the case may be. At district level DMC, under the directives of DDMA, will work as extended arms of the PMU and be responsible for monitoring Program implementation. In order to ensure implementation of ESMF for the Program and ESMP for each of the Project, a team of environmental, climate change, social and gender consultants will be appointed at PMU as well as PMDC. PMU and PMDC will be guided by the PSC and AFD. Further, to implement the ESMPs at the field level, an environmental, social and climate change committee (ES&CC) will be formed comprising of at least the following members:

- a. Chairman DDMA as Chairman of the Committee;
- b. Panchayat Pradhan / Municipality Chairman as Convenor;
- c. Female member of a local NGO/ SHGs as member; and
- d. Safeguard consultants from PMDC as Technical Expert.

The institutional arrangement for implementation of the ESMF/ ESMP is summarized below.

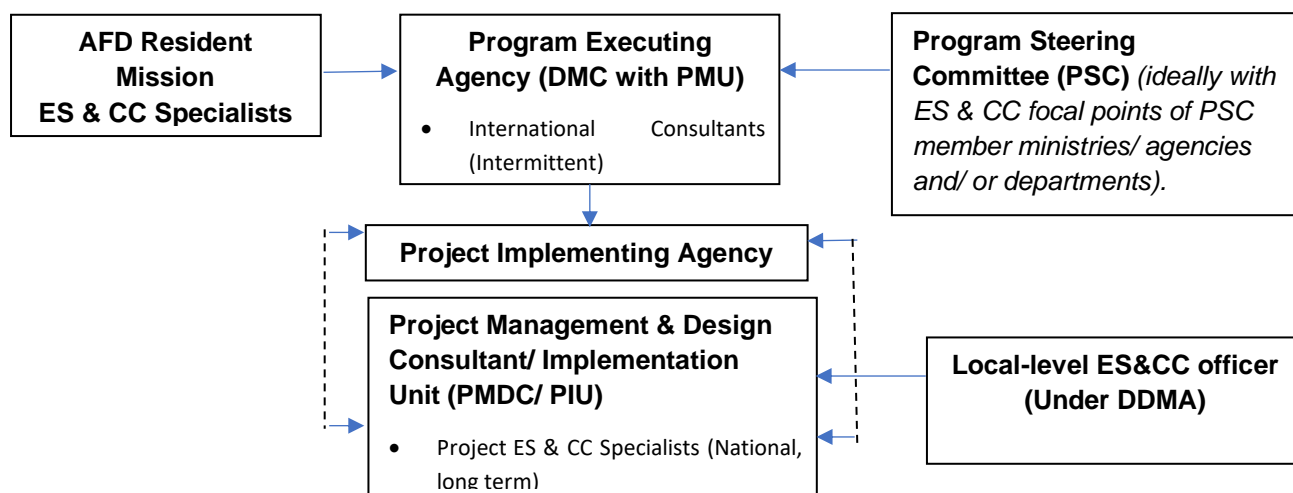


Figure 20: ESMF/ESMP implementation and monitoring arrangement

Additionally, for the purpose of verifying achievement of DLIs under the RBF Track, an Independent Verification Agency (IVA) would be appointed. The PMU will be responsible for coordinating with the IVA.

The PMU will be responsible for the following:

- a. Coordination with the IAs in approval of designs, assisting the PIUs in preparation of: DPRs, bidding documents, tendering schedules, etc.
- b. Appointment of technical assistance consultants and others safeguards management support to the implementing agencies.
- c. Quality Assurance through third party audits
- d. Maintaining MIS and Quarterly reporting.
- e. Progress reporting, financial management, monitoring and reporting.
- f. Ensuring compliance with agreed implementation procedures as per AFD requirements, etc.

The PIU will be responsible for:

- a. Preparation of Detailed Project Reports including technical designs, surveys and investigations etc.
- b. Tendering, bid evaluation, contract award, contract management etc.
- c. Financial Management and safeguards compliance.
- d. Progress and expense reporting to the PMU.
- e. Coordination with DDMA, etc.

### **8.1.1 Institutional Arrangement for Safeguard Monitoring**

The ESMF requires detailed supervision, monitoring and evaluation of the impact of the project on the environment and social aspects. In order to carry out this, PMU will have specific arrangements made at state and district level. This includes appointment of an Environmental Social and Climate Change Safeguard Expert (ES&CC) for the entire Program period at PMU level. The ES&CC Expert will be the focal person for ensuring safeguard compliance on E&S issues and Gender aspects as well as to help assist in addressing GRM.

Further, one each of Environment Specialist, Social and Gender Specialist and Climate Resilience Structure Specialist (Total 3 positions) will be at the PMDC. The ES&CC Expert at PMU with the help of PMDC experts will support the Departmental PIUs to implement the provisions of this ESMF. At the field level the one staff of the DDMA will be designated as ES&CC officer and will ensure execution of the same through the implementing agencies.

The key responsibilities of the ES&CC Expert include: (a) orientation and training of implementing agency teams and the contractors on environmental and social management, (b) leading/ providing oversight on the environment/social assessment process and its outputs, (d) review of monitoring reports submitted by the implementing agencies on ESMF/EMP implementation, (d) conducting regular visits to project sites to review ESMF compliance during project planning, design and execution, (e) providing guidance and inputs to the implementing agency teams on environment and

social management aspects, ensure integration of ESMF into the project design and contract documents; preparation of Terms of References for studies; reporting, documentation, monitoring and evaluation on environment and social aspects and overall coordination with the Implementing Agencies, PIUs and PMU.

In order to achieve the objectives of this ESMF and to ensure the safeguards compliance, an independent agency will be appointed for external monitoring of this ESMF. The concurrent internal environmental social monitoring will be done as part of the regular monitoring by PMDC and IAs. PMU would submit bi-annual reports to AFD on safeguards implementation.

## 8.2 Documentation and Reporting Requirement

**Program Operations Manual (POM):** A Program Operations Manual needs to be prepared, which would describe the essential administrative and management requirements to implement the Program on time, within budget, and in accordance with the policies and procedures of GoHP and AFD. The POM would include references to all available templates and instructions either through linkages to relevant Uniform Resource Locators (URLs) or directly incorporated within the Manual.

**Bi-Annual Environmental and Social Safeguard Monitoring Report:** Every six-months, safeguard monitoring reports will be issued by the PIUs to AFD through the PMU. These reports will include:

1. Status of project specific ESMP compliance;
2. Action plan for corrective and preventive actions;
3. Details of trainings conducted during last 6 months; and
4. Compliance status of various loan covenants.

A tentative table of content of the bi-annual E&S safeguard monitoring report is given in **Error! Reference source not found..**

**Quarterly Progress report (QPR):** It will be prepared for capturing details on E&S performance of the project. Details will include implementation status of the following:

1. Environmental and Social Commitment Plan (Program level)
2. Environmental and Social Management Plan (ESMP/ RAP and LMP for Type 3 and 4 projects)
3. Compliance to Environmental and Social statutory requirements (Refer Section 3.2)
4. Design modification or change in scope brought to AFD's notice
5. Assessment of changes and updating/addendum to ESIA/ESMP
6. Site observations on Contractor's performance on Environmental Social Health and Safety (ESHS) and other plans in ESMP
7. Summary of Stakeholder Engagement activities as stated in the ESMF.
8. Summary of Grievances received and redressed for each Project
9. Status of Environmental and Social staffing within PMU (including PMDC) and other implementation agencies
10. Capacity building /training activities undertaken for different project functionaries during the reporting period.
11. Corrective Actions and planned E&S activities for next quarter.

**Monthly Report:** Monthly Progress report (MPR) will be prepared by contractors explaining the compliance status of the Project with the ESMP in their scope. Details will include status on:

1. Contractor's ESMP implementation work plan and PMDC reviewed summary of implementation progress
2. Implementation of Contractor's ESMP and related plans.
3. Status of Compliance with E&S statutory requirements (including Consent to Establish (CTE), Consent to Operate (CTO) quarry permits (if applicable), labor licenses, insurance, etc.
4. Status on actions indicated in the Labor Management as well as labor camp management Procedure.
5. ESHS incidents and supervision report.
6. Usage of Personal Protective Equipment (PPE) among workers.
7. Supporting documents/ photographs etc. for adopted site safety measures.
8. Training conducted, and workers participation (submit reports with statistics of training and worker's participation).
9. Functioning of GRM relating to labor aspects, including summary details of Workers grievances.
10. Community grievances record (if any).
11. Temporary and permanent income loss if any
12. Impact on special vulnerable group if any in intervention areas.
13. Relocation and Rehabilitation of the impacted families if any.
14. Corrective Actions and planned E&S activities for next month.

**Incident / Accident Reporting:** Any undesirable incident or accident related to the Project which has, or is likely to have, a significant adverse effect on the environment, the affected communities, the public or workers has to be promptly notify to the PMU with sufficient details regarding that incident or accident, indicating immediate measures taken or that are planned to be taken to address it, and if any information provided by any contractor and supervising entity, as appropriate will be submitted. Subsequently, as per the Bank's request, a report on the incident or accident and propose any measures to prevent its recurrence will be prepared.

### 8.3 Training and Capacity Building

As part of institutional capacity building measures, the PMU needs to organize following training and capacity building activities for the Non-Governmental Organizations (NGOs), design engineers, contractors, and Gram Panchayat, block, sub-division and district-level officers besides staffs of IAs and PIUs involved in project implementation and operations. The training should be of cascade mode. All the trained staff will in turn conduct further trainings at district, block and village levels.

In view of the specialized training and capacity building envisaged under the ESMF of the project, it is necessary to identify nodal training institutes that will work closely with PMU for conceptualizing, designing, conducting and managing training programs on the ESMF. Few such specialized resources/institutions are:

- Selected Expert Staff of Participating Departments
- Indian Institute of Technology, Mandi
- HP State Pollution Control Board
- Other Identified Consultants

Typical modules would be: (i) introduction and sensitization on involuntary displacement and indigenous people policies and requirements resettlement framework (ii) review, update, and preparation of the resettlement plans (as required) upon the completion of detailed project design; (iii) improved coordination within nodal departments; (iv) monitoring and reporting system; (v) occupational and community health and safety; (vi) traffic and road safety; (vii) emergency preparedness and response (viii) project GRM etc.

The likely participants are key officials of the Project, PMU staff, PIUs and field level staffs, participating Departments/ IAs, Resource Persons, GP/ULB Representatives, Community Representatives, NGOs, CSOs, CBOs, Women Groups, etc. The training budget is included in the training component of the Program Management budget in the Program Expenditure Framework. The estimated budget for the E&S trainings is presented in table below:

**Table 24: Training Budget**

Sl. No.	Training	No. of Program*	Estimated Unit Cost (INR)	Total Cost (INR)
1	Orientation/ Learning training program	20	1,00,000	20,00,000
2	Training on ESMF and Mitigation Plan	10	2,00,000	20,00,000
3	Workshop (State)	10	2,00,000	20,00,000
4	Workshop (District)	24	1,00,000	24,00,000
5	Training/ Workshop on GAP	20	1,00,000	20,00,000
6	Provision for travelling allowances, other training expenses			50,00,000

	<b>Total</b>	<b>1,54,00,000</b>
--	--------------	--------------------

\* Typical batch size considered is 20 per training.

## 8.4 Monitoring and Evaluation

Considering the complex nature of the Program and the large number of IAs involved, it was agreed that Program management must rely extensively on the usage of IT-enabled tools. It was further agreed that a web-based Program Monitoring System (PMS) would be developed by the PMU by engaging a consultant in Year 1. The PMS will help in day-to-day monitoring of execution of Projects, Program funds management, and generate Program Management Information System (MIS) for different stakeholders. It should also allow upload of various kind of site activities along with date and time as evidence of real time monitoring.

## 8.5 ESMF Program Level Budget

The total ESMF program level budget for this HP DRR PBS Program is estimated at INR. 3.82 Cr (**Table 25**). The cost of implementation of the proposed mitigation measures are not included in this costing as the project wise technical details are not available at this level to estimate the same. The cost of mitigation measures (E&S) should be included in the respective project budget at the time of preparation of DPR and project specific ESMP budget preparation.

**Table 25: Administrative budget for ESMF activities**

Sl. No.	Activity	Basis of Costing	Total Cost (INR)	Source of Funding
1	Training and workshop	(Ref: <b>Table 24</b> )	1,54,00,000	Program management budget
2	Community mobilization cost	Break-up given below:	1,27,50,000	To be included in DPR BoQ of individual projects for ESMP implementation
A	<ul style="list-style-type: none"> <li>• Type 1 projects:</li> </ul>	<i>Not anticipated</i>		
B	<ul style="list-style-type: none"> <li>• Type 2 projects: for each project 2 knowledge dissemination workshop per District</li> <li>• + public information disclosure per district</li> </ul>	<i>No. of projects = 3 (Project No. 2.1, 2.2 and 2.3)                      Districts = 12                      2 Workshop for 50 persons = 50,000                      Public Information disclosure per district (e.g, miking, leaflets, etc.) = 50,000                      Subtotal = 3X12X (50,000 + 50,000) = 36,00,000</i>		

CIN 1149: Himachal Pradesh Disaster Risk Reduction and Preparedness Program  
Environment and Social Management Framework

Sl. No.	Activity	Basis of Costing	Total Cost (INR)	Source of Funding
C	<ul style="list-style-type: none"> <li>Type 3 projects: for each project 1 community engagement workshop per site</li> </ul>	<i>No. of sites = 75</i> <i>2 Workshop for 25 persons = 50,000</i> <i>Subtotal = 75X50,000 = 37,50,000</i>		
D	<ul style="list-style-type: none"> <li>Type 4 projects: for each project 2 knowledge dissemination workshops per District + public information disclosure per district</li> </ul>	<i>No. of projects = 3 (Project No. 3.1, 3.2 and 3.4)</i> <i>Districts = 12</i> <i>2 Workshop for 50 persons = 1,00,000</i> <i>Public Information disclosure per district (e.g, miking, leaflets, etc.) = 50,000</i> <i>Subtotal = 3X12X (1,00,000 + 50,000) = 54,00,000</i>		
3	Quarterly monitoring by independent consultant (assuming 5 years)	No. of Monitoring Reports = 20 Cost per Monitoring = 5,00,000 Subtotal = 20X5,00,000 = 1,00,00,000	1,00,00,000	To be included in DPR BoQ of individual projects for ESMP implementation
<b>Total</b>			<b>3,81,50,000</b>	

## 8.6 ESMP Budget Components

The detailed ESMP budget should be prepared along with the DPRs for individual projects. However, the following budget components are expected, especially for Type 3 projects which will involve large scale construction activities.

- Environmental monitoring during construction phase;
- Compliance to Griha V2019 4-STAR rating (at least) with certification;
- Waste management;
- Traffic management;
- Posters and signages;
- Medical check-ups and first-aid;
- Labor accommodation with proper amenities as per ILO standards;
- Community mobilization;
- Safety gears;
- Construction time EHS safeguards such as dust control, safety barriers, etc.;
- Compensatory plantation;
- Provision for EHS officer for onsite compliance; and
- Independent quarterly E&S implementation audit.

## 8.7 Disclosure

In order to ensure timely disclosure of all the safeguard documents, a website for this Program will be launched. This website will be managed by the PMU. All updated safeguard documents will be uploaded on this website for public view. Besides, this website, disclosure of these documents will also be made at various levels and means. The process is described below.

### **District Level**

PMU will arrange to disclose the final versions of the ESMF, ESIA / ESMP/ RAP, Resettlement Policy Framework and Entitlement Matrix, in Hindi and Pahari, in all the District Collectors Offices, PIUs, DDMA's and the local offices of the implementing agencies. These would be in place once the final versions are ready. When this document is updated, then the copies in the different locations should also be updated.

### **State Level**

PMU and the implementing agencies shall disclose this entire ESMF and all Safeguards related documents and mitigation plans, viz., ESIA / ESMP/ RAP, on their website. These need to be translated into local language (Hindi and Pahari) and placed on the website.

The Resettlement Policy Framework will be disclosed along with the entitlement framework, though this is a part of the ESMF, these documents shall be separately identified and disclosed in the PMU website. These two documents shall also be translated into Hindi and made available at the PMU's website.

### **Disclosure by AFD**

The AFD will disclose this ESMF and any future ESIA along with EMP/ RAP on its website for downloading and reference by interested parties.

## 9 Conclusion and Recommendation

This chapter includes the findings and recommendations emerging from the analysis presented in the earlier chapters. It can be inferred that, there are no potentially significant, adverse environmental and social impacts anticipated due to Program design and project location, provided exclusion criteria suggested in this ESMF are followed. During the implementation, mostly site-specific, short-term impact of low to moderate significance are anticipated due to general civil construction related activities. The impact can be readily mitigated by adopting suggested mitigation measures. The implementation of the projects will mostly result in positive impact to community. Although activity like creation of helipad may result in significant impact in terms of land acquisition or noise and vibration related impact during operation phase, impact significance can be reduced by adopting suitable mitigation measures. The successful implementation of SEP will improve Project understanding by the local community which will reduce social impacts of these Projects. Moreover, effective use of SEP will also enhance ownership of these Projects by local community. Regular monitoring and site supervision are important to maintain land slide mitigation sites and maintenance of bio-nursery. Institutional development, regular training/ workshop pertaining to successful implementation of E&S safeguard issue and well established GRM are key issues to achieve the Program objectives.

**The E&S impacts anticipated during implementation of proposed Projects are associated with physical infrastructure development and are evaluated in the ESMF.** Most of the impacts for civil construction projects are associated with site selection, which may be adequately mitigated by avoiding sites prone to natural hazards or considering prevalent topographical features.

**General construction related impacts are anticipated for most of the projects, which would be temporary in nature,** site-specific (barring few exceptions such as creation of helipad, establishment of TDU, fire stations, etc.) and assessed to be of low to moderate impact significance, which can be readily mitigated by adopting suggested mitigation measures. Site-specific Environmental Management Plan, Rehabilitation Action Plan, EHS plan, Waste Management Plan, Traffic Management Plan, Emergency Evacuation Plan, etc. need to be developed for construction phase compliance. The operation phase impacts for proposed projects are low, and largely positive and beneficial on the target population. However, Emergency Evacuation Plan, EHS Plan and Stakeholder Engagement Plan need to be developed for operation phase of the projects.

Annexure 1: Environmental Standards

National Ambient Air Quality Standards, 2009

[ भाग III—खण्ड 4 ]		भारत का ध्वज : असमय		3	
NATIONAL AMBIENT AIR QUALITY STANDARDS CENTRAL POLLUTION CONTROL BOARD NOTIFICATION New Delhi, the 18th November, 2009					
No. B-29016/20/90/PCI-L—In exercise of the powers conferred by Sub-section (2) (h) of section 16 of the Air (Prevention and Control of Pollution) Act, 1981 (Act No.14 of 1981), and in supersession of the Notification No(s). S.O. 384(E), dated 11 <sup>th</sup> April, 1994 and S.O. 935(E), dated 14 <sup>th</sup> October, 1998, the Central Pollution Control Board hereby notify the National Ambient Air Quality Standards with immediate effect, namely:-					
NATIONAL AMBIENT AIR QUALITY STANDARDS					
S. No.	Pollutant	Time Weighted Average	Concentration in Ambient Air		
			Industrial, Residential, Rural and Other Area	Ecologically Sensitive Area (notified by Central Government)	Methods of Measurement
(1)	(2)	(3)	(4)	(5)	(6)
1	Sulphur Dioxide (SO <sub>2</sub> ), µg/m <sup>3</sup>	Annual* 24 hours**	50 80	20 80	- Improved West and Gaeke - Ultraviolet fluorescence
2	Nitrogen Dioxide (NO <sub>2</sub> ), µg/m <sup>3</sup>	Annual* 24 hours**	40 80	30 80	- Modified Jacob & Hochheiser (Na-Arsenite) - Chemiluminescence
3	Particulate Matter (size less than 10µm) or PM <sub>10</sub> µg/m <sup>3</sup>	Annual* 24 hours**	60 100	60 100	- Gravimetric - TOEM - Beta attenuation
4	Particulate Matter (size less than 2.5µm) or PM <sub>2.5</sub> µg/m <sup>3</sup>	Annual* 24 hours**	40 60	40 60	- Gravimetric - TOEM - Beta attenuation
5	Ozone (O <sub>3</sub> ) µg/m <sup>3</sup>	8 hours** 1 hour**	100 180	100 180	- UV photometric - Chemiluminescence - Chemical Method
6	Lead (Pb) µg/m <sup>3</sup>	Annual* 24 hours**	0.50 1.0	0.50 1.0	- AAS /ICP method after sampling on EPM 2000 or equivalent filter paper - ED-XRF using Teflon filter
7	Carbon Monoxide (CO) mg/m <sup>3</sup>	8 hours** 1 hour**	02 04	02 04	- Non Dispersive Infra Red (NDIR) spectroscopy
8	Ammonia (NH <sub>3</sub> ) µg/m <sup>3</sup>	Annual* 24 hours**	100 400	100 400	- Chemiluminescence - Indophenol blue method

4 THE GAZETTE OF INDIA : EXTRAORDINARY [PART III—Sec. 4]					
(1)	(2)	(3)	(4)	(5)	(6)
9	Benzene (C <sub>6</sub> H <sub>6</sub> ) µg/m <sup>3</sup>	Annual*	05	05	- Gas chromatography based continuous analyzer - Adsorption and Desorption followed by GC analysis
10	Benzo[a]Pyrene (BaP) - particulate phase only, ng/m <sup>3</sup>	Annual*	01	01	- Solvent extraction followed by HPLC/GC analysis
11	Arsenic (As), ng/m <sup>3</sup>	Annual*	06	06	- AAS/ICP method after sampling on EPM 2000 or equivalent filter paper
12	Nickel (Ni), ng/m <sup>3</sup>	Annual*	20	20	- AAS/ICP method after sampling on EPM 2000 or equivalent filter paper

\* Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals.

\*\* 24 hourly or 08 hourly or 01 hourly monitored values, as applicable, shall be complied with 98% of the time in a year. 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

Note. — Whenever and wherever monitoring results on two consecutive days of monitoring exceed the limits specified above for the respective category, it shall be considered adequate reason to institute regular or continuous monitoring and further investigation.

SANT PRASAD GAUTAM, Chairman  
[ADVT-III/4/184/09/Exty.]

Note: The notifications on National Ambient Air Quality Standards were published by the Central Pollution Control Board in the Gazette of India, Extraordinary vide notification No(s). S.O. 384(E), dated 11<sup>th</sup> April, 1994 and S.O. 935(E), dated 14<sup>th</sup> October, 1998.

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and Published by the Controller of Publications, Delhi-110054.

**Emission standards for diesel generator sets**

CPCB emission regulations, Part IV, COINDS/26/1986-87

Para 95. Emission limits for new diesel engines (up to 800 W) for generator set application

The emission limits for new diesel engines up to 800 KW, for generator set applications shall be as follows:

Capacity of Diesel Engine	Date of Implementation	Emission Limits (g/kw-hr)				Smoke Limit (light absorption coefficient, m-1) (at full load)	Test Cycle	
		NO <sub>x</sub>	HC	CO	PM		Torque %	Weighting factors
1	2	3				4	5	
Up to 19 KW	1.7.2005	9.2	1.3	3.5	0.3	0.7	100 75	0.05 0.25
> 19 KW up to 176 KW	1.1.2004	9.2	1.3	5.0	0.5	0.7	50	0.30
	1.7.2004	9.2	1.3	3.5	0.3	0.7	25	0.30
> 176 KW up to 800 KW	1.11.2004	9.2	1.3	3.5	0.3	0.7	10	0.10

**Inland surface water categories (CPCB,1978)**

The Central Pollution Control Board has classified the inland Surface water into five categories A to E. On the basis of their designated best use and the desired class. The principal concern has been the end use to which man may put to water. The classification has been made in such a manner that with the degradation in quality, the water quality requirement becomes progressively lower from A to E. The CPCB classification of the inland surface water is give as under: -

Designated Best Use	Class of Water	Criteria
Drinking water Source without Conventional treatment but after disinfections.	A	1. Total coli form organisms MPN/100 ml shall be 50(max.) 2. pH between 6.5 to 8.5 3. Dissolved Oxygen (Min) 6 mg/l 4. BOD (max) 5 days < 2.00 mg/l
Outdoor bathing (Organized)	B	1. Total coli form organisms MPN/100 ml shall be 500 (max.) 2. Fecal Coli form MPN/100 mg. to be 2500 (max.) for Ganga Action Plan. 3. pH between 6.8 to 8.5. 4. Dissolved Oxygen (min) 4 mg/l 5. BOD (Max.) 5 days @ 3 mg/l
Drinking water with conventional treatment Followed by disinfections	C	1. Total coli form organisms MPN/100 ml shall be 5000 (max.) 2. pH between 6.8 to 3. Dissolved Oxygen (min) 4 mg/l 4. BOD (max.) 5 days @ 3 mg/l
Propagation of wild life Fisheries.	D	1. pH between 6.5 to 8.5 2. Dissolved Oxygen (min) 4 mg/l. 3. Free Ammonia (as N) (max)1.2mg/l.
Irrigation, industrial cooling, and Controlled disposal	E	1. pH between 6.0 and 8.5 2. Electrical conductivity less than 2250 micro mhos/cm, 3. Sodium Absorption Ratio less than 26, and Boron less than 2 mg/l

### **Noise Pollution (Regulation and Control) Rules, 2002 as amended up to 2010**

Rule 3. Ambient air quality standards with respect to noise for different areas/zones

(1) The ambient air quality standards with respect to noise for different areas/zones shall be such as specified below.

(2) The State government shall categorize the areas into industrial, commercial, residential, or silence areas/zones for the purpose of implementation of noise standards for different areas.

(5) An area comprising not less than 100 m around hospitals, educational institutions, and courts may be declared as silence area/zone for the purpose of these rules.

Rule 5. Restrictions on the use of loudspeakers/public address systems and sound-producing instruments

Rule 5A. Restrictions on the use of sound-emitting construction equipment

(3) Sound emitting-construction equipment shall not be used or operated during nighttime in residential areas and silence zones.

C) Noise limit for generator sets run with diesel

*Noise limit for generator sets run with diesel notified by Environment (Protection) second Amendment Rules vide GSR 371(E), dated 17 May 2002 at serial no.94 and its amendments vide GSR No 520(E) dated 1 July 2003; GSR 448(E), dated 12 July 2004; GSR 315(E) dated 16 May 2005; GSR 464(E) dated 7 August 2006; GSR 566(E) dated 29 August 2007 and GSR 752(E) dated 24 October 2008; G.S.R. 215 (E), dated 15 March, 2011 under the Environment (Protection) Act, 1986) is as follows:*

Para 50. Noise limit for diesel generator sets (up to 1000 KVA) manufactured on or after 1 January 2005

The maximum permissible sound pressure level for new diesel generator (DG) sets with rated capacity up to 1000 KVA, manufactured on or after 1 January 2005, shall be 75 dB(A) at 1 m from the enclosure surface. The diesel generator sets should be provided with integral acoustic enclosure at the manufacturing stage itself.

**Permissible Standard for Noise:**

<b>SCHEDULE</b>			
(see rule 3(1) and 4(1))			
Ambient Air Quality Standards in respect of Noise			
Area Code	Category of Area / Zone	Limits in dB(A) Leq*	
		Day Time	Night Time
(A)	Industrial area	75	70
(B)	Commercial area	65	55
(C)	Residential area	55	45
(D)	Silence Zone	50	40

Note:-

1. Day time shall mean from 6.00 a.m. to 10.00 p.m.
2. Night time shall mean from 10.00 p.m. to 6.00 a.m.
3. Silence zone is an area comprising not less than 100 metres around hospitals, educational institutions, courts, religious places or any other area which is declared as such by the competent authority
4. Mixed categories of areas may be declared as one of the four above mentioned categories by the competent authority.

\* dB(A) Leq denotes the time weighted average of the level of sound in decibels on scale A which is relatable to human hearing.

A “decibel” is a unit in which noise is measured.

“A”, in dB(A) Leq, denotes the frequency weighting in the measurement of noise and corresponds to frequency response characteristics of the human ear.

Leq: It is an energy mean of the noise level over a specified period.

(Source: *The Noise Pollution (regulation and control) rules, 2000 and its amendment in 2010 and 2012*)

Annexure 2: Trees under protected category in Himachal Pradesh

रजिस्ट्री सं० डी० एल०-33004/99

REGD. NO. D. L.-33004/99



# भारत का राजपत्र The Gazette of India

असाधारण

EXTRAORDINARY

भाग II—खण्ड 3—उप-खण्ड (ii)

PART II—Section 3—Sub-section (ii)

प्राधिकार से प्रकाशित

PUBLISHED BY AUTHORITY

सं. 481] नई दिल्ली, बुधवार, मार्च 19, 2009/फाल्गुन 28, 1930  
No. 481] NEW DELHI, THURSDAY, MARCH 19, 2009/PHALGUNA 28, 1930

पर्यावरण एवं वन मंत्रालय	(1)	(2)
अधिसूचना		वन्यजीव
नई दिल्ली, 17 मार्च, 2009		
क्र.आ. 783(अ).—वैव विविध अधिनियम, 2002 (2003 का 18) की प्रा 38 द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए, केंद्र सरकार, हिमाचल प्रदेश सरकार के परामर्श से एतद्वारा ऐसे पार्यों और वन्यजीव प्रजातियों को अधिसूचित करती है, जो विस्तृत के प्रकार पर हैं, जो कि नीचे दी गई तालिका के कॉलम (2) में सूचीबद्ध हिमाचल प्रदेश राज्य के संबंध में इस अधिसूचना के अनुबंध में विनिर्दिष्ट शर्तों के अधीन उनके संग्रह को प्रतिबंधित या विनियमित करती है, नाममात्र: :-	9.	सुरींग प्रोसिया चीटर्स, 1872
	10.	सर्वस दुवाउसेरी (कपुयिन, 1823)
	11.	कजा फाल्कोनेरी (कैमर)
	12.	सैन्कर ब्रह्मलोगाटर (होडाफन, 1839)
	13.	जिस बेंगलैसिस (मैलिन, 1788)
	14.	जिस टेन्टोरेन्दस मे, 1844
	15.	सकॉनिय काल्वस (स्कोपोली, 1786)
	16.	सेपेलम शीपेरियस (पन्नास, 1771)
	17.	सर्वस एलाफस हेडुली
	18.	कंप्रीकॉरिस सुप्रासिस

तालिफा	
क्र. सं.	प्रजातियों के नाम
(1)	(2)
	घादघ
1.	एकॉरिन्डम डीकोरिजम सैप
2.	एकॉरिन्डम हीटोकोरिजम काल एषम रोपले
3.	एकॉरिन्डम कथोलेसियम कैक, एक्स सैप
4.	एपीमोस्टफिस सुपर्वा रोपले एक्स बेंग
5.	जर्मिनम परकंरी दुन
6.	नडॉस्टफिस अंडीफोरीया डी सी
7.	डैक्टिलोरीजा हेटेबीर
8.	टैक्सस कालीविद्या

अनुबंध	
शर्त सं.	शर्तें
1.	किसी भी व्यक्ति द्वारा निम्नलिखित प्रजातियों को खंडन, रूपर अधिसूचित पार्य अथवा वन्यजीव प्रजातियों का जीवित अथवा मृत अवस्था में संग्रह नहीं किया जाएँ जब तक कि इस संबंध में संबंधित राज्य के वैवविधिता बोर्ड से अनुमोदन न लिया गया हो और यह अनुमोदन भारतीय वन अधिनियम, 1927 (1927 का 16) और वन्यजीव (सुरक्षा) अधिनियम, 1972 (1972 का 53) या संगत राज्य के वन और वन्यजीव विधानों के उपबंधों के अनुरूप भी हो; नाममात्र: :- (क) वैज्ञानिक अनुसंधान; (ख) हार्वोरियम और वैज्ञानिक और शैक्षिक संस्थाओं का संग्रहालय; (ग) प्रचार; और (घ) कोई अन्य वैज्ञानिक अन्वेषण।

(1)	(2)	(1)	(2)
2.	संबंधित अन्य जैवविविधता बोर्ड निर्मातांकृत अथवा कलंकित करेंगे :—	11.	<i>Capra falconeri</i> (Wagner)
(i)	समग्र जानवरों के लिए, अधिसूचित प्रजातियों के सभी पहलुओं का अध्ययन करना।	12.	<i>Moschus chrysogaster</i> (Hodgson, 1839)
(ii)	संरक्षण और स्वस्थ वन्य जंतु संरक्षण और पुनःस्थापन के प्रयोजनार्थ, अधिसूचित प्रजातियों का प्रवास; और	13.	<i>Oryx bengalensis</i> (Omelin, 1788)
(iii)	आवश्यक कार्यक्रम चलाना और उन विभाग के कार्यालयों, जैवविविधता प्रबंधन समितियों, परिरक्षण कार्यक्रमों और वन्यजंतुओं तथा जंगलवासियों को अधिसूचित प्रजातियों के संबंध में शैक्षिक समग्र उपलब्ध करना।	14.	<i>Oryx temacoetis</i> Gray, 1844
		15.	<i>Sarcopyga caesia</i> (Scopoli, 1786)
		16.	<i>Favosites gregarius</i> (Pallas, 1771)
		17.	<i>Corvus elaphus hangul</i>
		18.	<i>Capricornis sumatrensis</i>

[फ. सं. 28-12/2008-वी एस-III]

ए. के. गोवाल, संयुक्त सचिव

**MINISTRY OF ENVIRONMENT AND FORESTS  
NOTIFICATION**

New Delhi, the 17th March, 2009

S.O. 783(E).—In exercise of powers conferred by Section 38 of the Biological Diversity Act, 2002 (18 of 2002), the Central Government in consultation with the Government of Himachal Pradesh, hereby notifies the species of plants and animals which are on the verge of extinction, as listed in column (2) of the Table given below, and prohibit or regulate the collection thereof subject to the conditions specified in the Annexure to this notification, for the State of Himachal Pradesh, namely :—

Sl. No.	Name of the species
(1)	(2)
<b>Plants</b>	
1.	<i>Aconitum delavayanum</i> Stapf
2.	<i>Aconitum heterophyllum</i> Wall. ex Royle
3.	<i>Aconitum violaceum</i> Jacq. Ex Stapf
4.	<i>Eremontachya superba</i> Royle ex Benth
5.	<i>Aureinia parkeri</i> Dunn
6.	<i>Nardostachya grandiflora</i> DC.
7.	<i>Dactylorhiza heterogera</i>
8.	<i>Taxus wallichiana</i>
<b>Animals</b>	
9.	<i>Moschus griseus</i> Peters, 1872
10.	<i>Corvus sinuatus</i> (Cuvier, 1823)

Condition No.	Conditions
1.	No plant or animal species as notified above shall be collected in live or dead condition by any except, for purposes mentioned below, with the approval of the concerned State Biodiversity Board; and also in accordance with the provisions of the Indian Forest Act, 1927 (16 of 1927) and the Wild Life (Protection) Act, 1972 (53 of 1972) of the relevant State Forest and Wild Life Legislations, namely :—
(a)	Scientific research;
(b)	Herbarium and museum of scientific and academic institutions;
(c)	Propagation; and
(d)	Any other scientific investigation.
2.	The concerned State Biodiversity Board shall initiate or conduct :—
(i)	studies on all aspects of the notified species for holistic understanding;
(ii)	propagation of the notified species for the purpose of <i>in situ</i> and <i>ex situ</i> conservation and rehabilitation; and
(iii)	awareness programmes and provide educational materials on notified species for forest department personnel, Biodiversity Management Committees, ecotourism programmes, and forest dwellers and tribals.

[F. No. 28-12/2008-CS-III]

A. K. GOYAL, Jt. Secy.

(Authoritative English text of this Department Notification No. FFE-B-A(3)-5/2020, dated 12 February, 2021 as required under clause (3) of article 348 of the Constitution of India)

Government of Himachal Pradesh  
Department of Forests.

No. FFE-B-A(3)-5/2020 Dated Shimla-2, the 12, February, 2021.

**NOTIFICATION**

In exercise of powers conferred by sections 41 and 42 of the Indian Forest Act, 1927 (XVI of 1927), the Governor, Himachal Pradesh is pleased to make the following rules further to amend the Himachal Pradesh Forest Produce Transit (Land Route) Rules, 2013, as notified vide this Department Notification No. FFE-B-A(3)-2/2013, dated 26-11-2013 and published in the Rajpatra, Himachal Pradesh on 30<sup>th</sup> November, 2013, namely:-

1. **Short title.**— These rules may be called the Himachal Pradesh Forest Produce Transit (Land Routes) Amendment Rules, 2021.
2. **Amendment of Annexure-D.**—In Annexure D appended to the Himachal Pradesh Forest Produce Transit (Land Routes) Rules, 2013, for Schedule - I, the following shall be substituted, namely:—

**“Schedule-I**

[See rule 8 (1)]

Forest Produce obtained from the following plant species growing on private land shall be exempted from the requirement of Transit Pass:-

Sr. No.	Local Name of Species	Botanical Name of Species
1.	Kala Siris /Ohi/ Siris	<i>Albizia species</i>
2.	Safeda *	<i>Eucalyptus species</i>
3.	Poplar	<i>Populus deltoidis</i>
4.	Indian Willow/ Biuns	<i>Salix species</i>
5.	Bamboo culms/Lathi bans/Maggar/ Dharainch/ Bans	<i>Dendrocalamus strictus/ Dendrocalamus hamiltonii/ Bambusa nutans/ Bambusa bambusa</i>
6.	Kuth*	<i>Saussurea costus (=S.lappa) *</i>
7.	Kala Zira	<i>Bunium persianum</i>
8.	Paik/Koi/Kosh/Kunis/Kunish/Nyun	<i>Alnus nitida</i>
9.	Khirk/Khadki	1- <i>Celtis australis</i> 2- <i>Celtis tetrandea</i>

10.	Darak/Bakin	<i>Melia azedarach</i>
11.	Pagoora/ phagoora/ Tiamble/ timla/ tirmal/ anjiri/ cluster fig/ goolar	<i>Ficus species</i>
12.	Toon	<i>Toona ciliata</i>
13.	Teak/Sagun/Sagwan	<i>Tectona grandis</i>
14.	Arjun	<i>Terminalia arjuna</i>
15.	Semal/Shalmaltas	<i>Bombax ceiba</i>
16.	Bihul/Beul/Bhimal/Bhiunal/Dhaman	<i>Grewia species</i>
17.	Paza/Padam	<i>Prunus cerasus</i>
18.	Kamala /Raini/Rohan/Rohini/Sinduri	<i>Mallotus philippensis</i>
19.	Aam (Commercial/Hybrid/Improved variety)	<i>Mangifera indica</i>
20.	Rishtak/Ritha/Dode	<i>Sapindus mukorossi</i>

\*Export of Kuth (*Saussurea Costus/lappa*) will however be subject to fulfillment of requirements of the provisions contained in the Wild Life Protection Act, 1972.

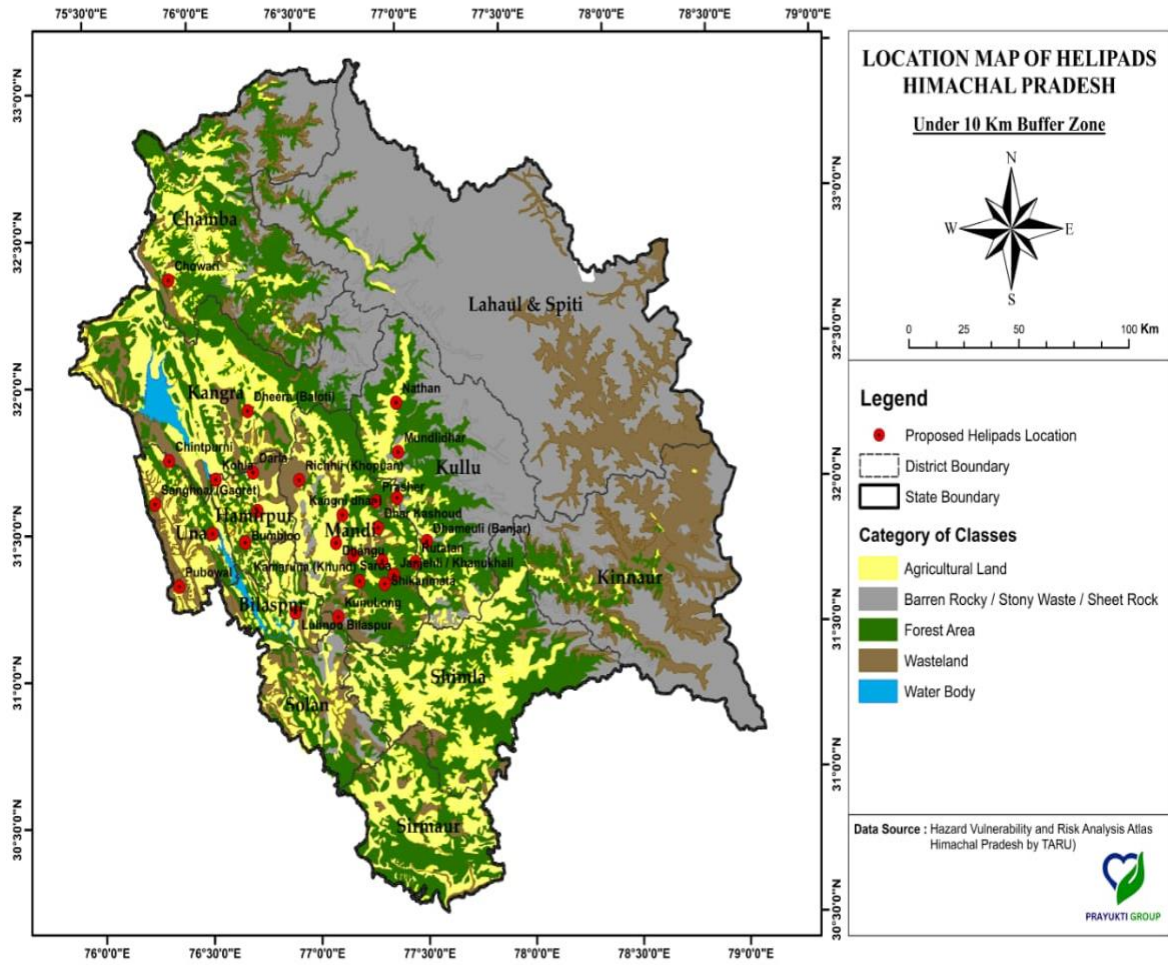
The removal and transportation of the forest produce obtained from plants species listed in this schedule and growing on private lands shall be in accordance with the following provisions:—

- (i) The landowner shall intimate in writing to the concerned Range Forest Officer through the local Forest Guard of his intent to harvest produce from plant species listed in this Schedule specifying there in the estimate of yield which is likely to result therefrom before starting the harvest.
- (ii) The Range Forest Officer may himself or through his representative inspect the land from which such harvesting is proposed and verify the proposed yield.
- (iii) Range Forest Officer shall issue a letter to the landowner giving details of forest produce obtained from private land.
- (iv) The landowner shall carry this letter during transportation of the verified forest produce."

By order,

R.D. Dhiman  
Addl. Chief Secretary (Forests) to the  
Government of Himachal Pradesh

**Annexure 3: Location map of proposed helipad sites in HP**



## Annexure 4: Environmental and Social Screening Checklist

### A. Environmental Screening

#### Part a: General Information

<b>1. Location of the project</b>	
• Name of Project	
• Name of the State	<b>Himachal Pradesh</b>
• District	
• Block	
• Village	
<b>2. Implementing Agency Details (project level)</b>	
• Name of the Department/Agency	
• Name of the designated contact person	
• Designation	
• Contact Number	
• E-mail Id	

#### Part b: Environment Baseline

Question	Yes	No	Details
<b>1. Is the project located in whole or part within a radius of 1 km from any of the following environmentally sensitive areas?</b>			
a. Biosphere Reserve			If yes, mention name and distance.
b. National Park			If yes, mention name and distance.
c. Wildlife/Bird Sanctuary			If yes, mention name and distance.
d. Game Reserve			If yes, mention name and distance.
e. Tiger Reserve/Elephant Reserve			If yes, mention name and distance.
f. Wetland			If yes, mention name and distance.
g. Natural Lake			If yes, mention name and distance.
h. Swamps/Mudflats			If yes, mention name and distance.
i. World Heritage Sites			If yes, mention name and distance.
j. Archaeological monuments/sites (under ASI's central/state list)			If yes, mention name and distance.
k. Reservoirs/Dams			If yes, mention name and distance.
<b>2. Is the project located in whole or part within a radius of 500 m from the following features?</b>			
a. Reserved/Protected Forest			If yes, mention name and distance
b. Migratory Route of Wild Animals/Birds			If yes, mention name and distance
c. Area with threatened/rare/endangered fauna (outside protected areas)			If yes, mention name and distance
d. Area with threatened/rare/endangered flora (outside protected areas)			If yes, mention name and distance
e. Habitat of migratory birds (outside protected areas)			If yes, mention name and distance
f. Historic Places (not listed under ASI – central or state list)			If yes, mention name and distance

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g. Regionally Important Religious Places			If yes, mention name and distance
h. Public Water Supply Areas from Rivers/Surface Water Bodies/ Ground Water Sources			If yes, mention name and distance
<b>3. Information related to project impacts:</b>			
<b>Will the construction, operation or decommissioning of this project cause changes to or have impacts on the following?</b>			
1. Land Use			If yes, give full details.
2. Water			If yes, give full details.
3. Air			If yes, give full details.
<b>Will the construction, operation or decommissioning of this project produce, cause or release any of the following?</b>			
4. Solid waste			If yes, give full details.
5. Noise/ vibration/ light/ heat energy/ electromagnetic radiation			If yes, give full details.
6. Accidents			If yes, give full details.
<b>Other</b>			
7. Are there any areas around the project location which are used by protected, important or sensitive species of fauna or flora e.g. for breeding, nesting, foraging, resting, overwintering, migration, which could be affected by the project?			If yes, give full details.
8. Any other impacts?			If yes, give full details.

**Part c: Transect Walk Map**

While filling in this data sheet, the implementing agency should hold a consultation with the local community through the Gram Panchayat in order to determine and sort out issues of land availability (including forest land), moderate any adverse social and environmental impacts and elicit necessary community participation in the Programme. For this purpose, the implementing agency should organize an informal 'Transect Walk' and prepare a map (Not To Scale) of this and attach the same to this data sheet. The following points should be borne in mind while preparing this map.

- The Transect walk shall be undertaken by the Officer filling in this data sheet, accompanied by the Sarpanch of the Panchayat/ Ward Member and other community members after adequate advance publicity. The local Forest official may also be associated if forest land is involved.
- During the Transect Walk, issues relating to land requirements for the embankment and its impact on landowners, encroachers, squatters, etc. need to be discussed with members of the local community present. Collect all land related revenue records, maps and gazettes for supporting the claims and attach to this report. To this check list attach a typical cross section of the structure at its widest and note the land required.
- Environmental impact on vegetation, land, soil and water etc. shall be identified and noted for resolution.
- During the walk, due opportunity shall be given to interested persons to put forward their points of view.
- At the end of the walk and after recording the issues that arose during the walk, the action taken/ proposed to resolve the issues be noted. This shall be recorded by the Secretary of the Panchayat and countersigned by the Sarpanch/ Ward Member. A copy of this document shall be attached to the data sheet.
- During or after (as convenient) the Transect Walk, a map (Not To Scale) with the location of buildings, the environmental features around the site, ownership of land need to be prepared. Identify all structures, viz., places of worship, schools, hospitals and other common property resources, forest land, etc. and locate on this Transect Walk Map.
- To this map attach some photographs showing and highlighting the most critical places.

Part d : Result/ Outcome of Environmental Screening Exercise		
1.	No EIA Required	
2.	EIA Required	
3.	Regulatory Clearance Required	If yes, mention type of clearance required.

## B. Social Screening

### Part a: Social Impacts Information

#### 1. Land Requirement for the project:

Details	Unit	Quantity	Classification/ Category	Present Usage and Users
Government Land	Acres			
Private Land	Acres			
Title Holders	Number			
Non-Titleholders – Encroachers	Number			
Non-Titleholders – Squatters	Number			

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Details	Unit	Quantity	Classification/ Category	Present Usage and Users
Various users of Govt. Land under various tenures	Number			
People losing livelihoods/ access due to loss of Govt. Lands project	Number			

2. Agricultural Land affected due to project:

Details	Unit	Quantity
Total Affected	Number	
Title Holders	Number	
Non-Titleholders – Encroachers	Number	
Non-Titleholders – Squatters	Number	
BPL Families losing Agricultural Land	Number	

3. Dwellings affected due to project:

Details	Unit	Quantity
Total Affected	Number	
Title Holders	Number	
Non-Titleholders – Encroachers	Number	
Non-Titleholders – Squatters	Number	
BPL Families losing Dwellings	Number	

4. Commercial properties affected due to project:

Details	Unit	Quantity
Total Affected	Number	
Title Holders	Number	
Non-Titleholders – Encroachers	Number	
Non-Titleholders – Squatters	Number	
BPL Families losing Commercial Properties	Number	

5. Common Property Resources Affected: (Please give each type by number)

Type	Unit	Quantity
Religious places	Number	
Educational facilities	Number	
Health facilities	Number	
Bus stops/ shelters	Number	
Community halls	Number	
Hand pumps	Number	
Tress	Number	
Etc.	Number	

S No	Items	Results
1.	Total no of HH affected due to proposed project activity (Single or multiple impacts)	
2.	Total no of vulnerable HH affected due to proposed project activity (Single or multiple impacts)	

Part b : Result/Outcome of Social Screening Exercise		
1.	No SA Required	
2.	SA Required	

### Annexure 5: AFD Group's Exclusion List

1. Any equipment, sector or service subject to economic sanctions issued by the United Nations, the European Union or France, without absolute or relative restriction regarding the amount;
2. Production or activity involving forced labor<sup>18</sup>, child labor<sup>19</sup> or trafficking in human beings<sup>20</sup>;
3. Illicit activities involving organs, tissues and products of the human body, or genetic engineering activities banned by the national bioethical standards of France<sup>21</sup> or of the host country, and by relevant applicable European or international standards<sup>22</sup>;
4. Trade, production, breeding or possession of animals, plants or any natural products in breach of the provisions of CITES<sup>23</sup>;
5. Fishing activity using a driftnet in excess of 2.5 km in length;
6. Research, purchase, promotion or multiplication of genetically modified seeds<sup>24</sup>;
7. Production, use or trade of hazardous materials (such as asbestos fibres) and all products (including chemical products, pharmaceuticals, pesticides/herbicides, ozone depleting substances<sup>25</sup> or any other hazardous product) the production or use of which is banned or which will be phased out in the regulations of destination countries or internationally;
8. Transboundary trade of wastes, except those consistent with the Basel Convention<sup>26</sup> and its underlying regulations;

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<sup>18</sup> "Forced labor" refers to any work or service performed involuntarily and exacted from an individual by threat of force or punishment as defined in the conventions of the International Labor Organization (ILO).

<sup>19</sup> Employees must be at least 14 years of age as defined in the ILO's Declaration on the Fundamental Principles and Rights at Work (C138 – Minimum Age Convention, Article 2), unless local laws require compulsory schooling or a minimum age for admission to employment or work. In such circumstances, the highest age requirement must be used.

<sup>20</sup> Council of Europe Convention on Action against Trafficking in Human Beings (2005); Directive 2011/36/EU.

<sup>21</sup> V. AR. 16 à 16-14 of the French Civil Code (mainly as set out in Law No. 94-653 of 29 July 1994 on the respect for the human body and Law No. 2004-800 of 6 August 2004 on bioethics).

<sup>22</sup> The Convention for the Protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine: Convention on Human Rights and Biomedicine (Oviedo, 04/04/1997); Council of Europe Convention against Trafficking in Human Organs (Saint-Jacques-de-Compostelle, 25/03/2015).

<sup>23</sup> CITES: Convention on International Trade in Endangered Species of Wild Fauna and Flora (Washington, 1973).

<sup>24</sup> Programming Act No. 2021-1031 of 4 August 2021 on inclusive development and combating global inequalities prohibits financing by AFD of activities involving the purchase, promotion or multiplication of genetically modified seeds (LPDSL – Cadre de partenariat global [Global Partnership Framework] Part II – B – b / - 3 - paragraph 6). AFD adds research activities to this (Territorial and Ecological Transition Strategy 2020-2024).

<sup>25</sup> Any chemical component which reacts with, and destroys, the stratospheric ozone layer leading to the formation of "holes" in this layer. The Montreal Protocol lists ozone depleting substances (ODS), their reduction targets and the deadlines for phasing them out.

<sup>26</sup> The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal is available at: [www.basel.int](http://www.basel.int)

9. Exploitation of diamond mines and marketing of diamonds in countries that have not adhered to the Kimberley Process;
10. Illicit trade or activities that facilitate the illicit traffic of cultural property<sup>27</sup>.
11. Disputed border territories.

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<sup>27</sup> Trade in cultural property is regulated by the Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property (1970).

**Annexure 6: Environmental Impact Effect Comparison Guide**

Effect	Area	Air	Water	Waste	Biodiversity	Resources	Regulation	Society
Catastrophic	Extending over a wide area 50 km <sup>2</sup> from site	Significant acute impact on the receptor(s) potentially leading to fatality. Significant deterioration of air quality on a national and regional level.	Regional or interstate contamination or depletion of potable groundwater. Regional or inter-state contamination of marine environment.	Significant uncontrolled generation, handling, storage or disposal of priority hazardous waste leading to catastrophic contamination of valued groundwater, soil and/or loss of non-renewable natural resources.	Significant effect on regionally important attributes of the ecological environment is observable or measurable over a wide area notified by National authorities	Significant damage to archaeological, cultural or natural resources regional/international importance.	Constant very high exceedance of statutory or prescribed limits (assessed not to be ALARP) Immediate intervention by third parties or governmental body	High profile community outrage/ repeated complaints
Major	Extending over 10 km <sup>2</sup> from site	Acute impact on the receptors. Significant deterioration of air quality on a national level.	Serious local contamination or depletion of potable groundwater. Serious local or considerable national contamination of marine environment.	Serious uncontrolled generation, handling, storage or disposal of hazardous waste leading to serious contamination of valued groundwater, soil and/or loss of non-renewable natural resources.	A serious effect on locally important attributes of the ecological environment is observable or measurable locally.	Serious damage to archaeological, cultural or natural resources of national importance.	Repeated exceedance of statutory or prescribed limits (assessed not to be ALARP) Significant alarm raised by third parties or governmental body with instruction to mitigate	Serious community concern and complaints.
Minor	Extending over 1 km <sup>2</sup> area.	Adverse deterioration of air quality on a local level. Strong odour and irritation caused by deterioration of air quality.	Considerable local contamination or depletion of potable groundwater. Considerable local contamination of marine environment.	Considerable uncontrolled generation, handling, storage or disposal of hazardous waste, or serious uncontrolled for non-haz-waste,	A considerable effect on attributes of the ecological environment is observable or measurable.	Considerable damage but reversible loss to archaeological, cultural or natural resources of	Frequent intermittent exceedance of statutory or prescribed limits (assessed not to be ALARP) Concern raised from third	Considerable community concern and potentially a single community complaint

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Effect	Area	Air	Water	Waste	Biodiversity	Resources	Regulation	Society
				leading to considerable land contamination putting valued groundwater at risk, and natural resources.		local importance.	parties or governmental body	
Slight	Extending up to 10,000 m <sup>2</sup> area.	Limited deterioration of air quality on a limited level. Some odour and irritation caused by deterioration of air quality	Limited degradation of potable groundwater quality or reduction of its volume Limited contamination of marine environment.	Limited uncontrolled generation, handling, storage or disposal of waste leading to limited loss of natural resources and/or land contamination without putting valued ground-water at risk.	A limited effect on significant attributes of the ecological environment is observable or measurable.	Limited impact on natural resources or damage any archaeological or cultural resources and sand dunes.	Few exceedances of statutory or prescribed limits but assessed to be ALARP No complaint from third parties or governmental body	Some community concern raised.

Note:

1. The above table provides a guide to assessing the potential effect of impact on the environment. The table is limited to the listed aspects and may not include all potential aspects of environmental impact. Others may need to be considered, e.g. noise, visual intrusion, etc.
2. The table does not consider cumulative effects or interactions, which may also be important in certain cases. Expert judgment will be necessary to ensure that impact severity classifications are properly allocated.

## **Annexure 7: Tentative Table of Content for Rehabilitation Action Plan.**

### **Executive Summary [Non-Technical Summary]**

An executive summary will be prepared to be used as a stand-alone document in a manner that can be accessible to non-technical readers both in English and Hindi/Pahari languages.

### **Chapter 1 – Introduction**

The introduction of the RAP will include presentation for the project objectives, the project components and a general description of the project and identification of the project impact area.

### **Chapter 2 – Approach and Methodology**

This chapter sheds the light on the objectives and scope of the RAP and the methodology and tools used in preparing the RAP. Tools include but are not limited to thematic maps, households and land use inventories, surveys and studies.

### **Chapter 3 – Policies, Regulations and Guidelines**

This chapter of the RAP include the various national and state land acquisition act and regulations as well as the World Bank ESS 5 on involuntary resettlement. It will also include a comparison between the Indian and the WB legislations and recommend some local measures to bridge these gaps.

### **Chapter 4 – Stakeholder Consultation and Identification of Social Impacts**

This chapter describes the various stakeholders, the potentially affected groups and the various social impacts and the mitigation arrangements to identify a project's adverse impacts and the populations that will be affected. This chapter will also describe the process of promoting consultation/participation of affected populations and stakeholders in resettlement preparation and planning and the plan for disseminating RAP information to affected populations and stakeholders.

### **Chapter 5 – Resettlement Action Plan**

- *Description and objectives:* This will include a socio-economic baseline including people who will be affected by the project and all adverse impacts on their livelihoods associated with the project's land acquisition. Negative impacts might include breakup of communities and social support networks; loss of dwellings, farm buildings, and other structures, loss of business; loss of access to public infrastructure or services; and reduced income resulting from these losses. This part also will describe the results of these impacts and the mechanisms used to minimize displacement during implementation.
- *PAPs inventory/census survey:* This part of chapter 5 involves the results of the conducted survey/inventory/census of the PAPs. It involves full profile about the families of the PAPs, size of the families, ages, occupation, their assets, ownerships, the impact that they will encounter, etc.
- *Eligibility criteria and entitlement policy matrix:* The RAP will establish and disclose the criteria by which affected people will be considered eligible for compensation and other resettlement assistance. This procedure should include provisions for consultations with affected persons, households, and community leaders, local authorities, and, as appropriate, NGOs. Eligible PAPs could be divided into 1) those who have formal legal rights to land or other affected assets and 2) those who do not have formal legal rights to land or other assets at the time of the census, but who have claim to such legal rights by virtue of occupation or use of those assets.

- *Organizational arrangements:* This section of the chapter describes the institution(s) responsible for delivery of each item/activity in the entitlement policy; implementation of the RAP and the various coordination activities. The section will also identify the agency that will coordinate all implementing agencies and investigate if it has the necessary mandate and resources.
- *Grievance redress mechanism:* Describes the step-by-step process for registering and addressing grievances and provide specific details regarding a cost-free process for registering complaints, response time, and communication modes. It also describes the mechanism for appeal, provisions for approaching civil courts, if other options fail.
- *Monitoring and evaluation:* This section describes the internal/performance monitoring process of the RAP. It defines key monitoring indicators derived from baseline survey, frequency of reporting and content for internal monitoring. It also defines methodology, key indicators and arrangements for external monitoring and the final external evaluation.
- *Timeline and Budget:* This part illustrates the chronological steps in implementation of the RAP with a brief explanation of each activity. It describes the linkage between resettlement implementation and initiation of civil works for each of the project components. It provides a clear statement of financial responsibility and authority as well as lists the sources of funds for resettlement and describes the flow of funds.

#### **Chapter 6 – Consultation with affected groups**

This Chapter presents all the consultation and participatory activities that have been carried out as part of the RAP preparation.

#### **Appendices:**

- List of project affected persons
- Summary of consultation
- Socio-economic household census survey questionnaire
- Socio-economic and census survey results
- Record of interagency/forum/consultation meetings (including place and date of the meeting and participants' details who attend the meeting)
- Legal framework that governs the project
- RAP team
- Consultation with stakeholders and PAPs
  - a. Consultation during the ESIA
  - b. Consultation during the RAP
  - c. Approvals needed for the project

## Annexure 8: List of meetings and field visits

### A. Meetings held

SI No	Date	Particulars
1	23-Sep-2022	Kick-off meeting (virtual)*
2	27-Sep-2022	HPSDMA Officials (virtual)
3	18-Oct-2022	Discussion on proposed field visits
4	31-Oct-2022	Stakeholder Consultation*
5	31-Oct-2022	HPSDMA
6	01-Nov-2022	HP University*
7	02-Nov-2022	Nodal Officer, World Bank HP PFM Capacity Building Program from FD
8	02-Nov-2022	Shimla DDMA team
9	03-Nov-2022	Finance Department (Budget and Ways & Means)
10	03-Nov-2022	Planning Department
11	15-Nov-2022	First Visit Debrief meeting with AFD, HPSDMA officials (virtual)*

### B. Field Visits

SI No	Date	Particulars
1	02-Nov-2022	Review of Documents & Transit for Rampur
2	03-Nov-2022	Meeting with the Assistant Commissioner to the Deputy Commissioner, Reckong Peo, Kinnaur
		Meeting the DDMA Coordinator*
		Meeting with the DIAG Convenor*
		Visit to Land Slide spot at Moorang, Kinnaur
		Visit to Duni village for Bio-Nursery of the Forest Department, Kinnaur
		Visit to Black Spot and Crash Barrier Site at Roghi village, Kinnaur
3	04-Nov-2022	Meeting with the villagers at Kalpa Village, Kinnaur*
		Meeting with the Safety Officer, Karcham Dam, Kinnaur
		Visit to the Land Slide Site and Early Warning Gazette installation site at Batseri Village, Kinnaur
		Meeting with the Gram Panchayat Pradhan, Batseri Gram Panchayat (GP), Kinnaur*
		Visit to Nigulsari Land Slide Site and Early Warning system
4	05-Nov-2022	Meeting with the DDMA Coordinator, Lahaul-Spiti*
		Visit to Land Slide, Rock Fall and Avalanche Sites (Sissu, Raling, Khansar, Phugtal, Dalang, Tandi, Rangbe, Tozing, Jispa, Darcha)
		Meeting with Mahila Mandal, Rangway Village, Lahaul-Spiti*
5	06-Nov-2022	Visit to DDMA, Lahaul-Spiti
		Meeting with Pradhan, Palchan Gram Panchayat, Kullu*
		Meeting with DIAG*
		Visit to Cloud Burst Site at Manikaran, Kullu
		Visit to Sarsari Dang Land Slide Site, Kullu
		Meeting with GP members and others
6	07-Nov-2022	Meeting with Additional District Magistrate (ADM), Kullu*
		Meeting with SDRF Personnel, Mandi*
		Meeting with TDU, Mandi*
		Visit to the proposed land for TDU, Mandi
7	08-Nov-2022	Visit to Katropi Land Slide Zone
		Meeting with the National Highways Authority of India (NHAI) personnel
8	09-Nov-2022	Meeting with the Coordinator, DDMA, Kangra*
		Visit to Civil Hospital, Jwalamukhi, Kangra
		Visit to Civil Hospital, Dehra, Kangra

**Note:** Minutes of Meetings for meetings marked with \* are available in Annexure 9. For other field visits, photographs are included.

## Annexure 9: Minutes of key meetings and field visits

A) Kick-off meeting (virtual) held on 23<sup>rd</sup> September 2022

### Participants:

- a. AFD team
- b. Director and Staff - HPSDMA
- c. Consultants' Team

The meeting started with a welcome address by the HPSDMA officials and an introduction from AFD representatives. Mr. Ashok Rao, Team Leader from MaGC, made a presentation covering the understanding of the scope of work, the deliverables and certain clarifications required.

### Key points discussed:

1. Timelines for Phase 1 and 2 – As per the ToR, the timelines for completion of phase 1 & 2 are four months. Considering the challenges of conducting field visits, the upcoming winter season and state elections, and multiple stakeholder interactions that would be needed, the Consultants sought to increase the timelines to at least six months. The AFD concurred that Program design was an elaborate, time-consuming activity and was open to the suggestion of the time extension. AFD also suggested that timelines for Phase 3 could be reduced from six months to four months to accommodate the extension of time in Phase 1 & 2. The team also conveyed that Program negotiations could begin once Phase 2 is complete.
2. The Task Team Leader (TTL) of the AFD informed that the pre-feasibility report need not be extensively relied upon since that was prepared with a Classical Funding approach i.e., IPF equivalent. Stakeholder consultations were limited during the preparation and the document may not adequately reflect HPSDMA expectations. The team needs to now examine Program Budget Support (PBS) with results-based financing component (equivalent of PforR).
3. The TTL emphasized that each deliverable be drafted in consultation with HPSDMA, Planning Department and Finance Department.
4. The TTL also informed that sub-components of funding were already identified in the pre-feasibility report and the Consultants' focus should be on program structuring, alignment with the State Disaster Management Plans and strategic priorities rather than on technical detailing of each project.
5. Director, HPSDMA strongly felt that it is important to come up with a comprehensive Program Document. For this, he suggested that the Consultant should undertake extensive field visits. Considering the climatic conditions of Himachal Pradesh, he advised the Consultant team to complete majority of the field visits in the months of October and November 2022. Although HP is heading for elections in the month of November/December 2022, he assured that all arrangements and permissions for the visit, including the availability of the Officers, would be ensured.

6. Director, HPSDMA emphasized the importance of consultations with all concerned stakeholders. HPSDMA and the AFD were appreciative of the idea of conducting periodic workshops for discussion and brainstorming.
7. Mr. Vivek Sharma was identified as the Single Point of Contact for this project. He would share relevant documents with the Consultants.
8. Consultants are planning to undertake the first round of field visits from 17<sup>th</sup> to 22<sup>nd</sup> Oct 2022. The details would be worked out with HPSDMA in the coming days.
9. Consultants would release a first set of data requirements shortly.
10. The meeting ended with a round of thanks from all the parties.

B) Consultative meeting with stakeholder departments to discuss Program components and readiness on 31<sup>st</sup> October 2022

**Organized by:** Director-cum-Special Secretary (Rev-DM) and staff, HPSDMA

**Attendees:** HPSDMA, Stakeholder departments, MaGC (AFD Consultants)

**Key points discussed:**

- Welcome by Director, HPSDMA, and self-Introduction by all attendees
- MaGC gave a short brief of the objectives of the consultancy assignment and the expectations from the meeting.
- Ms. Garima Singh from HPSDMA, gave an overview of the ongoing PDNA exercise as per the order of Government of India. She also mentioned that a separate project is being discussed with the World Bank for earthquake protection.
- Dr. Randhawa made a presentation on earthquake scenarios of Kullu district and said micro level preparations are important rather than interventions at the regional level (earlier work done by TARU). He emphasized on integration and convergence of the plans at different levels.
- Status of the Program Components mentioned in AFD's Pre-appraisal Mission Aide Memoire was discussed.
- Climate change vulnerability is prepared for the Sutlej River basin up to GP level. It was mentioned that there are 5 river basins in HP and similar exercise was conducted for Beas also.
- There is an exercise on impact of Climate Change flow pattern in association with IISc Bangalore
- Strengthening the Department of Science and Technology (DEST) for knowledge production, which the Director said would be the State Centre on Climate Change and DEST will be the nodal agency
- On sub component 2.3, Early Warning System (EWS) is placed on all the dams.



- On sub component 2.6, PCCF informed that there is existing forest fire alert system for the whole country from Forest Services of India. However, he feels village level institutions should be mobilized for fire extinguishing in an effective manner. He also emphasized that some mechanisms should be developed for the Gram Panchayat (GP) level representatives to shoulder responsibilities. He also informed that action plans were developed for 2 districts - Shimla and Kangra which could be replicated in other districts.
- Deputy superintendent, SDRF on sub-component 2.8 informed that they have got 35 bigas (approx. 12 acres) of land. Total strength in state 326.
- Sub-component 2.9 – PWD informed that 33 helipads are under construction by them. 51 locations are identified in unserved areas. However, it is important to discuss with civil aviation and tourism departments.
- Sub-component 2.10 – Zonation based on DRR needs to be done. SIRD and HPSDMA are responsible to identify on equipping the GPs.
- Sub-component 3.1 – 700 critical areas were identified; some DPRs for critical areas were developed by the State center on Climate Change; Cliff areas to be identified; needs to be prioritized based on potential areas
- 380 Black spots were identified and rectified.
- The stakeholder meeting was followed by a meeting between the Consultants and the Director to discuss the Components under HPSDMA and to discuss field visit plan.

**Key action points:**

1. For Components for which it is the implementing agency, HPSDMA to work out Project details and costing
2. For other Components, HPSDMA to work with respective departments/agencies for prioritizing projects and detailing and costing
3. For the above purpose, respective departments/agencies to provide documentation to HPSDMA on project plans, concept notes, key requirements and costing, and DPRs where available.
4. MaGC team to undertake field visits to review the identified projects and provide their technical inputs
5. MaGC team to meet other stakeholders like Planning, Finance, Treasuries to discussing Program structuring options

C) Program Study Visit Debrief on 15<sup>th</sup> November 2022

**Participants:**

- French Agency for Development (AFD)
- Officials from Himachal Pradesh State Disaster Management Authority (HPSDMA)
- Consultants' Team from MaGC and Prayukti International

Mr. Ashok Rao, Team Leader from MaGC, welcomed all the participants and briefed about the outcome of the Field Visits conducted by the Consultants in October-November 2022 through a presentation.

**Key Points raised/discussed:**

I. from MaGC

1. The presentation included an overview of the meetings held with various agencies/departments during the field visits and key observations noticed and they include:
  - i. Level of preparedness under each component identified in the program
  - ii. Better co-ordination with the Line Departments
  - iii. Strengthening of Human Resources at both HPSDMA and DDMA
  - iv. Non preparation of DPRs for some of the projects identified under the Program
  - v. Lack of ToRs, policy documents and guidelines
2. Mr. Ashok Rao also highlighted immediate next steps and key concerns that the Consultants noticed.

The immediate next steps include:

- i. Submission of Inception report by end of November 2022
- ii. Closely work with HPSDMA for collection and review of remaining documents
- iii. Classify the program components as per the preparedness
- iv. Conduct Stakeholder workshop in December to discuss and finalize the list of projects

The Key concerns include:

- i. Common understanding on definition and level of preparedness of proposed projects
- ii. Technical/Financial support to HPSDMA for getting DPRs ready
- iii. Fiduciary aspects dependent on finalizing the Projects list and IAs
- iv. Timelines for Program study and Program launch

II. from AFD

1. Ms. Jyoti Vijayan from AFD congratulated the MaGC team for the successful field visits undertaken.
2. Ms. Jyoti Vijayan sought a response on what significant works are pending under each program component.
3. She sought a response from the HPSDMA team on the action plan for increasing the capacities at the HPSDMA and DDMA offices as the strengthening of HPSDMA and DDMA is imperative for the successful implementation of the project.
4. Ms. Jyoti asked the consultants to comprehensively elaborate on the disbursement process and funding channels that can be used for funding the Program components.
5. She also informed that AFD would not be able to take up any projects that do not have a DPR study.
6. She informed that AFD could provide assistance on study of E&S and Gender related aspects.
7. She also informed that technical assistance on preparing the DPR for projects identified can be considered. Further, she mentioned that the same can be finalized during the Consultative workshop planned in December 2022.

III. From HPSDMA

8. Director-HPSDMA expressed happiness on the field visits conducted by MaGC and congratulated them.
9. Director-HPSDMA informed the participants that the strengthening of the HPSDMA is underway and State Executive Committee (SEC) has approved 14 posts for the PMU (HPSDMA office). The advertisement for the recruitment would be circulated after 10<sup>th</sup> December 2022. He also informed that hiring these 14 resources can also be from the UNDP and similar agencies.
10. He also informed that four posts for each of the 12 DDMA (also would act as PIUs) i.e., 48 posts in all, would be created. Necessary approvals for the same would be obtained within one month from the date of lifting the Model Code of Conduct (08<sup>th</sup> of December). Out of these, 24 posts can be filled by the existing resources at each DDMA and the remaining 24 (2 posts for each DDMA), one post will be for Accounts and one post would be for Disaster Expert will be recruited on Outsourcing basis. The timelines for sourcing the resources on Outsourcing Model would be before end of January 2023.
11. Out of the 34 notified posts in HPSDMA, 10 posts have been filled and 24 posts have been advertised by the HP Service Commission and the process of recruitment to these posts will be completed within 2-3 months.
12. HPSDMA Consultant informed that they would share all the documents that they are working on or expecting from the concerned departments as soon as they complete it or receive it.

The meeting ended with a thanking note from Mr. Sudesh Kumar Mokhta, Director-cum-Special Secretary (Rev DM) who placed on record gratitude to all the participants for their active participation.

D) Field visits

<b>1. Meeting at HPIDM and Site Visit of the proposed land for the HPIDM</b>	
Date: 01-Nov-2022	Venue: Kalpa Village, Kinnaur
<b>Participants</b>	<ol style="list-style-type: none"> <li>1. Dr Mahesh Sharma, Faculty, Civil Engineering Dept., HPU</li> <li>2. Dr Seema Chowdhury, Faculty, Geography Dept., HPU</li> <li>3. Dr Ramlal, Faculty, Geography Dept., HPU</li> <li>4. Dr Garima Sharma, Capacity Building &amp; Documentation Coordinator, HPSDMA</li> <li>5. Mr Praveen Bharwadwaj, Disaster Management Specialist, HPSDMA</li> <li>6. Dr Biplab Ghosh, Climate Change Specialist</li> <li>7. Mr Bipradip Das, GIS Expert</li> <li>8. Dr Aniruddha Dey, Social Development Expert</li> </ol>
<b>Key Insights from the Meeting</b>	
a.	It was noted that the Disaster Study Cell (DSC) was formed with the order of the then Honourable Governor of Himachal Pradesh in August 2021
b.	The DSC has four Core Team members with Dr. BR Thakur as the Chairperson, who is also the Chairperson of Geography Department of Himachal Pradesh University (HPU).
c.	Initially there were four departments like Civil Engineering, Biological Sciences, Geography and Environmental Sciences involved with the DSC.
d.	The Vice Chancellor (VC) of the HPU took initiative in the allocation of land for making a State-of-the-Art premier institute for Disaster Risk Reduction and Capacity Building in the field of Disaster Management for HP which is a highly vulnerable state. Towards this, 1.25 acres of land of which 80% are built up area and 20% slope, inside the HPU campus has already been earmarked. After discussion with the Himachal Pradesh State Disaster Management Authority (HPSDMA), it was thought of converting the DSC to State Institute for Disaster Management (SIDM).
e.	After preliminary discussions the DSC team undertook serious measures like consulting with leading disaster management agencies about their functioning and management. Finally, they decided to follow the Gujarat Institute of Disaster Management.
f.	A presentation has also been prepared by the DSC team and presented to the AFD team during their visit. With a vision of making this a State-of-the-Art premier institute for disaster risk reduction the name was changed to Himachal Pradesh Institute of Disaster Management (HPIDM).
g.	Dr Mahesh Sharma, Faculty Civil Dept. HPU, made an Audio-Visual presentation to the Consultant Team.



Meeting in Himachal Pradesh university on 1<sup>st</sup> November 2022 in Shimla regarding HPIDM

<b>2. Meeting the DDMA Coordinator</b>	
Date: 03-Nov-2022	Venue: DDMA Office, at Reckong Peo
<b>Participants</b>	<ol style="list-style-type: none"> <li>1. Mr. Narender Kaith, DDMA Kinnaur</li> <li>2. Dr. Biplab Ghosh, Climate Change Specialist</li> <li>3. Mr. Bipradip Das, GIS Expert</li> <li>4. Dr. Aniruddha Dey, Social Development Expert</li> </ol>
<b>Key Insights from the Meeting</b>	
a. Risks are glacier lakes, earthquake, landslide, cloud burst, flash flood	
b. Trainings were given to 1000 Youth volunteers from panchayats	
c. Trainings were given to 500 masons on earthquake resistant constructions	
d. School safety and life line hospital programs on retrofitting building is underway	
e. It was recommended that only certified masons can be involved in the construction	
f. It was noted that there was no cabins or storeroom in the DDMA Office	



Meeting with the Assistant Commissioner to the Deputy Commissioner, Reckong Peo, Kinnaur on 3<sup>rd</sup> November

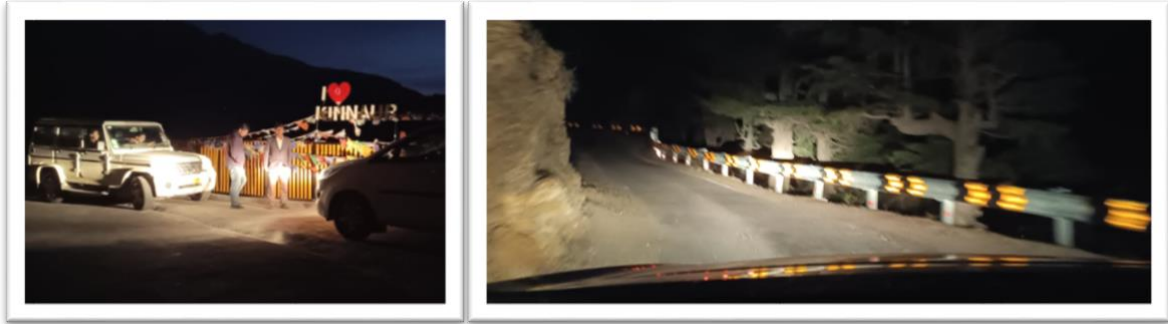
<b>3. Meeting with the DIAG Convenor, Kinnaur</b>	
Date: 03-Nov-2022	Venue: DDMA Office, at Reckong Peo
<b>Participants</b>	<ol style="list-style-type: none"> <li>1. Mr Hishey Negi, Convenor of the District Inter Agency Group (DIAG), KAIZEN,</li> <li>2. Mr Bipradip Das, GIS Expert</li> <li>3. Dr Aniruddha Dey, Social Development Expert</li> </ol>
<b>Key Insights raised by the Convenor during the Meeting</b>	
a. The Convenor noted that there were only verbal commitments by the GoHP but at the ground level much needs to be done.	
b. It was felt that it was always better to conceptualise models first and after the success implementation and analysing the pros & cons the models could be showcased and replicated. Some of the key risks highlighted were a) Land Slide, b) Fire from cooking in traditional village stoves (which could be risky for the women engaged in cooking as the flame comes outside and fire sparks can burn the wooden interiors, neighbour's houses) especially during winter when people use fire places, c) Cloud Burst and d) Earth Quake.	
c. Latest fire incidents took place in Purbani Kannam village in Oct-Nov 2021. In September 2022 there were cloud bursts at three places as Shalkhar village, Leo village and Chhangu. As far as Earth Quake was concerned the area comes under EQ Zone V and in 1978 Leo was the epicentre of the earth quake.	
d. For imparting trainings there should be some clarity on the part of the executors viz., who will be trained, by whom, on what subject matter, etc. Modules should be prepared and circulated to the selected Trainees. Moreover, as it is said that <b>Community is the First Responder</b> and hence Community should be kept in mind when Training of Trainers (ToTs) are conducted and providing handholding support for the selected community members, including the Panchayats.	
e. There should be proper strategies for conducting refresher trainings too. Considering the fact that people of Kinnaur district effectively get only 6-7 working months.	
f. It was emphasised that despite Government initiatives, which were inadequate in most of the times, the NGOs need to receive financial support based on their deliverables with targets. E.g., fund can be released after completion of phase one, then after completion of phase two, etc.	
g. Model Schools should be identified for school safety programs, especially for the structural components.	
h. During emergencies the Quick Response Team, ITDP and Home Guards are assigned the task of rescuing people. But the community, the first responders, neither are capacitated nor equipped. The first responders are the Gram Panchayats and they can mobilise the Yuvak Mandals and Mahila Mandals. So, sincere efforts are needed to include them in the capacity building programs.	
i. First Aid trainings are not done in proper manner. Selection of trainees and selection of trainers should be given importance. The objectives should be made clear first. One-day training on First Aid, Search & Rescue is not enough. It would not be possible for the trainees to pick up the required inputs. Further, refresher trainings should also be in place.	
j. The women in the community should be properly trained. Being a tribal district, culturally male folk are easy going and most of the household as well as outside works are done by the women folk and women take things more seriously and their accountability is more than their male counterpart.	
k. He said " <b>Silent Migration in the Border Villages</b> " is a slow onset disaster. People are compelled to shift to other places for better education, health and other amenities. Even to buy paints people have to go to other areas as markets are also not good. For a routine USG a pregnant woman has to move to Rampur, travelling for 5-7 hours. So definitely those who can afford, settle in big cities. As a result, slowly there are emptiness in the border villages and this becomes a serious threat from being attacked by China.	
l. Since Communication systems have improved these days services like USG for pregnant ladies should be provided closer to their homes.	

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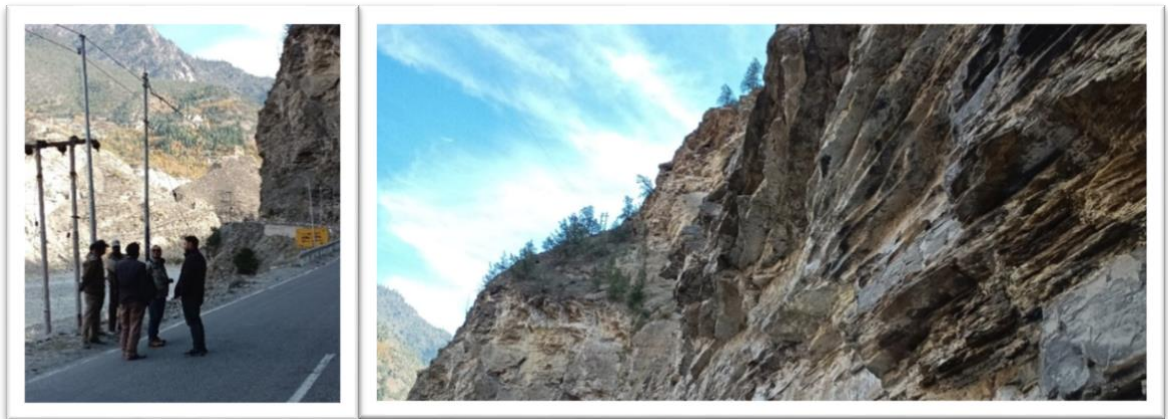
m.	An example of Nigulsari bus accident due to land slide in June 2021 was discussed. Response time was more because the response team from outside the area couldn't identify where the bus fell. Moreover, by the time they reached for rescue operations, it was late. Instead, the locals could have been engaged or strategies can be developed to equip the locals for such operations.
n.	In the shelter camps women are worst sufferers as the shelters are mainly at school/government buildings without having adequate hygiene facilities.
o.	Compensation amount for partially damaged and fully damaged houses were inadequate and some real time assessment needs to be conducted with the help of the assessors and the same should be incorporated in the policy document.
p.	Regarding crop loss, the compensation amount is paid on sympathetic grounds. Like, for one bigha (0.33 decimal) apple orchard if damaged due to rain or snow fall the farmer is entitled to receive Rs 752/- per bigha, while average production from approximately 20 apple trees per bigha will be Rs 5,00,000/- per season (Average Rs 25,000 per tree). However, for other agricultural produces like potatoes, peas, pulses etc. if damaged for similar reasons, the farmers would get the same amount, i.e., Rs 752/- per bigha. This according to him needs to be changed. May be the government should initiate a consultative process involving government departments as well as non-government agencies.
q.	Sources of drinking water for people are the springs and when snow starts melting. For filtration there were filter beds under Jal Shakti Vibhag, but those are not working properly and maintenance was very poor.
r.	Suggestions for Air Ambulances for the tribal villages situated at high altitudes were also made.
s.	Tourism was the second largest livelihood option and there was an increase in tourism activities these days. He said government needs to think about proper car parking, training to the cab drivers on hill driving, overtaking, honking and using dipper and also to think about uninterrupted power supply.
t.	The people of the area are not well educated and trained on tourism, rather it gives benefits hence many people even without having basic knowledge have started earning through this trade. People's hygiene sense is also very poor. Government should think about training people on WASH related issues.
u.	Hydal projects are no more required as people feel that is the key for water scarcity and landslides.



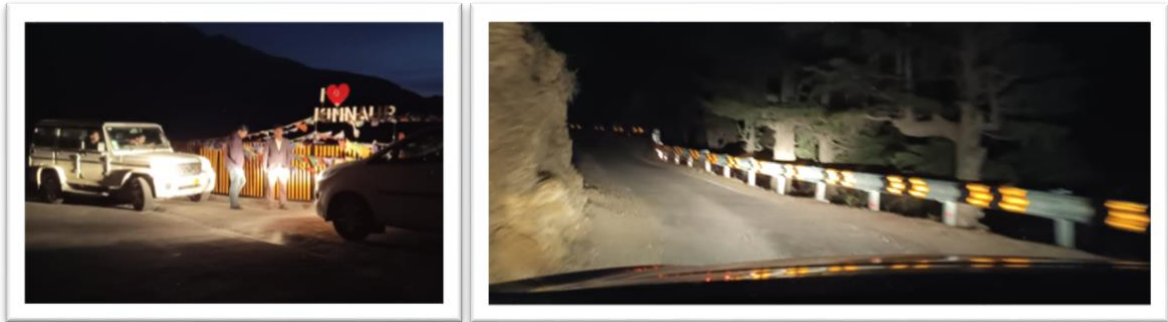
Meeting the DDMA Coordinator and the DIAG Convenor at DDMA office, Reckong Peo, Kinnaur on 3rd November



Visit to Black Spot and Crash Barrier Site at Roghi village, Kinnaur on 3rd November



Visit to Land Slide spot at Moorang, Kinnaur on 3rd November



Visit to Black Spot and Crash Barrier Site at Roghi village, Kinnaur on 3rd November



Visit to Land Slide spot at Moorang, Kinnaur on 3rd November

<b>4. Meeting with the villagers at Kalpa Village, Kinnaur</b>	
Date: 03-Nov-2022	Venue: Kalpa Village, Kinnaur
<b>Participants of the Meeting</b>	
<ol style="list-style-type: none"> <li>1. Mr Aman Ahuja</li> <li>2. Bharat Bhusan</li> <li>3. Narender Negi</li> <li>4. Sam Saran Negi</li> <li>5. Jitender Kumar</li> <li>6. Dr Biplab Ghosh, Climate Change Specialist</li> <li>7. Mr Bipradip Das, GIS Expert</li> <li>8. Dr Aniruddha Dey, Social Development</li> </ol>	
<b>Key Insights from the Meeting</b>	
<ol style="list-style-type: none"> <li>a. People know about DDMA, but they don't have confidence that informing them would yield any result. Hence most of the people call the Police.</li> <li>b. The Helpline number 1070 which is not known to people and they know 100 and 101.</li> <li>c. There is no Emergency Coordination Centre (EOC) in DDMA hence if people want any information during or after an emergency, they feel comfortable in getting in touch with police.</li> <li>d. In Spiti there is no risk of cloud formation and cloud burst, and it was citrus clouds floating around the sky. But in last few years GoHP has promoted apple orchards (now in Spiti only there are more than one lakh apple trees) on the vacant lands and mostly on the river banks. Senior people found out a correlation between the growth of apple orchards and cloud bursts. According to them it's because of water cycle. Cloud formation has taken place and results maximum precipitation at one place.</li> <li>e. In fact, one apple tree needs approximately 400 litres of water at one go, and from April to November almost 20 times the apple trees need to be irrigated (400 litres x 20 times for 25 trees for one bigha/ 33 decimal orchard). Now the people who are more than 60 feel that they also could have planted apple trees and would have earned more, but the fact was that they were being respectful to nature and accepted that since naturally those are not grown in the soil of Spiti.</li> <li>f. In Lahaul and Spiti there are mud flats and hills and not made of stones. When there is rain mud slips and muddy water comes down.</li> <li>g. Lack of training/skill enhancement/capacity building on the use of Early Warning Systems was highlighted. An example was narrated, that happened in Rampur near the Negulsarai area. One day an early warning system which was installed for landslide warning, near the road. On a sunny day the EWS road sign was Red and there was heavy traffic due to that, the police personnel manning the EWS road signal was clueless on the reasons for EWS being red.</li> <li>h. Earlier people were using their traditional knowledge that if there was dust and moving in a particular direction, it was an indication of landslide. This was very common and still very common among the senior citizens. They also could feel by touching metals whether there will be snow fall. The scientific reasons need to be looked into and promoted.</li> <li>i. People have TV but the GoHP is not using this media for disseminating information. There needs to be a disclosure and dissemination strategy.</li> <li>j. Regarding the water sports facility at the Pong Dam there is lack of coordination between the departments, as a result people are harassed. They procure equipment, which later goes to other places, as a result of lack of accountability of the authority.</li> <li>k. 13 years ago, Kalpa had 22 springs and in 2022 there exists only 2.</li> </ol>	

<b>5. Meeting with the Gram Panchayat Pradhan, Batseri GP, Kinnaur</b>	
Date: 04-Nov-2022	Venue: Batseri Gram Panchayat, Kinnaur
<b>Participants</b>	<ol style="list-style-type: none"> <li>1. Mr Pradip Negi, Pradhan Batseri Gram Panchayat</li> <li>2. Mr Balbinder Singh, Patwari, Themgoran, Kupa, Kamru GPs and 20 villages</li> <li>3. Dr Biplab Ghosh,</li> <li>4. Mr Bipradip Das,</li> <li>5. Dr Aniruddha Dey, Social Development Expert</li> </ol>
<b>Key Insights from the Meeting</b>	
a. The people were not familiar with the term DDMA. However, people know that disaster management activities are undertaken under the stewardship of the DC.	
b. There should be competent personnel in the Revenue Department to do the coordination activities with different line departments as well as with the first responders, like the GPs.	
c. There is no disaster task force in the GP.	
d. Capacity Building initiatives are mainly task fulfilments. At the district level they plan to organise Training programs and call a few persons of their choice to attend the training programs. Since it's done on personal contacts, the trainees never show any accountability.	
e. Many people have opted for adventure tourism as their profession, who are also skilled in search and rescue operations.	
f. In the panchayat there are three persons - a) Captain Palden b) Asst Commandant Avinash Negi and c) Amit Negi, who has conquered Everest in the past but they are not given due importance.	
g. Trekking is very famous here. Earlier to this visit, Sangla Valley people needed inner line permit. Since 1980 this was lifted and Sangla Valley became a tourist spot. Most of the people come for trekking. But due to some incidents in August 2022 GoHP has banned trekking. This has an adverse impact on the local economy as tourism has become the second most important economic activity of the area.	
h. Cloud bursts were there before but since 2005 the frequency has increased. It could be due to the movement of cold air to fill the gaps created due to the evaporation from the surface of the rivers and streams. These clouds cannot cross the high mountains around (almost 6000 meters) and finally precipitates, which become cloud bursts. During that time, lightnings are vertical, otherwise lightnings are horizontal and till date it has not claimed any life, although increased.	
i. Initially the people of the area used organic manure but some years back they started using chemical fertilizers and pesticides. Now many farmers have realised the consequences of using chemicals and started reverting back to their traditional farm practices organically.	
j. Gram Sabhas is not conducted the way it was supposed to be conducted as people don't want to waste time, since the plans they were submitting were never approved.	
k. Meetings at the District were never called to discuss any disaster management related activities.	
l. Gram Panchayat level plans were being prepared which would be shared by the Secretary with the Consultants.	
m. EWS device costing Rs 80,000/- was installed. However, the device was not giving expected results as for small shooting stones there were no alarm system. After enquiry it was found that the device was designed for sounding alarm on massive movements only. However, the villagers also got upset as it was not meeting their expectations and being frustrated they damaged the device.	

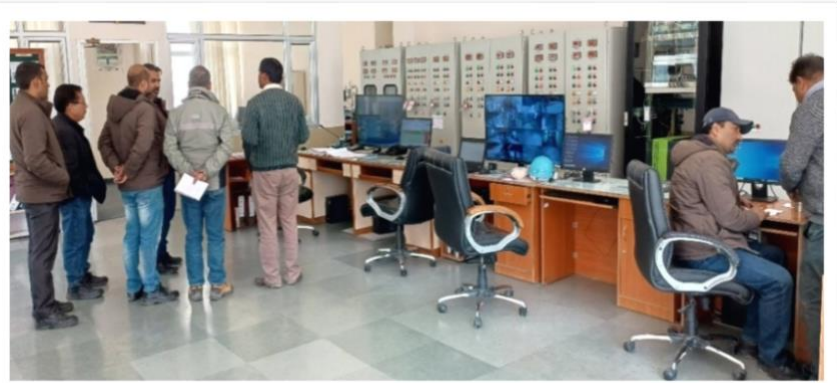
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Meeting with the Gram Panchayat Pradhan, Batseri GP, Kinnaur on 4<sup>th</sup> November



Visit to the Land Slide Site and Early Warning Gazette installation site at Batseri Village, Kinnaur on 4<sup>th</sup> November



Meeting with the Safety Officer, Karcham Dam, Kinnaur on 4<sup>th</sup> November

<b>6. Meeting with the DDMA Coordinator, Lahaul-Spiti</b>	
Date: 05.11.2022	Venue: Sissu, Lahaul-Spiti
<b>Participants</b>	<ol style="list-style-type: none"> <li>1. Mr Nitin Sharma, Coordinator, DDMA, Lahaul-Spiti</li> <li>2. Dr Biplab Ghosh,</li> <li>3. Mr Bipradip Das,</li> <li>4. Dr Aniruddha Dey, Social Development Expert</li> </ol>
<b>Key Insights from the Meeting</b>	
<p>a. In this mountain district Land Slide &amp; Rock fall, Flash Flood, Cloud Bursts, Avalanche, Glacier Melting are common. People have two options for living a) Agri/horticulture and b) tourism. To address disasters related to tourism lots of works can be done.</p>	
<p>b. Tourists - a) Day tourists up to Sissu b) Lay bound since the opening of the Atal Tunnel c) to visit Lahaul Valley.</p>	
<p>c. Baralacha la is situated at 4900 mtrs altitude. Last point of Lahaul is Sarchu where Oxygen Parlour can be established.</p>	
<p>d. High altitude sickness is another problem. There are some herbs, which can give relief from this type of problems but people are no more using them as a result there is every possibility of losing a rich heritage. However, they are using Camphor and wild Garlics to maintain oxygen level in the human body.</p>	
<p>e. Problems of medical facilities - Although there are Primary Health Centres (PHCs) but neither expert doctors nor adequate equipment are there. During winter for medical exigencies, they have to ask for helicopters from the Army. As the Helicopters are dedicated for CMs visit etc. they are not always available and Private helicopters are very costly, charge Rs 2,00,000/- to reach up to Manali.</p>	
<p>f. Only 10% population stay back during winter and others go down to Kulu. Those who stay back it's not easy to take them to the nearest medical facility. They need to be carried in stretchers by the local youths crossing the road by snow cutting in absence of Snow Scooters/ Sledges.</p>	
<p>g. For pregnant women also medical facilities are not adequate.</p>	
<p>h. Wild birch (Bhojpatra), Junipers and Kashmiri Willows are the main plant species.</p>	
<p>i. Vegetables grown are mostly Peas, cauli flower, cabbage etc. which are considered as cash crops but all are snow fed.</p>	
<p>j. After March, ice starts melting and people used to get water for their household activities as well as for irrigation. However, shrinking in number of springs have already occurred because of overuse and unplanned agricultural growth.</p>	
<p>k. Only during September to November, trainings can be conducted as it's difficult because of winter after November and after March when snow melting starts most of the villagers work in their agricultural fields.</p>	
<p>l. He was emphasising a typical feature of the education system, that schools remain open during winter, mainly because children need to be involved in physical activities, otherwise if they are not under pressure, they will face health hazards. On the other hand, schools remain closed during summer as the students join hands in the family land for agricultural activities.</p>	
<p>m. Road Signs are inadequate, the main problem is the National Highways (NH) is being maintained by the Border Roads Organization (BRO) and road signs are under their discretion and it is difficult to convince them. However, very few roads are constructed and maintained by the PWD still adequate road signs are not there. Only the DDMA put a few convex mirrors in the turnings. Helpline number 1077 is not widely disseminated.</p>	
<p>n. The Coordinator, DDMA informed that when a disaster hits he needs to coordinate with the line Departments like Police, PWD, Tourism, Forest, Civil aviation, etc. and he doesn't feel it important to involve people as they would not be of any help, mainly, during winters.</p>	
<p>o. Regarding the traditional knowledge systems, traditionally people construct their houses in a small corner, a place where Avalanche will not cause any harm to their dwellings.</p>	

- p. However, with emphasis on how the team including the members of DDMA, Patwaris, Police and other line departments work in a coordinated manner. Even the female staff in DDMA work on rosters and at night.



Meeting with the DDMA Coordinator, Lahaul-Spiti on 5<sup>th</sup> November



Visit to Land Slide, Rock Fall and Avalanche Sites (Sissu, Raling, Khansar, Phugtal, Dalang, Tandi, Rangbe, Tozing, Jispa, Darcha), Lahaul-Spiti on 5<sup>th</sup> November



Meeting with Mahila Mandal, Rangway Village, Lahaul-Spiti on 5<sup>th</sup> November

<b>7. Meeting with Mahila Mandal at Mahila Mandal Bhavan Lahaul-Spiti</b>	
Date: 05-Nov-2022	Venue: Mahila Mandal Bhavan, Rangway Village, Lahaul-Spiti
<b>Participants</b>	<ol style="list-style-type: none"> <li>1. Tenzing Dolma</li> <li>2. Rigzing Dolma, Pradhan, Lots GP</li> <li>3. Sonam Dolma</li> <li>4. Ramdasi</li> <li>5. Tashi Yanzhom</li> <li>6. Priyanka</li> <li>7. Kiran</li> <li>8. Mr Mahabir, Villager cum Farmer</li> <li>9. Surendar Kumar, Patwari, Lote</li> <li>10. Anrup Kesan, Patwari, Shansha</li> <li>11. Mr Nitin Sharma, Coordinator, DDMA, Lahaul-Spiti</li> <li>12. Dr Biplab Ghosh,</li> <li>13. Mr Bipradip Das,</li> <li>14. Dr Aniruddha Dey, Social Development Expert</li> </ol>
<b>Key Insights from the Meeting</b>	
a. The Mahila Mandal (MM) in the village started 40 years back.	
b. Each family has a stake in this village level institution and by default one female from each family becomes a member of the Mahila Mandal.	
c. They meet at least once a month and during meeting they collect their mandatory monthly deposit of Rs 10/- and collect information from every family. They also support social causes.	
d. During the devastating flood in the Chenub in August 2021 they worked very hard and their humanitarian response was highly appreciated at different levels. They were involved in cooking food for the rescued people, rescuers and others deputed from the district for the operation. Their efforts of feeding the disaster victims and people associated in the activities, providing them shelter for one and half days were remarkable. They incurred the expenses from the collections of the members and till date they didn't produce any bill to get the amount reimbursed. However, the DDMA Coordinator informed the members about the process of generating claims. On the other hand, the Members of the MM said disaster management is a new concept and response and cooperation is cultural for them. Since time immemorial they live in harmony and maintaining cordial relationship with their neighbours.	
e. Members informed that they need trainings at their respective villages as it's difficult for them to go to the faraway places.	
f. Community needed Solar Water Geysers, which will have direct impacts on the climate change issues in the snow fed Agri/horticultural practices. They informed that after a few days the Community will face water scarcity as water will be condensed in the form of ice, the pipelines will be choked, they need to melt the ice with fuel wood for use. Solar lighting, solar cooker etc. are good options to give relief to the women and other family members.	
g. families use fuel wood (these are local timbers, mainly used for fuel). They have been using a device, which they refer as Tandoor for cooking as well as for heating the room and they suffer from IDP issues. Also many a times children burnt their palms, fingers etc. They also need some amount of Kerosene oil for igniting fire. The members agreed and identified the fire risk issues in the rooms with wooden interiors. They also informed about the scarcity of fuel wood, which would become a problem in the snow desert areas.	
h. Members informed that cooking is the job of women in the family traditionally, although these days' male folks are also joining hands. However, it's a fact that women grow old very fast than their male counterparts mainly because of hazardous cooking arrangements and other household activities.	

- i. High altitude sickness is another problem. There are some herbs, which can give relief from this type of problems but people are no more using them as a result there is every possibility of losing a rich heritage from the society.



Visit to DDMA, Lahaul-Spiti on 6<sup>th</sup> November

<b>8. Meeting with Pradhan, Palchan Gram Panchayat, Kullu</b>	
Date: 06-Nov-2022	Venue: Gram Panchayat Office, Palchan, Kullu
<b>Participants</b>	<ol style="list-style-type: none"><li>1. Kaushalya Devi – Pradhan</li><li>2. Nimu Devi – Ward no. 6</li><li>3. Prashant - Coordinator, DDMA, Kullu</li><li>4. Dr Aniruddha Dey, Social Development Expert</li><li>5. Dr Biplab Ghosh, Climate Change Expert</li><li>6. Mr Bipradeep Dad, GIS Expert</li></ol>
<b>Key Insights from the Meeting</b>	
<ol style="list-style-type: none"><li>a. Volunteer task force, hazards and resource mapping is done</li><li>b. JUARE program held in the panchayats</li><li>c. Issues of fire in the villages like Solang incident in 2009 which resulted in huge losses</li><li>d. Regarding requirements of rescue equipment at the panchayat level they were not very clear but gaps like inadequacy of space to store that equipment, personnel to manage them like stock taking were explained.</li><li>e. There is no panchayat level disaster management plan</li></ol>	



Meeting with Pradhan, Palchan Gram Panchayat, Kullu on 6<sup>th</sup> November

<b>9. Meeting with the District Inter Agency Group (DIAG) Members, Kullu</b>	
Date: 06-Nov-2022	Venue: Conference Hall of the District Collector's office
<b>Participants</b>	<ol style="list-style-type: none"> <li>1. Coy Comdr. Kamal Bhandari, Himachal Pradesh Home Guard, 9<sup>th</sup> Bn, Kullu (9805023797)</li> <li>2. Shiv Ram, Director, The Little Rebel Adventurer, Parvati Valley, Kutagla, P.O. Kasol (9805528300)</li> <li>3. Vishal Thakur, President, National Adventure Foundation, Kullu Chapter, (9816187595)</li> <li>4. Prem Kumar Mahant, Chairman, Nature &amp; Life Savers Association, Kullu, (8219541351)</li> <li>5. Pawan Sharma, Member, Nature &amp; Life Savers Association, Kullu, (8219358321)</li> <li>6. Yashpal, HDRA, Manali, Kulu, (7831808912/ 9816504950)</li> <li>7. Prashant - Coordinator, DDMA, Kullu</li> <li>8. Dr Aniruddha Dey, Social Development Expert</li> <li>9. Dr Biplab Ghosh, Climate Change Expert</li> <li>10. Mr Bipradip Das, GIS Expert</li> </ol>
<b>Key Insights from the Meeting</b>	
a.	Lots of accident due to the volume of tourists
b.	Guide to tourist ratio is high
c.	Hazard, Risk, Vulnerability & Capacity Analysis (HRVCA) to be conducted
d.	Convex traffic mirror and drivers' training are essential
e.	Separate license for adventure tourism is proposed
f.	Guidelines for tourism portals
g.	License for guides is proposed
h.	Clarity on DIAG and their Roles and Responsibilities are to be developed



Meeting with DIAG,  
Kullu on 6<sup>th</sup> November



Visit to Cloud Burst  
Site at Manikaran,  
Kullu on 6<sup>th</sup> November

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Meeting with GP members and others at Manikaran, Kullu on 6<sup>th</sup> November



Meeting with ADM, Kullu on 7<sup>th</sup> November

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<b>10. Meeting with ADM, Kullu</b>	
Date: 07-Nov-2022	Venue: ADM Office, Kullu
<b>Participants</b>	<ol style="list-style-type: none"><li>1. Mr P. Sirkek, ADM, Kullu</li><li>2. Mr Prasant, Coordinator, DDMA, Kullu</li><li>3. Dr Biplab Ghosh, Climate Change Specialist</li><li>4. Mr Bipradip Das, GIS Expert</li><li>5. Dr Aniruddha Dey, Social Development Expert</li></ol>
<b>Key Insights from the Meeting</b>	
a. The purpose of the visit was briefed	
b. Finalizing the priority projects from Kullu districts was discussed	
c. DPRs and study reports and other necessary documents are to be made ready	
d. Sharing of JUARE program at different levels needed	

<b>11. Meeting with SDRF Personnel, Mandi</b>	
Date: 07-Nov-2022	Venue: SDRF office, 3rd Batalion Police HQ, Pandoh, Mandi
<b>Participants</b>	<ol style="list-style-type: none"> <li>1. Binay Minhas, Dy SP, SDRF, MANDI</li> <li>2. Som Dutt, Inspector, SDRF, MANDI</li> <li>3. Anil Kumar, Constable, SDRF, Mandi</li> <li>4. Ms Vidhya, Head Constable, SDRF, Mandi</li> <li>5. Dr Biplab Ghosh,</li> <li>6. Mr Bipradip Das,</li> <li>7. Dr Aniruddha Dey, Social Development Expert</li> </ol>
<b>Key Insights from the Meeting</b>	
a. SDRF Mandi caters to Mandi, Kullu Manali, Lahaul-Spiti, Bilaspur and Hamirpur districts.	
b. This is a temporary place hired from the 3rd Battalion of Himachal Pradesh Police and they are now sitting in one big room, which is their Warehouse cum office, cum sitting place of all personnel.	
c. They have 67 personnel and all are on deputation from the police department. From NDRF only 46 personnel are trained (45 days' course). One person has got Drone training from Mandi IIT but it was difficult for the informant to talk about the category and whether the person has received license. The department doesn't have complete information and is not in a position to see him as their HR.	
d. Now 6 people have joined for ToT by NDRF. Altogether in HP there are 3 SDRF Battalions and total 100 from all three places got ToT and out of this from the battalion only 33 have already got ToT.	
e. 33 bighas of forest land has been identified. Although almost all processes are complete but the land is yet to be transferred to them by the forest department. Because of the delay in land transfer, they couldn't prepare any layout plan.	
f. Only DDMA Mandi invites them for meetings but other districts never inform them nor invite them to attend the meetings. However, after the Cloud Burst at Manikaran they were called. Team reached the spot but there was no coordination and arrangements for the rescue team to stay and food was not there. The Dy SP informed that there was also a question of acclimatization. The rescuers were new to the site. He also said that he had to raise his voice and warned the district administration that if the basics are not provided to the rescuers, then the team will be withdrawn. After that basic arrangements were made.	
g. They have rescue boats with capacity of 150kgs each, which means where the water level is up to waist height the rescuers can rescue two adults. The boats have facilities for airlifting also, but not tested. However, those boats are not at all meant to work in the terrain where rivers are coming down from the mountains and water passes on the boulders. Those boats are meant for the plains where water gets stagnant or in the rivers of the plain land.	
h. However, the Dy SP, SDRF, Mandi informed that they send their Jawans for routine trainings for 45 days by the NDRF, but actually that makes jack of all trades and no one becomes expert. While they need disaster specific special trainings for example none have got the expertise in snow cutting.	
i. Neither the unit is equipped with snow scooters and Sledges. These are special equipment to be in place with the SDRF team, instead of being in the hands of the DDMA's. He was emphasising on the regular maintenance parts of such valuables as well as special instruments, which could be possible at SDRF but not at DDMA's.	
j. They also don't possess any Fire Fighting equipment, while in the district forest fire and fire from houses is a big issue.	
k. They have only three vehicles now - one bus, one small truck and one Bolero car. Still, they couldn't visualise the set up as they didn't have any exposure	

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Meeting with SDRF Personnel, Mandi on 7<sup>th</sup> November



Meeting with TDU, Sundernagar, Mandi on 7<sup>th</sup> November



Visit to the proposed land for TDU, Sundernagar, Mandi on 7<sup>th</sup> November

<b>12. Meeting with the Director cum Principal of the JN Govt Engineering College for TDU</b>	
Date: 07-Nov-2022	Venue: At the Director's Chamber of the JN Govt Engineering College, Mandi
<b>Participants</b>	<ol style="list-style-type: none"> <li>1. Dr S P Guleria, Director/ Principal,</li> <li>2. Mr Ashok Thakur, Associate Professor</li> <li>3. Dr Aniruddha Dey, Social Development expert</li> <li>4. Dr Biplab Ghosh, CC Specialist</li> <li>5. Mr Bipradip Das, GIS Expert</li> </ol>
<b>Key Insights from the Meeting</b>	
a. Dr. Guleria confirmed that 12 bigha (4 acres) land has been transferred for the purpose of developing TDU by the GoHP. The land is now free from all encumbrances and almost 10 km away from their Institute and on a valley, which is good for construction of demonstration units, however located only 300 mts away from the National Highway. In the surroundings there are residential areas, which, to him is good for interaction with the local people.	
b. He was emphasising on the importance of trainings to be imparted for the Mason's, building contractors and real estate agencies. To do that he said they have tried to keep the provisions of trainees' hostel, guest house facility for the Resource persons, research facilities etc.	
c. He said they have plans to construct seismic resistant mud houses based on traditional technologies with some value addition.	
d. For generating awareness among the mass a mobile van equipped with messages, models, IECs etc. Is planned.	
e. It is being planned to use TDU as the 2nd campus of the Engineering College where the students will get opportunities to learn through application. This to him would be beneficial in terms of Technology transfer.	
f. The soft copies of the DPR was arranged and physical verification of the site was conducted	
g. However, it is important for the TDU management to consider the Social Engineering aspects too apart from conventional civil engineering aspects like the provision for making space for the residents to earn their livelihood, toilet pits/ septic tanks to be constructed over the ground to avoid inundation, provision for child friendly spaces, electricity can be generated using solar energy, etc.	



Visit to Katropi Land Slide Zone, Mandi on 8<sup>th</sup> November

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Meeting with the NHAJ  
personnel, Mandi on 8<sup>th</sup>  
November



Meeting with the Coordinator, DDMA, Kangra on 9<sup>th</sup>  
November

<b>13. Meeting with the Coordinator, DDMA, Kangra</b>	
Date: 09-Nov-2022	Venue: Jwalamukhi and Dehra Hospital, Kangra
<b>Participant (s)</b>	<ol style="list-style-type: none"> <li>1. Mr Bhanu Sharma, Coordinator, DDMA, Kangra</li> <li>2. Dr Aniruddha Dey, Social Development expert</li> <li>3. Dr Biplab Ghosh, CC Specialist</li> <li>4. Mr Bipra Das, GIS Expert</li> </ol>
<b>Key insights from the Meeting</b>	
a. From DDMA - Trainings are being imparted. Main training focuses are on Earthquake, Flood and Land Slide.	
b. Emphasis during the training are Basics of Disaster Management, Medical First Aid, Search & Rescue, CPRs.	
c. Mr Sharma informed that one trainee of the locality of Boh Drini, Sahpur Sub-division saved life of 5 people before the NDRF team reached the place, by the time the NDRF team reached they could rescue only 10 dead bodies. One lady trainee from Dehra Sub-division used her knowledge and applied CPR and saved the life of one 7 years old girl child.	
d. Under the State sponsored scheme, 15-20 volunteers from each GP (3 days) and Aapda Mitra - Central Government Scheme (14 days) 300 volunteers in the Kangra district are being trained	
e. The DDMA took the approach under PPP model for setting up of Residential Training Institute. They implemented with one NGO (IRC and Educate) for infrastructure (residential facilities).	
f. Selection of trainees - ASHA, ANM, FOREST GUARD, PANCHAYAT SAHAYAK, NYK and NSS YOUTH.	
g. AAPADA MITRA volunteer - 814 GPs divided into clusters for selecting 300 volunteers. From State scheme trained volunteers they have selected only well trained people for AAPADA MITRA (AM). The strategy is as follows: a) Out of the selected 30 colleges, 10 Aapada Mitras from one college will be there. In the process the Colleges are also being strengthened (as there are different departments and they are selected for AFADA MITRA trainings and become designated Aapada Mitras). b) One Aapada Mitra will be tied up with 3 GPs which means 10 AM will be there for 30 GPs. Under such institutional arrangements and strengthening all stakeholders get benefitted. This is the approach of the DDMA that they are planning to adopt. However, in reality execution is difficult.	
h. The target was to reach 12000 State scheme volunteers, but reached to almost 7000 volunteers.	
i. Mason training target in 3 years was 3700 but they could complete only 100 due to lack of resource persons. Solution/ alternative arrangements should be taken up to resolve the issue. The DDMA needs to use the funds earmarked for resource persons for consultancy assignments. In that case they can design Terms of Reference (ToRs) and jobless skilled persons can work as resource persons.	
j. It is difficult to mobilise the masons. However, through volunteers, mobilisation would be done, and the GoHP has approved Rs 500/- per day per Mason for training. But it is difficult to get the resource persons, as they can't/ don't turn up, though earmarked per trainer is Rs 600/- per lecture.	
k. Officers when get transferred the whole strategy gets changed.	

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Visit to Civil Hospital, Jwalamukhi, Kangra on 9<sup>th</sup> November



Visit to Civil Hospital, Dehra, Kangra on 9<sup>th</sup> November

**Annexure 10: Tentative Table of Content for E&S Bi-annual Monitoring Report**

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1. Introduction
2. Project E&S Safeguard Management
3. Status of E&S Compliance
4. Any other E&S Impact observed
5. Stakeholder Consultation
6. Capacity Development
7. Gap identified, Follow-up Action and Conclusion

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<sup>28</sup> Adopted from: <https://www.niua.org/citiis/sites/default/files/E%26S%20Monitoring%20Report%20Template.pdf>